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Environmental Impact Statement/ Environmental Impact Report

Volume I

Kern River 2003 Expansion Project

Federal Energy Regulatory Commission
Washington, DC

California State Lands Commission
Sacramento, CA

Cooperating Agencies:
Bureau of Land Management
U.S. Department of Agriculture, Forest Service

FERC/EIS-0144
Docket No. CP01-422-000

CSLC EIR No. 710
State Clearinghouse No. 2001071035
BLM Reference Nos. CACA-43346
CACA-17918

June 2002

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Final Environmental Impact Statement/ Environmental Impact Report

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Volume I

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June 2002

In Reply Refer To:
OEP/DEER/Gas Branch 1
Kern River Gas Transmission Company
FERC Docket No. CP01-422-000
CA Clearinghouse No. 2001071035
CSLC EIR No. 710
BLM Reference Nos. CACA-43346
and CACA-17918

TO THE PARTY ADDRESSED:

The staffs of the Federal Energy Regulatory Commission (FERC or Commission) and the California State Lands Commission (CSLC) have prepared this final environmental impact statement/report (EIS/EIR) to address natural gas pipeline facilities proposed by Kern River Gas Transmission Company (KRGT).

The final EIS/EIR was prepared as required by the National Environmental Policy Act and the California Environmental Quality Act (CEQA). Its purpose is to inform the public and the permitting agencies about the potential adverse and beneficial environmental impacts of the proposed project and its alternatives, and recommend mitigation measures that would reduce any significant adverse impacts to the maximum extent possible and, where feasible, to a less than significant level. With one exception, the EIS/EIR concludes that the potentially significant adverse environmental impacts of the proposed project can be mitigated to a level of insignificance with appropriate mitigation measures. As discussed in the EIS/EIR, a long-term reduction in the special concern vegetation communities of yucca, cactus, and agave cannot be ruled out and, therefore, potential impacts on these species could be significant. Accordingly, the CSLC's approval of the project would be subject to a Statement of Overriding Considerations under the CEQA due to this significant unavoidable impact that could remain after mitigation is applied. [1/]

The Bureau of Land Management (BLM) is participating as a cooperating agency in the preparation of this EIS/EIR because the project would cross Federal land under the jurisdiction of seven field offices in Wyoming, Utah, and Nevada, and one district office and three field offices in California. The U.S. Department of Agriculture, Forest Service (FS) is also a cooperating agency in the preparation of this document because the Dixie National Forest and the Humboldt-Toiyabe National Forest/Spring Mountains National Recreation Area would be crossed by the project. The EIS/EIR will be used by the BLM to consider issuance of a new or amended right-of-way grant for the portion of the project on Federal lands.

This final EIS/EIR addresses the potential environmental effects of the construction and operation of the following facilities in Wyoming, Utah, Nevada, and California:

- 634.5 miles of 36-inch-diameter pipeline adjacent to KRGT's existing pipeline in Wyoming (Lincoln and Uinta Counties), Utah (Summit, Morgan, Salt Lake, Utah, Juab, Millard, Beaver, Iron, and Washington Counties), Nevada (Lincoln and Clark Counties), and California (San Bernardino County);

1/ The CEQA Guidelines Section 15093 requires the CSLC to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

- 82.2 miles of 42-inch-diameter pipeline adjacent to the portion of KRGT's existing pipeline that it jointly owns with Mojave Pipeline Company in California (San Bernardino and Kern Counties);

- 0.8 mile of 12-inch-diameter pipeline in Uinta County, Wyoming;

- three new compressor stations, one each in Wyoming (Uinta County), Utah (Salt Lake County), and Nevada (Clark County) for a total of 60,000 horsepower (hp) of compression;

- modifications to six existing compressor stations, one in Wyoming (Lincoln County), three in Utah (Utah, Millard, and Washington Counties), one in Nevada (Clark County), and one in California (San Bernardino County) for a total of 103,700 hp of new compression;

- modifications to one existing meter station in Wyoming (Lincoln County) and four existing meter stations in California (two each in San Bernardino and Kern Counties); and

- various mainline block valves, internal inspection tool launcher/receiver facilities, and other appurtenances.

The final EIS/EIR has been placed in the public files of the FERC and the CSLC and is available for public inspection at:

Federal Energy Regulatory Commission
Public Reference and Files Maintenance Branch
888 First Street, N.E., Room 2A
Washington, DC 20426
(202) 208-1371

and

California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825
(916) 574-1890

The final EIS/EIR was filed with the U.S. Environmental Protection Agency and submitted to the California State Clearinghouse. The document was also mailed to appropriate Federal, state, and local agencies; elected officials, Native American groups; newspapers; public libraries; intervenors to the FERC's proceeding; and other interested parties who provided scoping comments, commented on the draft EIS/EIR, or wrote to the FERC, the CSLC, or the BLM asking to receive a copy of the document. A formal notice indicating that the final EIS/EIR is available was published in the Federal Register and posted in the appropriate County Clerks' offices in California.

A limited number of copies of the final EIS/EIR are available from the FERC's Public Reference and Files Maintenance Branch identified above. Copies may also be obtained from Cy Oggins, CSLC, at the address above. The final EIS/EIR is available for viewing on the project web site at http://www.kernriver2003.com and at the public libraries listed in appendix 1 of this notice.

Additional information about the proposed project is available from Cy Oggins at the CSLC at (916) 574-1884, or on the CSLC web site at http://www.slc.ca.gov, and from the FERC's Office of External Affairs

at (202) 208-1088 (direct line) or you can call the FERC operator at 1-800-847-8885 and ask for External Affairs. Information is also available on the FERC web site at http://www.ferc.gov using the "RIMS" link. Click on the "RIMS" link, select "Docket#," and follow the instructions (call (202) 208-2222 for assistance). Access to the texts of formal documents issued by the FERC, such as orders and notices, is also available on the FERC web site by using the "CIPS" link, selecting "Docket#," and following the instructions. For assistance with access to CIPS, the CIPS helpline can be reached at (202) 208-2222.

Information concerning the involvement of the BLM is available from Jerry Crockford, BLM Project Manager, at (505) 599-6333. Information concerning the involvement of the FS is available from Kathy Slack, Supervisor's Office, at (435) 865-3742.

The CSLC will meet to consider certification of the final EIS/EIR and take action on the proposed project at a public meeting in 2002. Interested parties will be notified of the date, time, and place of the meeting 10 to 15 days in advance. If you have any questions regarding the CSLC meeting, or wish to testify, please contact Cy Oggins at the number above.

Magalie R. Salas
Secretary
Federal Energy Regulatory Commission

Paul D. Thayer
Executive Officer
California State Lands Commission

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Bunkerville, NV 89007

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Caliente, NV 89008

Ormsby Public Library
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Carson City, NV 89701

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Archives
Library Building,
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Elko, NV 89801

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Elko/Lander/Eureka
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Irvine, CA 92623

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Los Angeles County Library,
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Quartz Hill, CA 93534

Government Publications
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California, PO Box 5900
Riverside, CA 92517

Kern County Library,
Wanda Kirk Branch
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Kern County Library,
Tehachapi Branch
450 W "F" Street
Tehachapi, CA 93561

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82805 Mountain View
Trona, CA 93562

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Colorado State University
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The Libraries
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Natural Resources Library,
Serials Branch-GE, US
Department of the Interior
18th & C Street NW
Washington, DC 20240

Missouri

Linda Hall Library
5109 Cherry Street
Kansas City, MO 64110

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ACRONYMS AND ABBREVIATIONS

AAQS	ambient air quality standards
ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
AFB	Air Force Base
Agency Staffs	environmental staffs of the FERC and the CSLC
APE	area of potential effects
AQMD	Air Quality Management District
ASME	American Society of Mechanical Engineers
BA	Biological Assessment
BACT	Best Available Control Technology
Bcf/d	billion cubic feet per day
bgs	below ground surface
BLM	Bureau of Land Management
BO	Biological Opinion
CAA	Clean Air Act
Caltrans	California Department of Transportation
CAOC	Comprehensive Environmental Response, Compensation, and Liability Act Area of Concern
CDCA	California Desert Conservation Area
CDD	California Desert District
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDWR	California Department of Water Resources
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
Certificate	Certificate of Public Convenience and Necessity
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CO	carbon monoxide
COE	U.S. Army Corps of Engineers
COM Plan	Construction, Operation, and Maintenance Plan
Commission	Federal Energy Regulatory Commission
CRHR	California Register of Historical Resources
CSLC	California State Lands Commission
CWA	Clean Water Act
dBA	decibels of the A-weighted scale
DOT	U.S. Department of Transportation
DPLA	Division of Planning and Local Assistance
Dth/d	dekatherms per day
DTPC	Desert Tortoise Preserve Committee
EA	environmental assessment
EI	environmental inspector
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
El Paso	El Paso Natural Gas Company
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FCR	field contact representative

FERC	Federal Energy Regulatory Commission
FERC Plan	FERC's Upland Erosion Control, Revegetation, and Maintenance Plan
FERC Procedures	FERC's Wetland and Waterbody Construction and Mitigation Procedures
FLPMA	Federal Land Policy and Management Act of 1976
FS	U.S. Department of Agriculture, Forest Service
FWS	U.S. Fish and Wildlife Service
GHG	greenhouse gas
GMP	general management plan
HAP	hazardous air pollutant
HDD	horizontal directional drill
HMA	herd management area
hp	horsepower
IBC	International Building Code
IPP	independent power producer
ISB	Intermountain Seismic Belt
ISO	International Organization for Standardization
KRGT	Kern River Gas Transmission Company
L_{dn}	day-night sound level
$L_{eq(24)}$	24-hour equivalent sound level
LADWP	Los Angeles Department of Water and Power
LRMP	land and resource management plan
MACT	Maximum Achievable Control Technology
MAOP	maximum allowable operating pressure
MEA	management emphasis area
MFP	management framework plan
$\mu g/m^3$	micrograms per cubic meter
mils	millimeters of thickness
MLV	mainline valve
MMcfd	million cubic feet per day
MMP	mitigation monitoring program
Mojave	Mojave Pipeline Company
MOU	Memorandum of Understanding
mph	miles per hour
MRZs	Mineral Resources Zones
MSHCP	Multi-species Habitat Conservation Plan
MUC	multiple-use class
MUIDS	map unit identifiers
NAAQS	National Ambient Air Quality Standards
NBMG	Nevada Bureau of Mines and Geology
NCA	National Conservation Area
NDEP	Nevada Division of Environmental Protection
NDF	Nevada Division of Forestry
NDOW	Nevada Division of Wildlife
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFMA	National Forest Management Act
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service

NNHP	Nevada Natural Heritage Program
NNSR	non-attainment new source review
NO	nitrogen oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOI	Notice of Intent
NOP	Notice of Preparation
Northwest	Northwest Pipeline Corporation
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRA	National Recreation Area
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statute
NSA	noise-sensitive area
NSPS	New Source Performance Standards
NSR	new source review
NTC	National Training Center
NTSB	National Transportation Safety Board
O_3	ozone
OEP	Office of Energy Projects
OHV	off-highway vehicle
OPS	Office of Pipeline Safety
PA	Programmatic Agreement
Pb	lead
PD	Preliminary Determination on Non-Environmental Issues
PM_{10}	particulate matter less than 10 microns in diameter
ppm	parts per million
PRM Plan	Paleontological Resource Mitigation Plan
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
QWK EIS	Questar, Williams, Kern River Final Environmental Impact Statement
R&PP Act	Recreation and Public Purposes Act
RMP	resource management plan
ROD	Record of Decision
RSPA	Research and Special Programs Administration
RV	recreational vehicle
RWQCBs	Regional Water Quality Control Boards
SAA	Streambed Alteration Agreement
SCADA	Supervisory Control and Data Acquisition
Secretary	Secretary of the Commission
SHB	Sergent, Hauskins & Beckwith
SHPO	State Historic Preservation Office
SIP	state implementation plan
SITLA	School and Institutional Trust Lands Administration
SMA	Special Management Area
SO_2	sulfur dioxide
Solar	Solar Turbines Incorporated
STATSGO	State Soil Geographic database

TCP	traditional cultural properties
tpy	tons per year
Transwestern	Transwestern Pipeline Company
TUA	temporary use area
UBC	Uniform Building Code
UCDC	Utah Conservation Data Center
UDEQ	Utah Department of Environmental Quality
UDWR	Utah Division of Wildlife Resources
UECRM Plan	KRGT's Upland Erosion Control, Revegetation, and Maintenance Plan
UGS	Utah Geological Survey
USGS	U.S. Geological Survey
VOC	volatile organic compound
VQO	Visual Quality Objectives
VRM	Visual Resource Management
WGFD	Wyoming Game and Fish Department
WNDD	Wyoming Natural Diversity Database
Woodward-Clyde	Woodward-Clyde/D.J. Nyman & Associates
WSA	wilderness study area
WSRA	Warm Springs Resource Area
WWCM Procedures	KRGT's Wetland and Waterbody Construction and Mitigation Procedures

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The environmental staffs of the Federal Energy Regulatory Commission (Commission or FERC) and the California State Lands Commission (CSLC) (Agency Staffs) have jointly prepared this final environmental impact statement/environmental impact report (EIS/EIR) for the Kern River 2003 Expansion Project to fulfill the requirements of the National Environmental Policy Act (NEPA); the Council on Environmental Quality Regulations for implementing NEPA (Title 40 Code of Federal Regulations [CFR], Parts 1500-1508); the FERC's implementing regulations (Title 18 CFR, Section 380); the California Environmental Quality Act (CEQA)(Public Resources Code Section 21000 *et seq.*); and the CEQA implementing guidelines (California Code of Regulations Title 14, Section 15000 *et seq.*). The purpose of this document is to inform the public and the permitting agencies about the potential adverse and beneficial environmental impacts of the proposed project and its alternatives, and to recommend mitigation measures that would reduce the significant adverse impacts to the maximum extent possible, and, where feasible, to a less than significant level.

The Bureau of Land Management (BLM) and the U.S. Department of Agriculture, Forest Service (FS) Dixie National Forest and Humboldt-Toiyabe National Forest are cooperating agencies. As a cooperating agency, the BLM proposes to adopt this EIS/EIR per Title 40 CFR Part 1506.3 to meet its responsibilities under NEPA in considering Kern River Gas Transmission Company's (KRGT) application for a right-of-way grant. Under Section 185(f) of the Mineral Leasing Act of 1920, the BLM has the authority to issue right-of-way grants for all affected Federal lands. This would be in accordance with Title 43 CFR Parts 2800 and 2880, subsequent 2800 and 2880 Manuals, and Handbook 2801-1. For the Kern River 2003 Expansion Project, the BLM would consider the issuance of a new or amended right-of-way grant and associated temporary use permits that would apply to all Federal lands, including the Dixie and Humboldt-Toiyabe National Forests. The BLM would consider conformance with land use plans and impacts on resources and programs to determine whether to issue a new or amended right-of-way grant for the approximately 369.9 miles of pipeline and ancillary facilities that cross Federal lands managed by the BLM, the FS, Native Americans, and various branches of the military. The concurrence or non-concurrence of the affected land management agencies would be considered in the BLM's decision.

The vertical line in the margin identifies text that has been modified in this final EIS/EIR and differs from the corresponding text in the draft EIS/EIR.

PROPOSED ACTION

KRGT proposes to construct and operate facilities to expand the existing KRGT interstate pipeline system from southwestern Wyoming to southern California. Facilities for this system would be constructed and operated under Sections 7(b) and 7(c) of the Natural Gas Act and Title 18 CFR Part 157. The expansion would have the capacity to provide an additional 885,626 dekatherms per day (Dth/d) of natural gas to customers in Utah, Nevada, and California.

The Kern River 2003 Expansion Project would involve the construction and operation of about 717.5 miles of pipeline, 163,700 horsepower (hp) of compression at three new and six existing compressor stations, modifications to five existing meter stations, and appurtenant facilities. Specifically, KRGT proposes to construct and operate the following facilities:

- 634.5 miles of 36-inch-diameter pipeline in 11 loops [1/] adjacent to KRGT's existing pipeline in Wyoming (Lincoln and Uinta Counties), Utah (Summit, Morgan, Salt Lake, Utah, Juab, Millard, Beaver, Iron, and Washington Counties), Nevada (Lincoln and Clark Counties), and California (San Bernardino County);
- 82.2 miles of 42-inch-diameter pipeline in one loop adjacent to the portion of KRGT's existing pipeline that it jointly owns with Mojave Pipeline Company (Mojave) in California (San Bernardino and Kern Counties) [2/];
- 0.8 mile of 12-inch-diameter pipeline lateral [3/] in Uinta County, Wyoming;
- three new compressor stations, one each in Wyoming (Uinta County), Utah (Salt Lake County), and Nevada (Clark County) for a total of 60,000 hp of compression;
- modifications to six existing compressor stations, one in Wyoming (Lincoln County), three in Utah (Utah, Millard, and Washington Counties), one in Nevada (Clark County), and one in California (San Bernardino County) for a total of 103,700 hp of new compression;
- modifications to one existing meter station in Wyoming (Lincoln County) and four existing meter stations in California (two each in San Bernardino and Kern Counties);
- 24 pig [4/] launcher/receiver facilities, 21 within the fencelines of or adjacent to other aboveground facilities, and 3 located independently along the proposed pipeline route; and
- 55 mainline valves (MLVs), 54 collocated with existing MLV sites and 1 located independently along the Salt Lake Loop.

PUBLIC INVOLVEMENT AND AREAS OF CONCERN

The scoping process for the Kern River 2003 Expansion Project began on June 25-29, 2001. During that week, the FERC, the CSLC, and the BLM staffs met with agency representatives along the proposed pipeline route to discuss the project and allow them the opportunity to express issues and concerns that should be addressed in the EIS/EIR.

On July 6, 2001, the CSLC issued a *Notice of Preparation of a Draft EIR and Notice of Public Scoping Meeting* (NOP). The NOP briefly described the project, provided a preliminary list of environmental issues, invited written comments from the public on the scope and content of the environmental information and analysis that should be included in the EIR, and listed the date and location of a public scoping meeting that would also be used as the NEPA scoping meeting for the California portion of the proposed project. The NOP was sent to 1,465 interested parties, including Federal, state, and local

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1/ A loop is a segment of pipeline that is usually installed adjacent to an existing pipeline and connected to it at both ends. The loop allows more gas to be moved through the system.

2/ KRGT and Mojave jointly own a 42-inch-diameter mainline pipeline, two laterals, and common delivery meters extending from Daggett, California into the Bakersfield, California area. The jointly owned facilities are referred to as the "Common" System. About 7/11ths of the Common System facilities are owned by KRGT and 4/11ths are owned by Mojave.

3/ A lateral is a segment of pipeline that is usually installed perpendicular to an existing pipeline to connect the existing pipeline to another facility.

4/ A pig is an internal tool used to clean and dry a pipeline and to inspect a pipeline for potential leaks or damage.

agencies; elected officials; environmental and public interest groups; Native American tribes; California landowners along KRGT's existing pipeline and its proposed and alternative routes; and local libraries and newspapers. The comment period on the CSLC's NOP closed on August 6, 2001.

On August 20, 2001, the FERC and the CSLC jointly issued a *Notice of Intent/Preparation to Prepare a Joint Environmental Impact Statement/Report for the Proposed Kern River 2003 Expansion Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings and Site Visit* (NOI/NOP). The NOI/NOP briefly described the project, provided a preliminary list of EIS/EIR issues, invited written comments from the public on KRGT's proposal, and listed the date and location of five public scoping meetings to be held in communities near the proposed pipeline route. The NOI/NOP was sent to 5,722 interested parties, including Federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; landowners along KRGT's existing pipeline (including the unlooped areas) and its proposed and alternative routes; local libraries and newspapers; and intervenors [5/] in this proceeding before the FERC. The comment period on the NOI/NOP closed on September 24, 2001.

In total, six public scoping meetings were held in the project area to provide an opportunity for the general public to learn more about the proposed project and participate in the environmental analysis by commenting verbally on the issues to be included in the EIS/EIR. These meetings were held in Barstow, California (August 2, 2001); Evanston, Wyoming (September 17, 2001); West Valley City, Utah (September 18, 2001); Fillmore, Utah (September 19, 2001); St. George, Utah (September 20, 2001); and Las Vegas, Nevada (September 21, 2001). In addition to being announced in the NOP and the NOI/NOP, announcements of these meetings were published in local newspapers. A transcript of each public scoping meeting and all written comments are part of the public record for the Kern River 2003 Expansion Project.

The environmental scoping comments received during the agency and public scoping periods raised issues related to the alternatives analysis, geologic hazards, water and wetland resources, vegetation, wildlife, special status species, restoration, weed control, cultural resources, land use, land requirements, construction schedule and procedures, operations and maintenance, soils, socioeconomics, air quality, cumulative impact, and pipeline safety.

The draft EIS/EIR was filed with the U.S. Environmental Protection Agency (EPA); submitted to the California State Clearinghouse; and mailed to 2,196 Federal, state, and local agencies, elected officials, Native American groups, newspapers, public libraries, intervenors to the FERC's proceeding, and other interested parties (*i.e.*, landowners, miscellaneous individuals, and environmental groups who provided scoping comments or asked to remain on the mailing list). A formal notice indicating that the draft EIS/EIR was available for review and comment was published in the Federal Register and posted in the appropriate County Clerks' offices in California. The public was given 45 days to review and comment on the draft EIS/EIR both in the form of written comments and at public meetings held in communities along the pipeline route.

Five public meetings were held to receive comments on the draft EIS/EIR. These meetings were conducted in Barstow, California (April 1, 2002); Las Vegas, Nevada (April 2, 2002); Cedar City, Utah (April 3, 2002); Salt Lake City, Utah (April 4, 2002); and Evanston, Wyoming (April 5, 2002). These meetings were announced in the draft EIS/EIR, in the notice indicating that the draft EIS/EIR was available, and in local newspapers. Each meeting was recorded and the transcripts are part of the public record for the Kern River 2003 Expansion Project.

[5/] Intervenors are official parties to the proceeding and have the right to receive copies of case-related Commission documents and filings by other intervenors. Likewise, each intervenor must provide 14 copies of its filings to the Secretary of the Commission and must send a copy of its filings to all other intervenors. Only intervenors have the right to seek rehearing of the Commission's decision.

The comment period for receiving written comments on the draft EIS/EIR closed on April 15, 2002. Written comments were received from 8 Federal agencies, 12 state agencies, 5 local agencies, 9 companies or organizations, 2 groups or individuals representing Native American concerns, 4 other individuals, and the project applicant. The written comments and our responses to them are included as section 6.0 of this final EIS/EIR.

ENVIRONMENTAL ISSUES

The environmental issues associated with construction and operation of the Kern River 2003 Expansion Project are analyzed in this EIS/EIR using information provided by KRGT and further developed from data requests; field investigations; scoping; literature research; alternatives analysis; contacts with Federal, Tribal, state, and local agencies; and input from public groups and organizations. The Agency Staffs' analysis indicates that the project would result in certain adverse environmental impacts.

KRGT has prepared specific plans that include measures to mitigate potential impacts. These plans include:

- Blasting Plan;
- Upland Erosion Control, Revegetation, and Maintenance Plan (UECRM Plan);
- Wetland and Waterbody Construction and Mitigation Procedures (WWCM Procedures);
- Paleontological Resource Mitigation Plan (PRM Plan);
- Noxious Weed Plan;
- Site-specific Reclamation Plans;
- Spill Plan;
- Groundwater Monitoring Plan;
- Drilling Mud Release Contingency Plan; and
- Wildfire Protection Plan

As part of the environmental analysis, specific mitigation measures were also identified that are feasible and that, when implemented, would reduce potential adverse impacts of project construction and operation to a level of insignificance. A table listing the anticipated impacts of the project and measures that would be implemented to mitigate those impacts is included in section 5.0. The environmental effects of constructing and operating the project as proposed are summarized below.

Geology

The Kern River 2003 Expansion Project would cross a variety of physiographic and geologic terrains that would require a wide range of construction techniques. Construction and operation of the proposed facilities would not materially alter the geologic conditions of the project area. Effects from construction could include disturbances to the natural topography along the right-of-way and at aboveground facilities due to trenching and grading activities. Over most of the project area, natural topographic slope and contours would be temporarily altered by the small-scale grading of the construction right-of-way that is necessary to provide a level and safe work surface for equipment. After completion of construction, KRGT would restore topographic contours and drainage conditions as closely as feasible to their preconstruction condition. Where hard bedrock is encountered, blasting would be required to complete the excavation. All blasting-related operations would comply with Federal, state, and local regulations and permit conditions, and protective considerations would be given to nearby structures, utilities, and/or water wells. The Agency Staffs have recommended that KRGT submit contractor-proposed site-specific blasting plans and documentation that the blasting operations would be supervised by personnel licensed to perform such activities in the applicable jurisdiction. The implementation of the measures in KRGT's Blasting Plan and

the additional recommendation of the Agency Staffs would reduce the potential impacts associated with blasting to less than significant levels.

No known active mineral areas are crossed by KRGT's proposed route; however, a total of 16 mineral resource areas (*e.g.,* oil and gas wells, sand, gravel, raw materials, aggregate) have been identified within 300 feet of the proposed route. In general, potential significant effects include diminished mineral land value, loss of mineral land access, and loss of revenues generated by future mineral production. However, analysis indicates that nearly all of KRGT's pipeline route is adjacent to existing pipelines or other utilities that have already precluded further mineral development. In the event any conflicts between the pipeline and other mineral resource operations are identified, KRGT would compensate the owners of these resources for potential losses. As a result, impacts of the project on mineral resources would be less than significant.

Geologic hazards such as seismicity (*i.e.,* active faults, earthquakes/ground shaking, and soil liquefaction), slope stability (landslides), subsidence, flash floods and debris flows, volcanism, and avalanches could threaten the integrity of the pipeline facilities. Areas where potential hazards exist along the pipeline route have been identified and, where necessary, construction design treatment has been proposed. KRGT would construct and test project facilities to meet Federal standards outlined in the U.S. Department of Transportation's (DOT) regulations in Title 49 CFR Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*. To address specific concerns expressed by the Agency Staffs regarding potential geologic hazards, KRGT conducted geohazard evaluations based on current engineering guidelines for design along portions of the pipeline route in California and at the proposed Salt Lake Compressor Station site. The risk of damage resulting from significant seismic hazards would be lessened by KRGT's compliance with DOT regulations, use of other recognized standard pipeline industry methods, and commitment to design the pipeline and aboveground structures to withstand the predicted levels of ground shaking and ground deformation.

KRGT has also committed to design all project facilities to meet or exceed the latest edition of the Uniform Building Code (UBC) or International Building Code (IBC) and recognized industry standards under the direction of certified professional engineers. However, the UBC, IBC, and DOT (Title 49 CFR Part 192) requirements do not necessarily address all seismic design criteria required in California, particularly at fault crossings and liquefaction potential zones. In California, the CSLC requires the incorporation of current seismological engineering standards such as the *Guidelines for the Design of Buried Steel Pipe* (American Lifeline Alliance), *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems* (American Society of Civil Engineers), and other recognized industry standards for seismic-resistant design at all fault crossings and liquefaction potential zones. The CSLC also requires all engineered structures, including pipeline alignment sheets, buildings and other structures, profile drawings wherever necessary, and other appurtenances and associated facilities in California, to be designed, signed, and sealed by California-registered professionals certified to perform such activities in the jurisdiction where the facilities would be located. KRGT would use a certified Engineering Geologist to observe the construction excavation in the vicinity of the fault crossings in California to verify that the design assumptions are valid and the treatments are centered in the correct locations.

In addition, the Agency Staffs have recommended that, following an earthquake within certain parameters, KRGT operations personnel inspect all parts of the pipeline alignment that fall within the specified distance of the earthquake epicenter for evidence of permanent ground deformation (*e.g.,* cracks or displacements). If surface fault rupture is reported or observed, the pipeline alignment within at least 1,000 feet of the rupture would be inspected. KRGT would submit a report of its findings to the FERC and the CSLC. KRGT's proposed design and operational mitigation measures, in conjunction with the Agency

Staffs' recommended mitigation measure, would be adequate to minimize the potential impacts associated with fault crossings to less than significant levels.

The proposed Salt Lake Compressor Station site is located immediately north of the Granger Fault, a trace of the West Valley Fault Zone. Shallow trenching was conducted at the site as part of a surface fault rupture hazard evaluation. No evidence of faulting or fault-related deformation was observed in any of the sediments exposed in the trench excavation. Nonetheless, excavations during construction of the compressor station would be inspected for evidence of fault traces. If such evidence is discovered, a qualified engineering geologist would evaluate the potential impact on the proposed structures and develop means to mitigate the risk posed by fault rupture. Final design approval and construction would comply with the Salt Lake County Natural Hazards Ordinance, Chapter 19.75 of the Counties Zoning Ordinance, local building permits, and current building codes for seismic design. By complying with these ordinances and codes, potential impacts would be less than significant.

The potential for slope instability would be mitigated by KRGT's implementation of the temporary and permanent erosion control and restoration practices in its UECRM Plan and WWCM Procedures, and site-specific recommendations from Sergent, Hauskins & Beckwith. In addition, to prevent or minimize potential hazards associated with construction-induced slope instability within California, KRGT would retain a California-certified Engineering Geologist to oversee construction activities (*e.g.,* excavation) in areas of potentially unstable ground as well as oversee attempts to locate fault traces of Quaternary faults during excavation. Although the implementation of KRGT's proposed mitigation would not eliminate the possibility of landslides at every landslide-prone area that would be crossed by the pipeline, slope instability has not been associated with the existing facilities and the landslide-prone areas are typically remote. Consequently, a failure of the pipeline would not present a significant threat to public safety. Therefore, the potential impact of slope instability hazards on the pipeline facilities would be less than significant.

Based on the documented subsidence rates in the western Mojave Desert, the amount of subsidence likely to occur along the pipeline route during a 50-year design life probably is less than 5 feet. However, groundwater pumping rates may increase in response to future development, which could increase the potential for subsidence. KRGT would check for evidence of subsidence during routine pipeline operations overflights and other maintenance activities along the entire pipeline route. Repairs would be made as necessary. In addition, the Agency Staffs have recommended that KRGT reassess potential subsidence hazards in California after every 15 years of operation. If KRGT identifies any regions of subsidence that approach 5 feet, the pipeline condition and performance would be evaluated, and appropriate action taken based on the findings. Implementation of KRGT's proposed operational treatment and the additional recommendation of the Agency Staffs would reduce the potential impacts on the pipeline associated with subsidence due to excessive groundwater withdrawal to less than significant levels.

The proposed pipeline would cross various formations that are known or have the potential to contain significant paleontological resources where construction activities could directly and/or indirectly damage, disturb, or result in the loss of these resources. To mitigate potential impacts on paleontological resources, KRGT has developed a PRM Plan. In accordance with the PRM Plan, KRGT would conduct preconstruction surveys in areas where the proposed pipeline alignment deviates from the existing right-of-way in areas of high paleontological sensitivity. During construction, KRGT would monitor sedimentary units where previous field surveys identified scientifically significant fossils along the pipeline route and all areas that have a high paleontological sensitivity where trenching would be conducted outside of the previously disturbed construction rights-of-way. To assist the CSLC's third-party monitors with implementation of the mitigation monitoring program, KRGT would provide copies of all paleontological permits to the CSLC before construction in California. Upon completion of excavation and grading activities, a final monitoring report would be prepared by KRGT that would include a summary of field observations, recoveries, and an

itemization of all specimens collected. Within 90 days of the completion of construction of the pipeline and associated facilities, KRGT would provide copies of the final paleontological resources monitoring report to the FERC, the CSLC (for lands in California), and the BLM and other appropriate Federal land management agencies. Implementation of the measures in KRGT's PRM Plan and these additional measures would reduce the potential impact of the project on paleontological resources to less than significant levels.

Soils

Construction activities can result in a number of different soil or soil-related impacts including increased erosion, compaction, soil mixing, reduced fertility, poor revegetation, and the introduction of noxious weeds. KRGT would minimize the potential for these impacts by implementing the mitigation measures contained in its UECRM Plan and by adhering to its site-specific Reclamation Plans and Noxious Weed Plan. KRGT's UECRM Plan is based on the mitigation measures contained in the FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (FERC Plan) and would provide a level of environmental protection that is equivalent to the measures contained in the FERC's Plan. Additionally, to protect topsoil from wind erosion, KRGT would apply water and/or a water-based non-toxic, organic tackifier to the topsoil piles in all areas identified as highly susceptible to wind erosion and in other areas where soil conditions warrant. Soils could be exposed to potential contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment. KRGT would mitigate this potential impact by implementing its Spill Plan. The implementation of these plans and KRGT's proposed measures to protect topsoil piles from wind erosion would reduce impacts on soil resources to less than significant levels.

Construction of the Coyote Creek, Salt Lake, and Dry Lake Compressor Stations and associated powerlines would result in the permanent loss of about 30.9, 32.0, and 22.9 acres of land, respectively. No prime farmland soils would be affected by these facilities. Mitigation measures implemented in these locations would be limited to erosion control measures as described in KRGT's UECRM Plan and its site-specific Reclamation Plans. Soil impacts for aboveground facilities, although not fully mitigated, would not be considered significant due to the relatively small amount of soil affected.

Water Resources

For the majority of the project, groundwater levels are generally well below the land surface that would be affected by construction activities. Shallow aquifers underlying a portion of the construction area could experience minor impact from changes in overland flow and recharge caused by clearing and grading of the construction right-of-way. Although activities associated with construction of the proposed pipeline and aboveground facilities could affect groundwater resources, most potential impacts would be avoided or minimized by the use of both standard and specialized construction techniques. KRGT has prepared a Spill Plan to address preventive and mitigative measures that would be used during construction to minimize the potential of a hazardous spill to contaminate groundwater resources.

A total of 247 water supply wells or springs have been identified as potentially occurring within 200 feet of the construction right-of-way. As many as 79 of these water supply wells or springs are in locations where blasting for pipeline placement may be necessary. To determine whether pipeline construction activities have affected groundwater quality or yield, KRGT would implement its Groundwater Monitoring Plan. If it is determined that blasting or other construction activities have diminished a water supply, KRGT would arrange for a temporary water supply through a local supplier and make the necessary repairs to the affected water well, or install another comparable well. KRGT would obtain the applicable state and local permits before repairing or replacing any water wells and for any temporary domestic water supplies. Specific mitigation measures would be coordinated with the landowner or land management agency in order to meet the landowner's specific needs.

Any isolated springs that sustain a riparian community and/or provide a wildlife benefit would be delineated using the current U.S. Army Corps of Engineers (COE) methodology. KRGT would conduct biological monitoring at isolated springs to determine any adverse impact on the riparian community or diminishment of its value to wildlife. Within 30 days of placing the project facilities in-service, KRGT would file a report with the FERC and the CSLC (in California) describing any complaints received from landowners about water quality or yield, the results of the biological monitoring at any isolated springs, and the remedial action taken to address concerns. KRGT's proposed mitigation would reduce potential impacts on water supply wells and springs to less than significant levels.

Seven potential sources of groundwater and/or soil contamination have been identified near the proposed pipeline facilities. Although it is possible contaminated soils and/or groundwater leaching from these seven sites could be encountered, this is unlikely based on the distance of the pipeline route from the sites and the depth of the underlying groundwater associated with the individual sites. However, if contaminated groundwater and/or sediments (based on evidence of land-filled debris, subsoil discoloration, or odor) are encountered along the pipeline route or at aboveground facility sites during construction, KRGT would implement mitigation measures to reduce the potential effects associated with contaminated groundwater to less than significant levels.

The Kern River 2003 Expansion Project would cross 32 perennial waterbodies. Of these, 7 would be in Wyoming, 24 would be in Utah, and 1 would be in Nevada. No perennial waterbodies would be crossed in California. Nine of these waterbodies are coldwater fisheries and three others are classified as game fish spawning areas. KRGT would minimize impacts on surface waters by implementing the waterbody construction and restoration measures contained in its WWCM Procedures. KRGT's WWCM Procedures are based on the mitigation measures contained in the FERC's Wetland and Waterbody Construction and Mitigation Procedures.

Impacts on sensitive waterbodies would be avoided or minimized by both standard and specialized construction methods. The Bear, East Branch Weber, and Weber Rivers and the associated wetland and riparian areas would be crossed using the horizontal directional drill crossing (HDD) method. The HDD method involves installation of the pipe under the riverbed and therefore avoids disturbance to the beds and banks of the rivers and adjacent wetlands. The primary impact that could occur as a result of an HDD crossing is the inadvertent release of drilling mud. KRGT's implementation of its Drilling Mud Release Contingency Plan would reduce the potential impact of an inadvertent release of drilling mud to a less than significant level. Impacts on the remaining sensitive waterbodies would be minimized by KRGT's use of the flume or dam and pump crossing technique and/or crossing during agency-specified time windows. KRGT would use the open-cut crossing technique to cross other non-sensitive perennial waterbodies.

The project would also cross approximately 312 intermittent waterbodies (including ephemeral streams, drains, and washes). KRGT would generally use typical cross-country construction methods to cross intermittent waterbodies that are not flowing at the time of construction. Impacts would be limited to temporary alteration of beds and banks, loss of wildlife habitat, and possibly increased sediment load during initial storm events following construction.

Yellow Creek has been identified by several agencies as particularly susceptible to scouring. In addition to Yellow Creek, 23 other locations along the pipeline route have the potential for scour that may require deeper than normal pipeline burial depth at the crossing. KRGT would implement measures to protect against scour and bank erosion at these locations. Implementation of KRGT's proposed measures would reduce the impacts related to streambed scour to less than significant levels.

Two waterbodies, the Muddy River and Bingham Creek, have been identified as containing potentially contaminated sediments. KRGT would minimize the potential for resuspension of sediments in the Muddy River by using the flume method and implementing its WWCM Procedures. In addition, KRGT would limit the period of time the sediments are exposed to resuspension and the period of in-stream disturbance for pipeline installation. KRGT would cross Bingham Creek using the bore method unless KRGT obtains documentation from the Utah Department of Environmental Quality (UDEQ) that the potential for contaminated sediments no longer exists at the crossing location.

Construction timing; the adoption of specialized construction techniques; and the implementation of KRGT's WWCM Procedures, Spill Plan, and Drilling Mud Release Contingency Plan would reduce impacts on waterbodies to less than significant levels.

Wetlands

The proposed pipeline would cross 72 individual wetlands, all of which are located in Wyoming or Utah. All of these wetlands are classified as palustrine emergent wetlands. No wetlands would be permanently filled or drained as a result of the project. Construction activities would result in a short-term disturbance of 57.6 acres of emergent wetland, of which 30.7 acres would be located within the proposed operational (permanent) right-of-way. Adherence to KRGT's WWCM Procedures and its compliance with conditions included in the COE Section 404 permit and state water quality certifications or waivers would adequately protect wetland resources crossed by the pipeline route and reduce impacts on wetlands to less than significant levels.

Vegetation

Construction activities would result in the disturbance of about 9,282.4 acres of vegetated land. The two most common vegetation types along the project corridor are Mojave creosote-bursage (3,158.2 acres) and sagebrush/sagebrush scrub (2,906.1 acres), which account for about two-thirds of the vegetation that would be cleared for construction. Although existing vegetation would be disturbed everywhere along the right-of-way, a large amount of this vegetation would be within the area that was disturbed during construction of KRGT's existing pipeline. Construction through agricultural areas would have a short-term impact on about 562.4 acres of land.

The removal of desert vegetation would have a long-term impact. The arid environment of this region is not conducive to plant growth and regeneration of vegetation following construction would be slow. Moreover, because of the dryness of these areas, regeneration by actively seeding or planting is typically ineffective. Natural regeneration of these areas would take several years. Depending on the availability of water, regeneration of creosote and woodland in the desert could take over 50 years. Although most of the vegetation types affected by construction would take considerably longer than 3 years to revegetate to a preconstruction condition, the project would only disturb small amounts (less than 1 percent) of the affected vegetation types growing within the region. This degree of impact on vegetation would not be substantial, and therefore, would be less than significant.

KRGT has developed three strategies to mitigate or minimize impacts on vegetation. The first strategy is avoidance. To reduce impacts on vegetation, KRGT designed its route to minimize areas of dense vegetation and sensitive species. The second strategy KRGT proposes is the permanent preservation of a significant acreage of desert vegetation as part of its efforts to compensate for impacts on desert tortoise habitat. The third strategy that KRGT would employ is the implementation of its site-specific Reclamation Plans.

KRGT has developed five separate site-specific Reclamation Plans, one for each of the four states crossed by the pipeline and one for the Dixie National Forest. These plans are based on the original reclamation plans that were prepared for the construction of KRGT's existing pipeline but include updated technical standards and incorporate modifications/improvements to address comments from the various land and resource management agencies about the adequacy of the previous plans. The Reclamation Plans describe site-specific reclamation treatments, seed mixes, seed sources, success criteria, remedial actions, and monitoring and reporting requirements for all areas crossed by the project, including desert habitat. These site-specific plans also address mitigation and restoration of sensitive habitat including, but not limited to, habitat for federally listed threatened or endangered species and vegetation communities of special concern or value. KRGT's proposal to implement an extensive topsoil segregation program would be an important mitigation element especially in desert habitats where vegetation is notably sensitive to disturbance and revegetation would be a slow process. Implementation of KRGT's UECRM Plan and its site-specific Reclamation Plans would reduce impacts on most vegetation communities to less than significant levels. However, the treatments proposed in the site-specific Reclamation Plans may not eliminate long-term impacts on special concern vegetation communities (*i.e.,* yucca, cactus, and agave). As a result, project-related impacts on these species could remain significant.

KRGT would implement measures to control noxious weeds, including the use of cleaned weed-free equipment, the use of compressed air to remove seeds and other propagules from equipment before transport from a site, and the use of weed-free straw/hay bales to control erosion. Two key elements of KRGT's Noxious Weed Plan are KRGT's proposals to treat existing weed infestations before construction, and to treat both the new and the existing rights-of-way for noxious weeds where they are adjacent to one another. The Agency Staffs have recommended that KRGT file a revised Noxious Weed Plan that includes provisions for KRGT to update its list of known noxious weed infestations with the data acquired during its noxious weed surveys conducted in 2002; treat all weeds deemed noxious by Federal, state, and/or county weed control agencies to the extent that they do not present a significant hindrance to reclamation efforts; and schedule its weed control efforts to occur before seed maturation/development. The implementation of KRGT's revised Noxious Weed Plan before, during, and after construction, and the treatment of the adjacent existing right-of-way, would reduce the impacts associated with the introduction of new weed species and the expansion of existing weed species to less than significant levels.

Wildlife and Aquatic Resources

The primary impact of the project on wildlife habitat would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. The removal of desert vegetation would have a localized, but long-term impact on wildlife. The reestablishment of woody desert plants may take decades, and in some areas may take over 50 years. The relatively slow regeneration of vegetation within the temporary right-of-way would result in the long-term loss of habitat for those species that utilize these communities. KRGT's UECRM Plan and site-specific Reclamation Plans include measures to avoid or minimize impacts on wildlife habitats as well as facilitate the recovery of native vegetation communities. KRGT has also developed a Wildfire Protection Plan to minimize the potential impacts associated with project-related fires. KRGT's proposed conservation measures to minimize or avoid impacts on special status species would also serve to avoid, minimize, or compensate for impacts on general wildlife and their habitats. Table ES-1 (page ES-11) summarizes the wildlife and special status species timing restrictions associated with the proposed project. In general, KRGT's proposed construction schedule adheres to agency-recommended timing restrictions and avoids the times critical to wildlife. Therefore, project impacts are not expected to substantially affect local wildlife population movements along the project corridor, and implementation of KRGT's mitigation measures would reduce potential impacts to less than significant levels.

TABLE ES-1

Wildlife and Special Status Species Timing Restrictions Associated with the Kern River 2003 Expansion Project

State	Species/Habitat	Timing Restriction	Primary Agency	Comments
WYOMING	Big game critical winter ranges	November 15 to April 30	Bureau of Land Management (BLM)	Construction would be completed outside the restricted window.
	Burrowing owl	April 1 to July 31	BLM, U.S. Fish and Wildlife Service (FWS), and Wyoming Game and Fish Department (WGFD)	None found. No mitigation necessary.
	Mountain plover	April 10 to July 10	FWS	Construction after August 1 not likely to adversely affect.
	Raptors	February 1 to August 31 - No surface disturbance activity less than 0.5 mile from an active raptor nest or within 1 mile of peregrine falcon or bald eagle nests	BLM and FWS	Based on *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (FWS, 2002). Dates can be modified based on temporal and spatial survey data.
	Sage grouse	February 1 to May 15 - maintain 0.25-mile buffer around known leks April 1 to July 1 - maintain 2-mile buffer around known leks	BLM and WGFD	Construction after August 1 would avoid critical breeding and brood rearing stages.
UTAH	Bonneville cutthroat trout	April 1 to July 30 - with the exceptions of the crossings at mileposts 66.8, 69.6, and 71.1	FWS	Construction after August 1 not likely to adversely affect.
	Burrowing owl	April 1 to July 31 - avoid active nest sites on the right-of-way	BLM, FWS, and Utah Division of Wildlife Resources (UDWR)	Owls likely to be fledged before construction.
	Deer fawning areas	May 16 to July 1	U.S. Department of Agriculture, Forest Service.	Only located in the Dixie National Forest. Construction would be completed outside the restricted window.
	Desert tortoise	Recommend construction in inactive season after November 1	FWS	Construction in Utah would be completed during the inactive season.
	Raptors	February 1 to August 31	BLM, FWS, and UDWR	Based on *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (FWS, 2002). Dates can be modified based on temporal and spatial survey data.
	Sage grouse	April 1 to July 1 - maintain 2-mile buffer around known leks	BLM and UDWR	Construction after August 1 not likely to adversely affect.
	Utah prairie dog	Before July 1 - construction must have substantially started before October 1	BLM, FWS, and UDWR	Construction would be completed or substantially started before the restricted window.

TABLE ES-1 (cont'd)

Wildlife and Special Status Species Timing Restrictions Associated with the Kern River 2003 Expansion Project

State	Species/Habitat	Timing Restriction	Primary Agency	Comments
NEVADA	Burrowing owl	February 1 to August 1 - avoid nesting pairs	BLM	Owls would be passively relocated before the breeding season.
	Desert tortoise	Recommend construction in inactive season after November 1	FWS	The majority of construction would occur within the recommended time frame.
	Muddy River	April 1 to July 1	FWS, Nevada Division of Wildlife	The timing restriction is for the Virgin River chub. Construction would be completed outside the restricted window.
	Raptors	March 1 to August 31 - avoid active nests	BLM	Based on *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (FWS, 2002). Dates can be modified based on temporal and spatial survey data.
CALIFORNIA	Burrowing owl	February 1 to August 1 - avoid nesting pairs	California Department of Fish and Game (CDFG)	Owls would be passively relocated before breeding season. Based on CDFG staff report on burrowing owl mitigation (September 1995).
	Desert tortoise	Recommend construction in inactive season after November 1	CDFG and FWS	The majority of construction would occur within the recommended time frame.
	Raptors	March 1 to August 31 - avoid active nests	CDFG and BLM	Based on *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (FWS, 2002). Dates can be modified based on temporal and spatial survey data.

Pipeline construction could directly affect aquatic resources present in the waterbodies crossed by the project. An inadvertent chemical or fuel spill in or near a waterbody could release contaminants, which could affect fish by altering behavior, changing physiological processes, or changing food sources by contaminating the water resources. Adherence to agency-recommended timing restrictions, and implementation of KRGT's WWCM Procedures and Spill Plan would reduce the potential for adverse impacts on aquatic resources to a less than significant level.

Special Status Species

The U.S. Fish and Wildlife Service (FWS) identified 24 federally listed or proposed endangered or threatened species, or candidate species, that could potentially occur in the general vicinity of the proposed project. Based on the analysis of information regarding these species, it has been determined that, with implementation of KRGT's proposed minimization and conservation measures, its site-specific Reclamation Plans, and the Agency Staffs' additional recommendations, the project would have no effect on 15 species, would not likely adversely affect 6 species, and would not likely jeopardize 1 species. The proposed project is likely to adversely affect the desert tortoise and its critical habitat and the Utah prairie dog. However, the proposed action as described would not make any irreversible or irretrievable commitments of resources that would foreclose the formulation or implementation of any reasonable or prudent alternatives needed to avoid jeopardizing the continued existence of these species. The FERC staff has requested that the FWS issue a Biological Opinion (BO) regarding whether the project would jeopardize the continued existence of the desert tortoise or Utah prairie dog. The draft EIS/EIR served as the Biological Assessment that is necessary for the FWS to develop a BO and that is required to comply with Section 7 of the Endangered Species Act. Copies of the draft EIS/EIR were sent to the FWS along with a letter requesting formal consultation. Although the FWS commented on the draft EIS/EIR, the BO has not yet been received. KRGT would be prohibited from beginning construction until the BO is received.

Additionally, 117 other special status species were identified as potentially occurring in the general vicinity of the project. Based on the results of habitat evaluations and species-specific surveys, 55 special status species potentially occur in the area that would be impacted by construction of the project. Several species have timing restrictions associated with construction (see table ES-1 (page ES-11)). KRGT's implementation of general and species-specific conservation measures and the additional agency recommendations would allow the project to avoid, minimize, or compensate for project impacts on these species. Therefore, impacts would be reduced to less than significant levels.

Land Use, Transportation, Recreation and Special Interest Areas, and Visual Resources

Approximately 99 percent of the pipeline route would be located in or adjacent to existing rights-of-way, including about 88 percent that would be installed 25 feet or less from KRGT's existing pipeline. Construction of the pipeline facilities would temporarily affect about 10,497.4 acres of land. Of this land, about 76 percent would be rangeland, 9 percent would be developed, 9 percent would be agricultural, 5 percent would be forested, 1 percent would be wetland, and less than 1 percent would be open water. Most of this land would be allowed to return to previous use after construction is completed. Construction of the aboveground facilities would affect 94.3 acres, and operation would permanently affect about 89.8 acres of rangeland and agricultural land. The permanent conversion of rangeland and agricultural land for these facilities would not cause a long-term reduction of more than 1 percent of rangeland or agricultural land in the respective county in which they are located. As a result, impacts associated with the conversion of rangeland and agricultural land for the aboveground facilities would be less than significant.

There are 26 residences located within 50 feet of the construction work area for the Kern River 2003 Expansion Project. Temporary construction impact on residential areas could include inconvenience caused by noise and dust generated by construction equipment, personnel, and trenching of roads or driveways;

ground disturbance of lawns; removal of trees, landscaped shrubs, or other vegetative screening between residences and/or adjacent rights-of-way; potential damage to existing septic systems or wells; and removal of aboveground structures, such as sheds or trailers, from within the right-of-way.

KRGT has prepared site-specific residential construction mitigation plans to minimize disruption and maintain access to the 26 residences. In accordance with these plans, KRGT has been able to maintain a 25-foot separation between 24 of the 26 residences and the construction work area. KRGT's construction work area would be within 25 feet of the remaining two residences. These residences abut an existing electric transmission line utility corridor and the proposed pipeline would be collocated with the electric transmission line. KRGT's construction activities would be confined to the existing utility corridor in the vicinity of the residences. Implementation of KRGT's site-specific residential construction mitigation plans would minimize impacts on residents to less than significant levels.

The proposed pipeline would cross several linear transportation and utility rights-of-way including roads, railroad tracks, and powerlines. Impact on these features would be localized and short term. No new access roads would be created during construction of the project. KRGT would utilize the same access roads that were used during installation of the existing KRGT pipeline and KRGT/Mojave Common System facilities or other roads constructed by public and private entities since completion of the pipeline system. No significant impacts would be expected during operation of the project because there would be only minimal traffic associated with operation and maintenance of the project and the traffic would coincide with the current levels of traffic associated with operation and maintenance of the existing KRGT pipeline and KRGT/Mojave Common System facilities. The project would not result in a decrease in the level of service of a roadway.

The pipeline route would cross or be adjacent to several special management areas administered by the BLM, the FS, and various branches of the military. In addition to KRGT's site-specific Reclamation Plans, additional site-specific mitigation measures required by these agencies would be included as stipulations of KRGT's Construction, Operation, and Maintenance Plan (COM Plan), which would be attached to the new or amended right-of-way grant issued by the BLM. Impacts on these areas would be less than significant after implementation of KRGT's proposed mitigation measures. The route would also cross areas used for general recreation such as off-highway vehicle (OHV) use. KRGT would discourage OHV use on its new and existing right-of-way due to safety considerations and the need to maintain erosion control, promote continued restoration and revegetation success, and protect biological and cultural resources unless the OHV use is specifically designated or authorized by the landowner or land management agency. The implementation of KRGT's proposed mitigation measures would reduce impacts from unauthorized OHV use of the right-of-way to less than significant levels. Other recreational activities occurring along the pipeline route, including camping, could be impacted by construction-induced effects such as traffic, noise, and dust. These effects may affect the quality of some users' recreational experiences, but would be temporary in nature and less than significant.

Visual impacts of the project would be greatest where the pipeline would be located on new right-of-way that is not adjacent to existing rights-of-way and at the proposed aboveground facility sites. Because the new pipeline loops would typically overlap existing rights-of-way, the amount of clearing needed for construction workspace and permanent right-of-way would be minimized, thereby reducing visual impact. In addition, KRGT has proposed several general and site-specific measures to further reduce impacts along the pipeline right-of-way and in visually sensitive areas. Implementation of these measures would reduce visual impacts associated with the pipeline facilities to less than significant levels.

Construction and operation of the new aboveground facilities and associated powerlines would have a permanent impact on visual resources. However, while the new Coyote Creek and Dry Lake Compressor

Stations and powerlines would be visibly apparent, the rural nature of these sites limits the number of key observation points and viewing opportunities available, thereby reducing visual impact to less than significant levels. The proposed Salt Lake Compressor Station facility would be visible but would be seen in the context of several nearby industrial and commercial facilities, thereby reducing visual impact to less than significant levels. Further, the powerline to the station would be buried from the last existing utility company distribution pole to the compressor station property. The majority of the facilities at the pig launcher/receiver and mainline valve sites would be located below ground, which would limit the visibility of the facilities and minimize effects on the surrounding visual landscape. All aboveground surfaces and structures would be painted in accordance with the color requirements of the land management agencies to be compatible with the landscape.

Socioeconomics

Construction of the project would result in a temporary increase in population, traffic patterns, and the demand on temporary housing and public services. Due to the temporary and limited nature of these impacts they are not considered significant. Construction and operation of the project would have a beneficial impact on local tax revenue and economies. The aboveground facilities and 12 permanent staff would permanently contribute to each states' property and sales tax revenues.

Cultural Resources

The FERC, the BLM, and other Federal land management agencies are responsible for complying with Section 106 of the National Historic Preservation Act (NHPA), which requires Federal agencies to take into account the effects of their undertakings on historic properties (*i.e.*, properties listed or eligible for listing on the National Register of Historic Places (NRHP)) and affords the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. The procedures for complying with Section 106 are outlined in the ACHP's regulations (Title 36 CFR Part 800). The effects of the project on properties of traditional religious and cultural importance to Native Americans must also be considered in accordance with Section 101 (d)(6) of the NHPA and the American Indian Religious Freedom Act. In addition to these responsibilities, Federal land management agencies must consider Native American religious and cultural concerns for the portion of the project crossing Federal lands in accordance with the Archaeological Resource Protection Act, the Native American Graves Protection and Repatriation Act, and Sacred Sites Executive Order 13007.

As the lead Federal agency, the FERC initiated a Programmatic Agreement (PA) for the Kern River 2003 Expansion Project to establish procedures for compliance with Section 106 of the NHPA. The consulting parties are the BLM; FS, Dixie National Forest; the U.S. Department of the Army, Fort Irwin National Training Center; the Wyoming, Utah, Nevada, and California State Historic Preservation Offices (SHPOs); the Moapa Band of Paiute Indian Tribe (Moapa Band); KRGT; and the ACHP. The BLM California State Office represents the BLM State Offices in Wyoming, Utah, and Nevada. The PA was executed on January 17, 2002 (the Moapa Band did not sign the PA).

The CSLC is responsible for complying with all provisions of the CEQA covering cultural resources, including CEQA Sections 21083.2 and 21084.1, and Section 15064.5 of the Guidelines for Implementing CEQA. Cultural resources include prehistoric and historic-period archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events or sites of traditional/cultural importance. CEQA Guidelines Section 15064.5 indicates a project may have a significant environmental effect if it causes "substantial adverse change" in the significance of an historic resource as defined in Section 15064.5(a)(1) through (a)(4). Under the CEQA, the CSLC is also required to take into account the effect on properties eligible for listing on the California Register of Historical

Resources (CRHR) or that meet the definition of a unique archaeological resource in CEQA Section 21083.2, as well as cultural resources that may not fall into these two categories.

Wyoming - Cultural resources surveys in Wyoming identified 14 new cultural resources and 12 new isolated finds along the proposed route. Of these, 13 cultural resources and all 12 isolated finds were recommended not eligible for listing on the NRHP. The remaining site, a prehistoric camp site, has been recommended as eligible for listing on the NRHP, but would be avoided during construction. No new cultural resources were identified along the Anschutz Lateral route.

Sixty-one previously recorded cultural resources were revisited. Thirty-four of these were recommended as not eligible for listing on the NRHP or were not relocated during survey. The remaining 27 cultural resources were recommended as eligible for listing on the NRHP. However, the portions of 16 of the eligible sites within the area of potential effects (APE) are non-contributing to their NRHP eligibility, and no further work is required. Four of the eligible sites would be avoided or are outside the APE. One resource is a historic-period linear site, with one segment within the APE and seven segments that are non-contributing elements to NRHP eligibility. The remaining six sites within the APE include four historic-period sites (one ditch, one wooden water line, one railroad, and the Mormon Pioneer Trail), one prehistoric artifact scatter with associated features, and one multi-component site consisting of a prehistoric campsite and historic-period debris.

Utah - Inventory of the proposed route, access roads, and yards in Utah resulted in the identification of 63 new cultural resources and 89 new isolated finds. The 89 isolates and 51 of the cultural resources were recommended as not eligible for listing on the NRHP. Five historic-period sites and seven prehistoric sites were recommended as eligible for listing on the NRHP.

One hundred ninety-seven cultural resources located within the work area were revisited. Sixty-two of these were recommended as not eligible. Two cultural resources are listed on the NRHP, including a prehistoric lithic procurement site and the historic-period Mountain Meadows massacre site. The remaining 133 cultural resources were recommended as eligible. Four of the cultural resources that were previously determined to be eligible (one prehistoric and three historic-period sites) were not reevaluated due to denied access by the landowner. For the purposes of this document, these four are considered to retain their eligibility status. Of the remaining 129 cultural resources, 26 are historic-period sites, primarily railroads, canals, and homesteads; 95 are prehistoric sites, representing locations of prehistoric occupation or use activities; and 8 include both historic and prehistoric components.

Nevada - Twenty-three new cultural resources and 22 isolated finds were identified in Nevada. Two of these cultural resources, an historic-period water tank and a railroad, are recommended as eligible for listing on the NRHP. The remaining 21 cultural resources and the 22 isolated finds were recommended as not eligible for listing on the NRHP.

Twenty-four previously recorded cultural resources that are within or near the survey corridor, access roads, or yards were revisited. One previously recorded cultural resource, the Old Spanish Trail/Mormon Road, is listed on the NRHP, and one additional cultural resource, a prehistoric obsidian source, was recommended as eligible for listing. The remaining 22 sites were either recommended as not eligible or have been destroyed by previous activities.

California - Surveys in California located six new cultural resources and one isolated find. Two historic-period sites, an airport and a railroad industrial complex, were recommended as eligible for listing on the NRHP. The remaining four cultural resources and one isolated find were recommended as not eligible for listing on the NRHP.

Seventy-six previously recorded cultural resources located within the survey corridor and yards were revisited. Of these, 52 were recommended as not eligible for listing, were not relocated during survey, or had been destroyed. One site, a prehistoric rock cairn (Silver Lake Rock Cairn Site), is listed on the NRHP, and the remaining 23 are eligible for listing. Of the 23 cultural resources recommended as eligible, 5 are historic-period sites including 3 railroads, 1 road, and 1 transmission line; 16 are prehistoric sites representing locations of prehistoric occupation or use activities; and the remaining 2 sites include both prehistoric and historic components.

Cultural resources in California that are eligible for listing on the NRHP are also eligible for listing on the CRHR. In addition, sites that are not eligible for listing on the NRHP may be eligible for listing on the CRHR. The CSLC has determined that one site in California that was recommended as not eligible for the NRHP is eligible for the CRHR for CEQA purposes. The remaining sites in California that were recommended as not eligible for the NRHP are also recommended as not eligible for the CRHR. Archaeological resources in California that are not eligible for the CRHR may be classified as "unique archaeological resources" if they meet specified criteria. No sites met the specified criteria. Four sites in California are wholly or partially on state land. For purposes of the CEQA, three sites (Route 66; the Atchison, Topeka and Santa Fe railroad; and a transmission line) may qualify as historical resources and "structures" and one site (rock features) may qualify as a non-unique archaeological resource. For any historical resources located on state land, the CSLC must consult with the SHPO as specified under Section 15064.5(b)(5). The CSLC has begun consultation with the SHPO for these sites.

The BLM California State Office has been designated the lead agency for conducting and overseeing Native American consultations. Using the summary of ethnographic studies report prepared for the project, the BLM State Offices in Wyoming, Utah, Nevada, and California prepared a list of Native American groups that should be contacted regarding the proposed project to request information on potential cultural resources concerns. On July 20, 2001, the BLM California State Office sent initial consultation letters to the identified Native American groups. The initial consultation letter included a map of the project area and a copy of the ethnographic studies report. KRGT is also assisting with consultations, as necessary, with the appropriate federally recognized Indian tribes and interested Native American groups to identify Native American religious sites, traditional cultural properties, and other cultural resources issues of concern.

KRGT has completed cultural resources survey in California and Nevada. Inventories of existing two-track access roads not requiring blading in Wyoming and reevaluation of sites where access was denied in Utah is not complete. Once cultural resources surveys and evaluations are completed, the FERC will consult with the consulting parties for these aspects of the project. As stipulated in the PA, the FERC, in consultation with the BLM and the FS, has provided determinations of eligibility to the SHPOs. All of the SHPOs have provided their eligibility reviews. Impacts on cultural resources determined non-significant per NRHP eligibility are not considered effects, and no further treatment or consideration is accorded these sites before construction and related activities. If any historic property would be adversely affected, KRGT is required by the PA to prepare treatment plans indicating how impact would be reduced or mitigated. Once a treatment plan is approved by the consulting parties pursuant to the PA, KRGT would implement the specified treatment measure(s) before receiving notice to proceed with project construction in any given area. Additional consultation with Native American groups is also required to identify and address any concerns these groups may have. As the PA provides for the resolution of adverse effects (Title 36 CFR Part 800.14(b)), there would be no unresolvable adverse effects for the project. Therefore, implementation of the PA would ensure that project-related adverse effects would be reduced to less than significant levels for the purposes of Section 106 and NEPA compliance.

Generally under the CEQA, a project that follows the Secretary of Interior's Standards shall be considered as mitigated to a level of less than a significant impact on the historical resources. However, in some cases, documentation as mitigation is not sufficient to reduce the impact to a level that is less than

significant (CEQA Guidelines Section 15126.4(b)(2)). Thus, documentation of an "historical resource" may not necessarily mitigate the effects "to a point where clearly no significant effect on the environment would occur" as it does under Section 106. Archaeological sites that are important for their data alone can usually be mitigated through data recovery (excavation). The CSLC is consulting with the SHPO regarding the three eligible historic cultural resources that are wholly or partially on state land. The CSLC has determined that the mitigation recommendations provided for the remaining eligible cultural resources are adequate and would reduce project-related adverse effects to less than significant levels for the purposes of the CEQA.

Air Quality and Noise

Construction air emissions associated with the Kern River 2003 Expansion Project would be short term and intermittent. KRGT would implement emission control measures developed in consultation with local air quality management districts (AQMD). Emission control measures would include the application of water and/or an organic, non-toxic tackifier on the construction right-of-way, including topsoil piles, for dust control. Before construction, KRGT would obtain a dust control permit from the Clark County Health District and submit a Dust Control Plan to the Mojave Desert AQMD and the UDEQ for approval. Due to their temporary nature, construction emissions would not have a long-term impact on ambient air quality and KRGT's implementation of its proposed emission control measures as well as other measures specified by local AQMDs would reduce impacts associated with construction emissions to less than significant levels.

All new turbines that would be installed as part of the Kern River 2003 Expansion Project would be equipped with low nitrogen oxides burners (SoLoNO$_x$™ technology). The Muddy Creek and Goodsprings Compressor Stations are the only stations that would be prevention of significant deterioration (PSD) major sources. The Muddy Creek Compressor Station is the only compressor station subject to dispersion modeling. The Muddy Creek Compressor Station dispersion modeling indicates that the station would not cause or significantly contribute to a violation of the National Ambient Air Quality Standards. The dispersion modeling analysis also indicates that the Muddy Creek Compressor Station would not have a significant impact on the nearest PSD Class I area.

With the exception of the Salt Lake and Daggett Compressor Stations, the nearest noise-sensitive areas (NSAs) are greater than 1 mile from the new and modified compressor stations. The noise analysis conducted at each of the compressor station sites indicates that all of the new and modified compressor stations would produce noise levels significantly less than 55 decibels of the A-weighted scale (dBA) at a day-night sound level (L_{dn}) at the nearest NSA with the exception of the Salt Lake and Daggett Compressor Stations. (An L_{dn} of 55 dBA is the level that protects the public from indoor and outdoor activity interference.) As a result, noise impacts from the new and modified stations would be less than significant. To ensure that the actual noise resulting from the operation of the Salt Lake and Daggett Compressor Stations is below an L_{dn} of 55 dBA, KRGT would conduct noise surveys at both stations and file the results with the FERC and the CSLC (for the Daggett Compressor Station) within 60 days of placing the compressor stations into service. If the noise attributable to the compressor stations exceeds an L_{dn} of 55 dBA at any nearby NSAs, additional noise controls would be installed within 90 days of completing the survey.

Reliability and Safety

The pipeline and aboveground facilities associated with the Kern River 2003 Expansion Project would be designed, constructed, operated, and maintained to meet or exceed the DOT Minimum Federal Safety Standards in Title 49 CFR Part 192 and other applicable Federal and state regulations. These regulations, which are intended to protect the public and to prevent natural gas facility accidents and failures, include specifications for material selection and qualification; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion.

All of KRGT's operation and maintenance procedures are documented in a written plan developed in accordance with Title 49 CFR Part 192. KRGT's plan, however, does not include specifications for conducting instrumented internal inspections using a high-resolution device commonly known as a "smart pig." Although not currently required by the DOT's Office of Pipeline Safety, an instrumented internal inspection on a periodic basis with a high-resolution tool is a proactive method of determining the mechanical integrity of a pipeline as well as verifying that the cathodic protection system is protecting the external wall of the pipeline. To ensure implementation of maximum feasible mitigation (as defined by the CEQA), the Agency Staffs have recommended that KRGT submit to the CSLC a revised operation and maintenance plan that addresses internal and external maintenance inspections of the completed facility and specifies that KRGT would, unless expressly prohibited by DOT regulations, conduct an internal inspection with a high-resolution instrument on a periodic basis, at a minimum of one inspection every 10 years, or sooner if the evidence suggests that significant corrosion or defects exist or if any new Federal or state regulations require more frequent or comparable inspections.

While its primary safety focus is accident prevention, KRGT has, in accordance with Part 192, developed an emergency response plan for the proposed project based on its current plan, which would be coordinated and tested (through drills and exercises) with local fire/police departments and emergency management agencies.

Cumulative Impacts

When the impacts of the Kern River 2003 Expansion Pipeline Project are considered additively with the impacts of other past, present, or reasonably foreseeable future projects, there is some potential for cumulative effect on resources such as vegetation and wildlife (including special status species), land use, recreation, visual resources, socioeconomics, cultural resources, air quality, and noise. For the Kern River 2003 Expansion Project, mitigation has been developed or recommended to minimize, avoid, or compensate for adverse impacts on each of these resources. Consequently, the Kern River 2003 Expansion Project would not contribute significantly to a cumulative adverse effect on the region's environment.

Growth-inducing Impacts

The potential growth-inducing impact of the Kern River 2003 Expansion Project would be the construction of additional power infrastructure; however, because the proposed power plants supplied by the project would not be solely dependent on the gas supplied by the pipeline, the proposed infrastructure growth would occur with or without the construction of the pipeline and thus would not be attributable to the proposed project.

ALTERNATIVES CONSIDERED

The No Action or Postponed Action Alternative was considered. While the No Action or Postponed Action Alternative would eliminate the environmental impacts identified in this EIS/EIR, KRGT's proposed service area would be denied access to the 885,626 Dth/d of natural gas KRGT proposes to add to its system. Consequently, the new and existing power plants would need to obtain natural gas from other sources, use alternative energy sources, or use alternative fuels.

The first option could require the construction of additional and/or new pipeline facilities in other locations to transport natural gas supplies. If other natural gas facilities are approved and constructed, each project would result in its own set of specific impacts that could be less or greater than those associated with the current proposal. The second option, use of alternative energy sources, is infeasible because the use of solar, hydroelectric, or other energy sources (*e.g.*, geothermal, fuel cells) has not been developed to the point where they would be viable energy alternatives to the proposed project.

The third option would require KRGT's customers (*e.g.*, power plants) to apply for and seek regulatory approval to use other fuels. This change in fuels could have two effects. First, it could delay or jeopardize the operating schedule of many proposed power plants, which are currently designed and being permitted to burn natural gas. Second, assuming regulatory approval to use alternative fuels could be obtained within the required time frames, it could result in increased use of less clean burning fuels and a corresponding increase in emissions.

Alternatives involving the use of other existing pipeline systems were evaluated. No existing system was found to be both environmentally preferable to the proposed facilities and able to meet the project's objectives.

Two KRGT system alternatives including a pipeline looping-only alternative (both single-loop and double-loop) and a compression-only alternative (both additional compression at existing compressor stations and additional compressor stations) were evaluated. Neither of these alternatives was found to be feasible or environmentally preferable to the proposed facilities.

Six route alternatives were evaluated in comparison with the corresponding segment of KRGT's proposed route. These alternatives were identified to respond either to concerns raised by agencies, to avoid sensitive resources, to address engineering issues, or to respond to comments on the draft EIS/EIR. None of the route alternatives considered were determined to be environmentally preferable to the proposed route.

Twelve minor route deviations from the existing pipeline that are proposed by KRGT were analyzed to determine whether they are environmentally preferable to a route adjacent to KRGT's existing pipeline. All of these deviations were determined to be warranted and environmentally acceptable.

Two alternative sites for the Salt Lake Compressor Station and one alternative site for the Dry Lake Compressor Station were evaluated. None of the alternative sites offer a clear environmental advantage over the respective proposed site.

ENVIRONMENTALLY PREFERABLE PROJECT

The Agency Staffs have determined that KRGT's proposed route is the environmentally preferable project. [6/]

MAJOR CONCLUSIONS

The conclusions presented are those of the environmental staffs of the FERC and the CSLC. The BLM will present, in its Record of Decision for the Kern River 2003 Expansion Project, its own conclusions and recommendations that incorporate the concurrence or non-concurrence of the other affected Federal land management agencies.

Review of the information provided by KRGT and further developed from data requests; field investigations; scoping; literature research; alternatives analysis; and contacts with Federal, Tribal, state, and local agencies, and individual members of the public indicates that the proposed project would result in limited adverse environmental impact. The Agency Staffs have concluded that if the project is constructed and operated in accordance with applicable laws and regulations, KRGT's proposed mitigation, and the

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[6/] In the draft EIS/EIR, the Agency Staffs concluded that KRGT's proposed route with the elimination of the deviation from the existing KRGT pipeline between mileposts 16.9 and 17.8 of the Daggett Loop was the environmentally preferable project. Subsequent to the draft EIS/EIR, the Agency Staffs determined that KRGT's proposed deviation between these mileposts would be environmentally preferable because it would reduce the length of the pipeline and eliminate the need for severe pipe bends (see section 3.3.7).

Agency Staffs' additional mitigation recommendations, it would be an environmentally acceptable action. Although many factors were considered in this determination, the principal reasons are:

- 93 percent of the proposed pipeline would be located adjacent to KRGT's existing pipeline and 99 percent would be within or adjacent to existing rights-of-way;

- the project would be consistent with or in conformance with all identified resource management plans, land and resource management plans, general management plans, and local land management plans;

- KRGT would implement its Blasting Plan, Spill Plan, Drilling Mud Release Contingency Plan, Groundwater Monitoring Plan, UECRM Plan, WWCM Procedures, PRM Plan, site-specific Reclamation Plans, Noxious Weed Plan, Wildfire Protection Plan, and COM Plan to protect natural resources during construction and operation of the project;

- use of the directional drill method would avoid disturbances to the beds and banks of the Bear River, East Branch Weber River, and Weber River and associated wetlands;

- the appropriate consultations with the FWS, the SHPOs, the BLM, the FS, other affected land management agencies, and Native Americans, and any appropriate compliance actions resulting from these consultations, would be completed before KRGT would be allowed to begin construction in any given area; and

- an environmental inspection and mitigation monitoring program would ensure compliance with all mitigation measures that become conditions of certification.

The Agency Staffs are responsible for identifying any significant environmental impact so that it can be considered by their respective Commissions in deciding whether to approve the project. As part of the analysis, specific mitigation measures were developed to reduce the environmental impact that would result from construction of the project. With one exception, KRGT's proposed and the Agency Staffs' recommended mitigation would reduce potential environmental impacts to less than significant levels. The Agency Staffs have determined that a long-term reduction in special concern vegetation communities (*i.e.*, yucca, cactus, and agave) could occur. Approval of the project would be subject to a Statement of Overriding Considerations under the CEQA due to this one significant unavoidable impact that could remain after mitigation is applied. The Agency Staffs will recommend that all mitigation measures in this EIS/EIR be attached as conditions to any Certificate of Public Convenience and Necessity issued by the FERC and to any approval issued by the CSLC. The FERC and the CSLC would ensure compliance with the mitigation measures included in this EIS/EIR through the adoption of an environmental inspection and mitigation monitoring program for the project.

INTRODUCTION

1.0 INTRODUCTION

On August 1, 2001, Kern River Gas Transmission Company (KRGT) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) in Docket No. CP01-422-000 under Sections 7(b) and 7(c) of the Natural Gas Act (NGA) and Part 157 of the FERC's regulations. KRGT seeks a Certificate of Public Convenience and Necessity (Certificate) from the FERC to expand its existing interstate natural gas pipeline system in Wyoming, Utah, Nevada, and California. [1/2/] KRGT's application to the California State Lands Commission (CSLC) for new or amended right-of-way leases across California's School Lands was received on August 6, 2001 and deemed complete on November 22, 2001. The environmental staffs of the FERC and the CSLC (Agency Staffs) have jointly prepared this final environmental impact statement/environmental impact report (EIS/EIR) to assess the environmental impact associated with the construction and operation of the facilities proposed by KRGT in accordance with the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

KRGT's proposal, referred to in this EIS/EIR as the Kern River 2003 Expansion Project, would involve the construction and operation of about 634.5 miles of 36-inch-diameter pipeline, 82.2 miles of 42-inch-diameter pipeline, 0.8 mile of 12-inch-diameter pipeline, 163,700 horsepower (hp) of compression at three new and six existing compressor stations, modifications to five existing meter stations, and appurtenant facilities. For construction planning, the new pipeline is broken into 12 segments or loops. [3/] The proposed facilities would enable KRGT to provide an additional 885,626 dekatherms per day (Dth/d) of natural gas transportation capacity. KRGT proposes to begin construction in late summer of 2002 and place the facilities in service by mid 2003. The proposed facilities are described in detail in section 2.0.

The vertical line in the margin identifies text that has been modified in this final EIS/EIR and differs from the corresponding text in the draft EIS/EIR.

1.1 PROJECT PURPOSE AND NEED

KRGT states that the Kern River 2003 Expansion Project is designed to provide transportation service between Central Rocky Mountain region gas supplies near Opal, Wyoming, to natural gas markets and pipeline interconnects in Utah, Nevada, and California. According to KRGT, energy shortages in California, coupled with KRGT's access to the abundant Central Rocky Mountain gas supplies and attractive transportation rates, have stimulated the development of many new natural gas-fired power plants along the existing KRGT interstate pipeline system. Many of these power plants have start-up dates scheduled for mid 2003.

In early 2001, KRGT sought commercial interest for additional expansion capacity with a proposed May 1, 2003 in-service date. In response, KRGT executed 18 binding transportation service agreements with 17 shippers for 902,626 Dth/d of incremental firm service commencing May 1, 2003. Approximately 78

1/ KRGT is a general partnership formed under the laws of Texas and doing business in Wyoming, Utah, Nevada, and California as a natural gas company engaged in the interstate transportation of natural gas under the Natural Gas Act.

2/ KRGT also requests permission to abandon certain facilities (*i.e.*, compressor and meter station equipment) that would be replaced by the proposed expansion facilities as well as approval of levelized 10- and 15-year transportation rates and certain regulatory asset/liability accounting. These requests will be considered in the FERC's non-environmental review of KRGT's application.

3/ A loop is a segment of pipeline that is usually installed adjacent to an existing pipeline and connected to it at both ends. The loop allows more gas to be moved through the system.

percent of the capacity is contracted for 15 years with the remainder contracted for 10 years. Over 95 percent of the capacity has primary delivery points in California, with the flexibility to access secondary delivery points upstream in Nevada and Utah. Nearly all of the capacity is projected to be used to serve existing and new power generation markets in California and Nevada.[4/] Table 1.1-1 (below) lists KRGT's shippers, state of delivery, contract quantities, and terms.

TABLE 1.1-1

Kern River 2003 Expansion Project Transportation Service Agreements

Shipper	State(s)	Contract Quantity (Dth/d)	Term (Years)
Allegheny Energy Supply Company, L.L.C.	CA	45,122	15
American Pacific Corporation	UT	2,000	15
Berry Petroleum Corporation	CA	12,000	10
BP Energy Company	UT, NV, CA	20,000	10
Calpine Energy Services, L.P.	NV, CA	50,000	15
CPN Gas Marketing Company	NV, CA	50,000	15
City of Redding	CA	1,000	15
Edison Mission Energy	CA	85,000	15
Edison Mission Energy	CA	42,500	15
El Paso Merchant Energy, L.P.	CA	78,659	10
Los Angeles Department of Water and Power	CA	39,000	15
Mirant Americas Energy Marketing, L.P.	NV, CA	90,000	15
Nevada Power Company	NV, CA	75,000	15
NRG Energy, Inc.	NV, CA	20,000	15
Pinnacle West Capital Corporation	NV, CA	19,345	10
Questar Gas Company	UT, NV, CA	53,000	15
Reliant Energy Services, Inc.	NV, CA	200,000	15
Sacramento Municipal Utility District	CA	20,000	15
Total		902,626	

1.2 PURPOSE AND SCOPE OF THIS EIS/EIR

The principal purposes for preparing an EIS/EIR are to:

- identify and assess the potential direct, indirect, and cumulative impacts on the natural and human environment that would result from the implementation of the proposed project;
- describe and evaluate reasonable alternatives to the proposed project, or to the location of the project, that would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any significant adverse effects of the project on the environment;

4/ The contracted capacity is intended for existing or newly contracted markets. In accordance with its September 1999 Policy Statement (see section 1.2.1), the FERC would not authorize KRGT, as part of the Kern River 2003 Expansion Project, to construct more capacity than is evidenced by market demands (*e.g.*, to eliminate the potential need to loop its system at a future time). However, the potential remains for KRGT to add new delivery points under its existing blanket certificate.

- identify and recommend specific mitigation measures, as necessary, to avoid or minimize significant environmental effects; and
- encourage and facilitate involvement by the public and interested agencies in the environmental review process.

The EIS/EIR focuses on the facilities that are under the FERC's and the CSLC's jurisdictions (*i.e.*, the 717.5 miles of pipeline, new and expanded compressor stations, modified meter stations, and appurtenant facilities). The scope of the analysis of those facilities not under the jurisdiction of the FERC (*e.g.*, any existing or new power plants and any laterals [5/] and powerlines that they may require that would take service from the proposed project) is described in section 1.4.

The topics addressed in this EIS/EIR include geology (including hazards and mineral and paleontological resources); soils; groundwater (including hazardous materials); surface waters (including water quality); wetlands (including hydrology); vegetation; wildlife and aquatic species; special status species; land use (including agricultural resources); transportation; recreation and special interest areas; visual resources; socioeconomics (including population, housing, and public services); cultural resources; air quality; noise; reliability and safety; cumulative impacts; growth-inducing impacts; and alternatives. The EIS/EIR describes the affected environment as it currently exists, discusses the environmental consequences of the proposed project, and compares the project's potential impact to that of alternatives. The EIS/EIR also presents recommended mitigation measures and the Agency Staffs' conclusions.

The FERC and the CSLC are the lead agencies for the preparation of this EIS/EIR. The Bureau of Land Management (BLM) and the U.S. Department of Agriculture, Forest Service (FS) Dixie National Forest and Humboldt-Toiyabe National Forest are cooperating agencies. In addition to the lead and cooperating agencies, other Federal, state, and local agencies will use the EIS/EIR in approving or issuing permits or approvals for all or part of the proposed project. Federal, state, and local permits, approvals, and consultations for the project are discussed in section 1.6.

1.2.1 FERC

The FERC is the Federal agency responsible for evaluating applications filed for authorization to construct and operate interstate natural gas pipeline facilities. As such, the FERC is the lead Federal agency for the preparation of this EIS/EIR in compliance with the requirements of NEPA, the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (Title 40 Code of Federal Regulations [CFR] Parts 1500-1508), and the FERC's regulations implementing NEPA (Title 18 CFR Part 380).

The FERC will consider the findings of the EIS/EIR as well as non-environmental issues in its review of KRGT's application to determine whether a Certificate should be issued for the project. A Certificate will be granted only if the FERC finds that the evidence produced on technical competence, financing, rates, market demand, gas supply, existing facilities and service, environmental impacts, long-term feasibility, and other issues demonstrates that a project is required by the public convenience and necessity. Environmental impact assessment and mitigation development are important factors in the overall public interest determination.

5/ A lateral is a segment of pipeline that is usually installed perpendicular to an existing pipeline to connect the existing pipeline to another facility.

On February 27, 2002, the FERC issued a Preliminary Determination on Non-Environmental Issues (PD) to KRGT. The PD indicates that KRGT's application under Section 7(c) of the NGA to construct, operate, and maintain natural gas facilities would, on the basis of all pertinent non-environmental issues, be required by the public convenience and necessity. The issuance of a PD does not prejudice any further actions by the Commission. Final action on the FERC Certificate would not occur until after the environmental review is completed, all environmental issues have been appropriately addressed, and a final Order is issued by the Commission.

1.2.2 CSLC

The CSLC is the state agency that has jurisdiction and management control over California's Sovereign and School Lands. [6/] As such, the CSLC has the principal responsibility for carrying out and approving the project in California, and is thus the lead agency in California for preparing the EIS/EIR, complying with the CEQA (Public Resources Code Section 21000 *et seq.*), following the guidelines for the implementation of the CEQA (California Code of Regulations Title 14, Section 15000 *et seq.*), and coordinating the review of the EIS/EIR by state and local responsible and trustee agencies. These trustee agencies include the California Department of Fish and Game (CDFG), the Regional Water Quality Control Boards (RWQCBs), the California Department of Transportation (Caltrans), and the local Air Quality Management Districts (AQMD). [7/]

The CSLC will use the EIS/EIR in its decision-making process in determining whether or not to issue to KRGT new right-of-way leases adjacent to KRGT's existing right-of-way leases across California's School Lands or to amend the existing leases. When the EIS/EIR is completed, the CSLC must certify that:

- the final EIS/EIR has been completed in compliance with the CEQA;
- the final EIS/EIR was presented to the CSLC in a public meeting, and the CSLC reviewed and considered the information contained in the final EIS/EIR prior to considering the proposed project; and
- the final EIS/EIR reflects the CSLC's independent judgement and analysis (CEQA Guidelines Section 15090(a)).

In conjunction with certification of the EIS/EIR, the CSLC must prepare one or more written findings of fact for each significant environmental impact identified in the document. These findings must either state that:

- the project has been changed (including adoption of mitigation measures) to avoid or substantially reduce the magnitude of the impact;

6/ Generally, Sovereign Lands include all ungranted tidelands and submerged lands, beds of navigable rivers, streams, sloughs, lakes, bays, estuaries, inlets, and straits. School Lands are what remain of the nearly 5.5 million acres throughout the state originally granted to California by the Congress in March of 1853 to benefit public education.

7/ The CSLC's authority under the CEQA is subject to the CEQA Guidelines Section 15277, which states: "CEQA does not apply to any project or portion thereof located outside of California which will be subject to environmental impact review pursuant to the National Environmental Policy Act of 1969 or pursuant to a law of that state requiring preparation of a document containing essentially the same points of analysis as in an environmental impact statement prepared under the National Environmental Policy Act of 1969. Any emissions or discharges that would have a significant effect on the environment in the State of California are subject to CEQA where a California public agency has authority over the emissions or discharges."

- changes to the project are within another agency's jurisdiction and have been or should be adopted; or

- specific considerations make mitigation measures or alternatives infeasible.

If any of the impacts identified in the EIS/EIR cannot be reduced to a level that is less than significant, the CSLC may issue a Statement of Overriding Considerations for approval of the project if specific social, economic, or other factors justify a project's unavoidable adverse environmental effects. If the CSLC decides to approve a project for which an EIS/EIR has been prepared, the CSLC issues a Notice of Determination and can act on KRGT's application for new or amended right-of-way leases across California's School Lands.

1.2.3 BLM and Other Cooperating Agencies

The BLM, the Dixie National Forest, and the Humboldt-Toiyabe National Forest are Federal land management agencies affected by KRGT's proposal. Because these agencies must comply with the requirements of NEPA before granting or amending rights-of-way across lands under their management, these agencies have elected to cooperate with the FERC and the CSLC in preparing this EIS/EIR.

As a cooperating agency, the BLM proposes to adopt this EIS/EIR per Title 40 CFR Part 1506.3 to meet its responsibilities under NEPA in considering KRGT's application for a right-of-way grant, which was filed with the BLM on March 26, 2001. Under Section 185(f) of the Mineral Leasing Act of 1920, the BLM has the authority to issue right-of-way grants for all affected Federal lands. This would be in accordance with Title 43 CFR Parts 2800 and 2880, subsequent 2800 and 2880 Manuals, and Handbook 2801-1. For the Kern River 2003 Expansion Project, the BLM would consider the issuance of a new or amended right-of-way grant and the issuance of associated temporary use permits that would apply to all BLM-managed and other Federal lands, including the Dixie and Humboldt-Toiyabe National Forests. The BLM would consider conformance with land use plans and impacts on resources and programs to determine whether to issue a new or amended right-of-way grant.

The BLM California State Office is serving as the lead agency conducting and overseeing Native American consultations for this project. The BLM California State Office sent initial consultation letters to Native American groups that may have an interest in the project area. Subsequent to these letters, members of various BLM field offices met with Native American groups, if requested. Section 4.10.5 describes the status of Native American consultations and Native American Treaty Rights issues.

The Dixie and Humboldt-Toiyabe National Forests as well as other affected Federal land management agencies (*e.g.*, military bases crossed by the project) would issue a letter to the BLM that would concur or not concur with issuance of a right-of-way grant across their lands. These agencies' concurrence or non-concurrence would be based on consistency of the project with their respective land management plans and conformance with other applicable guidance and mandates. The BLM would consider the concurrence or non-concurrence of these agencies, as well as FERC approval or denial, in making its decision whether to grant the right-of-way. The BLM's decision would be documented in a Record of Decision (ROD). If the BLM decides to approve the project, it would issue a new or amended right-of-way grant and a notice to proceed that would allow construction on Federal lands. The right-of-way grant would include standard and site-specific stipulations of the affected land management agencies, conditions imposed on the project as the result of the NEPA and CEQA review, and a complete Plan of Development. The Plan of Development for the Kern River 2003 Expansion Project is referred to as the Construction, Operation, and Maintenance Plan (COM Plan). Details of land ownership are presented in sections 2.2 and 4.8.1, consistency with land management plans is discussed in section 1.5, and the COM Plan is discussed in more detail in section 2.3.

1.3 PUBLIC REVIEW AND COMMENT

The scoping process for the Kern River 2003 Expansion Project began on June 25-29, 2001. [8] During that week, the FERC, the CSLC, and the BLM staffs met with agency representatives along the proposed pipeline route to discuss the project and allow them the opportunity to express issues and concerns that should be addressed in the EIS/EIR.

On July 6, 2001, the CSLC issued a *Notice of Preparation of a Draft EIR and Notice of Public Scoping Meeting* (NOP). The NOP briefly described the project, provided a preliminary list of environmental issues, invited written comments from the public on the scope and content of the environmental information and analysis that should be included in the EIR, and listed the date and location of a public scoping meeting that would also be used as the NEPA scoping meeting for the California portion of the proposed project. The NOP was sent to 1,465 interested parties, including Federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; California landowners along KRGT's existing pipeline and its proposed and alternative routes; and local libraries and newspapers. The comment period on the CSLC's NOP closed on August 6, 2001.

On August 20, 2001, the FERC and the CSLC jointly issued a *Notice of Intent/Preparation to Prepare a Joint Environmental Impact Statement/Report for the Proposed Kern River 2003 Expansion Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings and Site Visit* (NOI/NOP). The NOI/NOP briefly described the project, provided a preliminary list of EIS/EIR issues, invited written comments from the public on KRGT's proposal, and listed the date and location of five public scoping meetings to be held in communities near the proposed pipeline route. The NOI/NOP was sent to 5,722 interested parties, including Federal, state, and local agencies; elected officials; environmental and public interest groups; Native American tribes; landowners along KRGT's existing pipeline (including the unlooped areas) and its proposed and alternative routes; local libraries and newspapers; and the intervenors[9] in this proceeding before the FERC. The comment period on the NOI/NOP closed on September 24, 2001.

In total, six public scoping meetings were held in the project area to provide an opportunity for the general public to learn more about the proposed project and participate in the environmental analysis by commenting verbally on the issues to be included in the EIS/EIR. These meetings were held in Barstow, California (August 2, 2001); Evanston, Wyoming (September 17, 2001); West Valley City, Utah (September 18, 2001); Fillmore, Utah (September 19, 2001); St. George, Utah (September 20, 2001); and Las Vegas, Nevada (September 21, 2001). In addition to being announced in the NOP and the NOI/NOP, announcements of these meetings were published in local newspapers. A transcript of each public scoping meeting and all written comments are part of the public record for the Kern River 2003 Expansion Project.[10]

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[8] In addition to the agency scoping meetings, KRGT held 14 public open houses in communities along the existing KRGT pipeline system between May 29 and June 28, 2001. These open houses were held in Evanston and Kemmerer, Wyoming; Coalville, West Valley, Riverton, Nephi, St. George, Cedar City, and Fillmore, Utah; Moapa and Goodsprings, Nevada; and Barstow, Tehachapi, and Bakersfield, California. Affected and adjacent landowners, regulatory and resource agency staffs, government officials, and other interested parties were invited to participate and comment on the proposed project. KRGT also established a toll-free project number, a project web site, and a project e-mail address that were distributed to all participants at the open houses. The issues raised at the KRGT open houses are similar to issues raised during the NEPA/CEQA scoping processes and are addressed in this EIS/EIR.

[9] Intervenors are official parties to the proceeding and have the right to receive copies of case-related Commission documents and filings by other intervenors. Likewise, each intervenor must provide 14 copies of its filings to the Secretary of the Commission and must send a copy of its filings to all other intervenors. Only intervenors have the right to seek rehearing of the Commission's decision.

[10] The scoping meeting transcripts and written comment letters are available for viewing on the FERC Internet web site (http://www.ferc.gov). Using the "RIMS" link, select "Docket #" and follow the instructions (call (202) 208-2222 for assistance).

The environmental scoping comments received during the agency and public scoping periods raised issues related to the alternatives analysis, geologic hazards, water and wetland resources, vegetation, wildlife, special status species, restoration, weed control, cultural resources, land use, land requirements, construction schedule and procedures, operations and maintenance, soils, socioeconomics, air quality, cumulative impact, and pipeline safety. Table 1.3-1 (page 1-8) summarizes the issues raised during scoping and indicates the section of the EIS/EIR in which the issue is addressed.

The most frequently raised issues related to wildlife, with most of these comments pertaining to the protection of special status species such as desert tortoise and sage grouse. Comments relating to land use were numerous with several comments pertaining to private property devaluation and land use restrictions. Soils and vegetation issues were also common topics with the majority of comments pertaining specifically to erosion control, topsoil segregation, noxious weeds, and seeding. Some issues raised are not environmental issues, such as the availability of natural gas for local distribution, expressions of support for the project, recommendations to use union labor to build the project, conflict resolution for areas managed by multiple agencies, and increasing the comment period. These issues are not within the scope of this EIS/EIR. Several commenters requested more detailed maps, which were provided directly to the commenters.

The draft EIS/EIR was filed with the U.S. Environmental Protection Agency (EPA); submitted to the California State Clearinghouse; and mailed to 2,196 Federal, state, and local agencies, elected officials, Native American groups, newspapers, public libraries, intervenors to the FERC's proceeding, and other interested parties (*i.e.*, landowners, miscellaneous individuals, and environmental groups who provided scoping comments or asked to remain on the mailing list). A formal notice indicating that the draft EIS/EIR was available for review and comment was published in the Federal Register and posted in the appropriate County Clerks' offices in California. The public was given 45 days to review and comment on the draft EIS/EIR both in the form of written comments and at public meetings held in communities along the pipeline route.

Five public meetings were held in the project area to receive comments on the draft EIS/EIR. These meetings were conducted in Barstow, California (April 1, 2002); Las Vegas, Nevada (April 2, 2002); Cedar City, Utah (April 3, 2002); Salt Lake City, Utah (April 4, 2002); and Evanston, Wyoming (April 5, 2002). These meetings were announced in the draft EIS/EIR, in the notice indicating that the draft EIS/EIR was available, and in local newspapers. Each meeting was recorded and the transcripts are part of the public record for the Kern River 2003 Expansion Project. Although a few speakers asked questions about the project or made statements in favor of hiring union labor for construction, no comments on the draft EIS/EIR were presented at any of the five public meetings. Therefore, the transcripts are not included in this final EIS/EIR. [11/]

The comment period for receiving written comments on the draft EIS/EIR closed on April 15, 2002. Written comments were received from 8 Federal agencies, 12 state agencies, 5 local agencies, 9 companies or organizations, 2 groups or individuals representing Native American concerns, 4 other individuals, and the project applicant. The written comments and our responses to them are in included as section 6.0 of this final EIS/EIR.

11/ The public meeting transcripts are available for viewing on the FERC Internet web site (http://www.ferc.gov). Using the "RIMS" link, select "Docket #" and follow the instruction (call (202) 208-2222 for assistance).

TABLE 1.3-1

Summary of Issues Identified During the Agency and Public Scoping Periods

Issue	EIS/EIR Section(s) Addressing Issue
• Roles of Federal and state agencies	1.2
• Notification of affected landowners	1.3
• Requirements for Federal, state, and local permits, including Streambed Alteration Agreements, U.S. Army Corps of Engineers Section 401 and 404 permits, Federal and California Endangered Species Act review	1.6, 4.3.2.4, 4.3.2.12, 4.4.3, 4.7
• Consistency of the project with land use management plans	1.5
• Evaluation of access roads: need for new access roads; adequacy of existing roads; recommendations for controlling vehicle access	2.2, 4.8.1.1, 4.8.5, 4.8.6.2, Appendix D
• Proximity of the project to Los Angeles Department of Water and Power transmission lines	2.2.1
• Power sources for aboveground facilities and cathodic protection system	2.2.2, 4.12
• Coordination and review of the Plan of Development	1.2.3, 2.3
• Restoration, including use of native plant materials and seed, reclaiming organic material and woody debris to assist in seeding; noxious weed control, impacts of vegetation loss, assessment of KRGT's previous reclamation efforts to determine successful measures to use for the proposed project, stabilization and timing of restoration prior to winter	2.3, 2.5, 4.2.3, 4.5.2, 4.5.3, 4.5.4
• Details of construction (*e.g.*, pipe material, depth of pipe, fencing, markers, replacement or repair of existing fences, construction methods across washes, materials sources for bedding of the pipeline)	2.3.1, 2.3.2, 4.3.2.4, 4.8.1.1, 4.12.1
• Environmental monitoring	2.5
• Operation and maintenance requirements	2.6, 4.12.1
• Plans to install a fiber optic line	2.7
• Evaluation of alternatives	3.0
• KRGT's relationship to El Paso Natural Gas Company (El Paso) and the All American Pipeline and El Paso's plans to convert the All American pipeline to transport natural gas	3.3.6
• Impacts on significant known mineral resources	4.1.3
• Effects on paleontological resources	4.1.5
• Impacts on soils and importing of fill soil, topsoil segregation requirements	4.2.3.1, 4.5.2.1
• Soil erosion and sedimentation control measures	4.2.3, 4.3.2
• Impacts on groundwater resources and landfills	4.3.1, 4.3.1.4
• Impacts on surface waters	4.3.2
• Enforcement of Federal Emergency Management Agency flood proofing regulations	4.3.2.2
• Retention of wetlands and watercourses to preserve riparian and aquatic values and maintain value to wildlife populations	4.3.2, 4.4.3, 4.6.1, 4.6.2
• Evaluation of source and discharge locations for hydrostatic testing	4.3.2.10
• Impacts of open trench on wildlife and livestock	4.6.1, 4.8.2
• Impacts on mesquite habitat within the Moapa area	4.5.2, 4.5.3, 4.6.1.3, 4.7.2, 4.7.3
• Impacts from construction and operation on wildlife and special status species	4.6, 4.7
• U.S. Fish and Wildlife Service consultation for San Joaquin Valley species, details of survey requirements, evaluation of impacts on special status species inhabiting the downstream reaches of the Colorado River system	4.7
• Identification of Bureau of Land Management (BLM)-sensitive species, surveys for special plant species following BLM plant protocols	4.7.3

TABLE 1.3-1 (cont'd)

Summary of Issues Identified During the Agency and Public Scoping Periods

Issue	EIS/EIR Section(s) Addressing Issue
• Evaluation of impacts on state-listed species and state sensitive species; impacts on additional sensitive species and local species of concern	4.7.3, 4.7.4
• Identification of species covered under Clark County's Municipal Species Habitat Conservation Plan with mitigation measures incorporated	4.7.4
• Analysis of the proximity of the project to wilderness study areas, restoration standards and guidelines	4.5.2, 4.8.6.1
• Mitigation for compliance lapses from construction and operation of KRGT's existing pipeline	4.7.2.2
• Impacts of the pipeline on property use and value, public lands development, current development, and land exchanges, use of eminent domain, effect on existing easements	4.8.1, 4.8.4, 4.8.6.1, 4.9.6
• Impacts on landowners' survey markers and water and sewage pipes, evaluation of impact on local ordinances, visual impact of KRGT's pipeline markers	4.8.1.1, 4.8.7.1
• Effect of other pipelines on the proposed project	4.1.3.1, 4.8.1.1, 4.12, 4.13.1
• Impacts on grazing allotments	4.8.2
• Impacts on resources within the state right-of-way	4.8.5
• Impacts on traffic, county roads, public services, and temporary housing	4.8.5, 4.9.3, 4.9.4, 4.9.5
• Impacts of off-highway vehicles (OHV) on restoration, recommendations to control access, consideration to designate portions of right-of-way as OHV trail	4.8.6.1, 4.8.6.2
• Impacts on the Mojave National Preserve and Edwards Air Force Base	3.3.5, 3.3.6, 4.8.6.1, 4.12.3
• Impacts on visual resources	4.8.7
• Impacts on cultural resources, including discussion of the Programmatic Agreement, mitigation measures and treatment plan for significant cultural resources, cultural resources survey methodology and reports	4.10
• Consultations with Native American groups and the Bureau of Indian Affairs	1.3, 1.6, 4.10.5
• Effects of construction and operation on air quality	4.11.1
• Noise impacts during construction and operation	4.11.2
• Safety issues	4.12
• Cumulative and growth-inducing impacts	4.13, 4.14

A comment letter from a Mr. Riddle in Hinkley, California, was received too late for inclusion in section 6.0. In his letter, Mr. Riddle expresses concern that the nature of the pipeline corridor serves to make current and proposed projects vulnerable to terrorist attack.

The FERC has stated its position that the attacks of September 11, 2001, have changed the way pipeline operators and regulators must consider terrorism, both in operating existing facilities and in approving new projects. However, the likelihood of future acts of terrorism or sabotage occurring on the KRGT pipeline, or on the myriad energy facilities throughout the United States, is unpredictable given the disparate motives and abilities of terrorist groups. The continuing need to construct facilities to support future natural gas pipeline infrastructure is not diminished because of the threat of any such future acts. The FERC and other Federal agencies and industry trade groups have joined in the efforts to protect the nation's energy infrastructure. The concerns raised by Mr. Riddle fall within the scope of these ongoing efforts to protect the more than 300,000 miles of interstate natural gas transmission pipeline.

The final EIS/EIR was filed with the EPA and submitted to the California State Clearinghouse. The document was also mailed to the approximately 1,413 Federal, state, and local agencies; elected officials, Native American groups; newspapers; public libraries; intervenors to the FERC's proceeding; and other interested parties who provided scoping comments, commented on the draft EIS/EIR, or wrote to the FERC, the CSLC, or the BLM asking to receive a copy of the document. The distribution list for the final EIS/EIR is in appendix A. A formal notice indicating that the final EIS/EIR is available was published in the Federal Register and posted in the appropriate County Clerks' offices in California.

In accordance with CEQ regulations implementing NEPA, no agency decision on the proposed action may be made until 30 days after the EPA publishes a Notice of Availability of the final EIS/EIR in the Federal Register. However, the CEQ regulations provide an exception to this rule when an agency decision is subject to a formal internal appeal process that allows other agencies or the public to make their views known. This is the case at the FERC, where any Commission decision on these proposed actions would be subject to a 30-day rehearing period. Therefore, the agency decision may be made at the same time that notice of the final EIS/EIR is published by the EPA, allowing the appeal periods to run concurrently.

Under the CEQA, if the CSLC decides to approve a project for which an EIS/EIR has been prepared, the CSLC will file a Notice of Determination with the appropriate County Clerks' offices within 5 days of project approval. The County Clerks must post the notice within 24 hours of receipt. Posting the notice starts a 30-day statute of limitations period for parties wanting to challenge the CSLC's decision under the CEQA.

For the BLM, the date the EPA's Notice of Availability appears in the Federal Register initiates a 30-day period before the decision to issue or amend a right-of-way grant is made. Comments received on the final EIS/EIR during the 30-day period will be reviewed to determine if they have merit (*e.g.*, identify significant issues not previously addressed or introduce significant new information). If no changes are warranted, a ROD is prepared that documents the selected alternative as well as mitigation measures. No action concerning a proposal may be taken on Federal land until the ROD for the right-of-way grant has been issued.

1.4 NONJURISDICTIONAL FACILITIES AND RELATED ACTIONS

1.4.1 Background

Under Section 7 of the NGA, the FERC is required to consider, as part of its decision to certificate interstate natural gas facilities, all factors bearing on the public convenience and necessity. The facilities for the Kern River 2003 Expansion Project that would be under the FERC's jurisdiction include the 717.5 miles of new pipeline, new and expanded compressor stations, modified meter stations, new launchers/receivers, and new mainline valves (MLVs). These facilities are discussed in detail in section 2.1. Related to the project and also under the FERC's jurisdiction would be KRGT's installation of facilities to

tie the proposed loops into the existing mainline and meter stations. These facilities would be installed under KRGT's existing blanket certificate. Additional meter stations and pipeline laterals under the FERC's jurisdiction that may be identified in the future to connect KRGT's pipeline facilities to existing or new power plants could also be installed under KRGT's existing blanket certificate.

Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the FERC. These "nonjurisdictional" facilities may be integral to the need for the proposed facilities (*e.g.*, a power plant at the end of a pipeline that is in the jurisdiction of the FERC) or they may be merely associated as a minor, non-integral component of the jurisdictional facilities that would be constructed and operated as a result of the proposed facilities. Table 1.4-1 (page 1-12) lists the currently identified nonjurisdictional facilities that are associated with the Kern River 2003 Expansion Project and the status of their environmental review. Other power plants and pipelines that would receive gas from the Kern River 2003 Expansion Project that have been permitted and are under construction or in operation are not included in table 1.4-1.

The FERC has adopted a four-factor procedure to determine the appropriate scope of its environmental review when project-related nonjurisdictional facilities are involved. These factors are:

- whether the regulated activity comprises "merely a link" in a corridor type project (*e.g.*, a transportation or utility transmission project);
- whether there are aspects of the nonjurisdictional facility in the immediate vicinity of the regulated activity that affect the location and configuration of the regulated activity;
- the extent to which the entire project will be within FERC jurisdiction; and
- the extent of cumulative Federal control and responsibility.

Under the CEQA, a lead agency (in this case the CSLC) may not divide a larger project into pieces (*i.e.*, "piecemeal" or "segment" a project). This rule arises from the definition of "project" in CEQA Section 21065, which includes the phrase "whole" of the activity. Pursuant to CEQA Guidelines Section 15165, the CSLC must ensure that the EIS/EIR meets the standards listed below.

- Where individual projects are, or a phased project is, to be undertaken and where the total undertaking comprises a project with significant environmental effect, the lead agency shall prepare a single program document for the ultimate project as described in CEQA Guidelines Section 15168.
- Where an individual project is a necessary precedent for action on a larger project, or commits the lead agency to a larger project, with significant environmental effect, the document must address the scope of the larger project.
- Where one project is one of several similar projects of a public agency, but is not deemed a part of a larger undertaking or a larger project, the agency may prepare one document for all projects, or one for each project, but shall in either case comment upon the cumulative effect.

For example, activities related to a proposed project must be included in a single CEQA document (1) when they are reasonably foreseeable consequences of the project; (2) when the activity is a future expansion of the proposed project and will be significant because it will likely change the scope, nature, and impacts of the project; (3) when the proposed project cannot proceed without essential public services that would be provided by the related activity; or (4) when the proposed project and related activity are integral parts of the same project.

TABLE 1.4-1

Nonjurisdictional Facilities Associated with the Kern River 2003 Expansion Project

Facility (Sponsor)	Location	Existing	Proposed Facilities	Status of Environmental Review
Arrow Canyon Power Plant (Reliant Energy)	Clark County, Nevada	No	Natural gas-fired, air-cooled 500-megawatt (MW) power plant; powerlines; a 2-mile-long, 16-inch-diameter lateral natural gas pipeline; and ancillary components.	The BLM is preparing an Environmental Assessment for the project.
Coyote Creek Compressor Station Powerline (Pacific Power)	Uinta County, Wyoming	No	1.3-mile-long powerline to KRGT's proposed Coyote Creek Compressor Station.	Included in this EIS/EIR.
Dry Lake Compressor Station Powerline (Nevada Power)	Clark County, Nevada	No	0.3-mile-long powerline to KRGT's proposed Dry Lake Compressor Station.	Included in this EIS/EIR.
Meadow Valley Generating Project (PG&E NEG)	Clark County, Nevada	No	Natural gas-fired, air-cooled 1,000-MW power facility; approximate 19.3-mile-long, 500-kV altemating current powerline; 0.8-mile-long, 20-inch-diameter natural gas supply line; 0.8-mile-long, 20-inch-diameter wastewater discharge line; 17.5-mile-long, 20-inch-diameter water pipeline; 8.5-mile-long, 20-inch-diameter water pipeline; 9-mile-long, 69-kV powerline; 10-MW substation; and a 9-mile-long, 34.5-kV (maximum) distribution line.	The BLM is preparing an EIS for the project.
Moapa Paiute Energy Center (Calpine Corporation)	Clark County, Nevada	No	Natural gas-fired 760-MW power plant; two 230 kV-powerlines; an access road; a 4,000- to 6,000-foot-long, 20-inch-diameter lateral natural gas pipeline and meter station; borrow pits; a well field; water lines; staging areas; and railroad sidings.	The Bureau of Indian Affairs is preparing an EIS for the project.
Salt Lake Compressor Station Powerline (Utah Power)	Salt Lake County, Utah	No	100-foot-long powerline to KRGT's proposed Salt Lake Compressor Station.	Included in this EIS/EIR.
Toquop Energy Power Plant (Toquop Energy)	Mesquite, Nevada	No	Natural gas-fired 1,100-MW combined cycle power plant, 1,000-foot-long lateral, and a meter station.	The project would be on BLM land; however, no environmental review has begun.

1.4.2 Conclusions

After applying the four-factor procedure to the Kern River 2003 Expansion Project and reviewing the project for consistency with the CEQA, the following conclusions can be made:

- The FERC's control and responsibility is not sufficient to extend its environmental review to include the associated nonjurisdictional facilities.

- With the exception of the three powerlines proposed to supply power to KRGT's proposed new compressor stations, the environmental review is already being conducted by another Federal or state agency and it would be duplicative to conduct an environmental review of the facilities in this EIS/EIR.

- The three new powerlines that would be constructed by Pacific Power, Nevada Power, and Utah Power, respectively, to KRGT's three proposed new compressor stations are addressed in this EIS/EIR.

- No other projects potentially associated with the proposed project that have not already been permitted are located in California and, therefore, CEQA does not apply.

These conclusions notwithstanding, the environmental effects of the nonjurisdictional facilities associated with the proposed Kern River 2003 Expansion Project are addressed in the cumulative impact analysis in section 4.13 of this EIS/EIR.

1.5 CONSISTENCY WITH REGIONAL AND LOCAL PLANS

The proposed project must be consistent or in conformance with the guidelines, management objectives, and/or designated uses set forth in regional and local plans for the project area, or a plan amendment would be required. Plans that were reviewed for consistency include BLM resource management plans (RMP), FS land and resource management plans (LRMP) and general management plans (GMP), and local land management plans. A summary of the applicable plans and consistency information is presented in table 1.5-1 (page 1-14).

1.5.1 Bureau of Land Management

The proposed project would cross BLM-administered lands under the jurisdiction of seven field offices in Wyoming, Utah, and Nevada and one district office and three field offices in California. These include:

- Wyoming - Kemmerer Field Office;
- Utah - Salt Lake Field Office, Fillmore Field Office, Cedar City Field Office, and the St. George Field Office;
- Nevada - Ely Field Office and the Las Vegas Field Office; and
- California - California Desert District (CDD) Office, Barstow Field Office, Needles Field Office, and the Ridgecrest Field Office.

A review of the RMPs for each of the listed field or district offices indicates that the proposed project would be in conformance with these plans (see table 1.5-1 (page 1-14)). The project would conform to BLM plans and programs, subject to site-specific conditions that may be implemented as the result of this analysis. The RMPs analyzed are summarized below.

TABLE 1.5-1

Consistency of the Kern River 2003 Expansion Project with Regional and Local Plans

Responsible Agency	Plan Name	Consistency with Plan/Policy	Comments
FEDERAL			
Bureau of Land Management			
Wyoming			
Kemmerer Field Office	Kemmerer Resource Management Plan	In Conformance	See section 1.5.1.
Utah			
Salt Lake Field Office	Pony Express Resource Management Plan	In Conformance	See section 1.5.1.
Fillmore Field Office	Warm Springs Resource Management Plan	In Conformance	See section 1.5.1.
	House Range Resource Area Resource Management Plan	In Conformance	See section 1.5.1.
Cedar City Field Office	Cedar Beaver Garfield Antimony Resource Management Plan	In Conformance	See section 1.5.1.
St. George Field Office	St. George Field Office Resource Management Plan	In Conformance	See section 1.5.1.
Nevada			
Ely Field Office	Caliente Management Framework Plan and the Caliente Management Framework Plan Amendment and Record of Decision for the Management of Desert Tortoise Habitat	In Conformance	See section 1.5.1.
Las Vegas Field Office	Las Vegas Resource Management Plan	In Conformance	See section 1.5.1.
	Red Rock Canyon National Conservation Area General Management Plan	In Conformance	See section 1.5.1.
California			
California Desert District Office	California Desert Conservation Area Plan 1980, as Amended	In Conformance	See section 1.5.1.
U.S. Department of Agriculture, Forest Service			
Dixie National Forest	Land and Resource Management Plan for the Dixie National Forest	Consistent	See section 1.5.2.
Humboldt-Toiyabe National Forest/Spring Mountains National Recreation Area	General Management Plan for the Spring Mountains National Recreation Area; an Amendment to the Land and Resource Management Plan, Humboldt-Toiyabe National Forest	Consistent	See section 1.5.2.
LOCAL			
Wyoming			
Lincoln County Planning Office	Lincoln County Comprehensive Plan	Consistent	The proposed project would not be inconsistent with the Lincoln County Comprehensive Plan (Dovey, 2001).

TABLE 1.5-1 (cont'd)

Consistency of the Kern River 2003 Expansion Project with Regional and Local Plans

Responsible Agency	Plan Name	Consistency with Plan/Policy	Comments
Uinta County Department of Survey and Planning	Unita County Land Use Resolution/ Uinta County Comprehensive Plan	Consistent	The proposed project would pose no issues or inconsistencies with the Uinta County Land Use Resolution and would conform to the Uinta County Comprehensive Plan (Klinker, 2001).
Utah			
Summit County Community Development and Planning	Summit County General Plan	Consistent	The proposed project is not inconsistent with the Summit County General Plan (Summit County Planning Manager, 2001).
Morgan County Planning and Zoning Department	Morgan County Land Use Code/ Morgan County General Plan	Consistent	The proposed project would pose no inconsistencies with the Morgan County Land Use Code, which administers the county's General Plan (Page, 2001).
Salt Lake County Planning and Development Services	Salt Lake County General Plan	Consistent	The Salt Lake County General Plan does not prohibit pipeline construction and operation (Schaffer, 2001).
Utah County	Utah County General Plan	Consistent	Pipeline construction and operation are not inconsistent with Utah County's General Plan (Mendenhall, 2002).
Juab County Department of Planning and Zoning	Juab County General Plan	Consistent	Pipeline construction and operation are not inconsistent with Juab County's General Plan (Greenhalgh, 2001).
Millard County Planning Department	Millard County General Plan	Consistent	The proposed project would not be inconsistent with the Millard County General Plan (Smith, 2001).
Beaver County Department of Economic Development and Planning	Beaver County General Plan	Consistent	Pipeline construction and operation are not inconsistent with the Beaver County General Plan (Harris, 2001).
Iron County Department of Community Development and Planning	Iron County Land Management Code/General Plan	Consistent	The proposed project is not inconsistent with the Iron County Land Management Code, which includes the county's General Plan (Nay, 2001).
Washington County Department of Planning and Zoning	Washington County General Plan	Consistent	The proposed project is not inconsistent with the Washington County General Plan and is an acceptable land use (Goheem, 2001).

TABLE 1.5-1 (cont'd)

Consistency of the Kern River 2003 Expansion Project with Regional and Local Plans

Responsible Agency	Plan Name	Consistency with Plan/Policy	Comments
Nevada			
Lincoln County Department of Planning and Zoning	Lincoln County Master Plan	Consistent	The proposed project would not be inconsistent with the Lincoln County Master Plan (Hartman, 2001).
Clark County Department of Comprehensive Planning	Clark County General Plan	Consistent	The proposed project would not be inconsistent with the Clark County General Plan (Pinkerton, 2001).
California			
San Bernardino County Land Use Services, Environmental Planning	San Bernardino County General Plan	Consistent	The proposed project would not be inconsistent with the San Bernardino County General Plan (Slowik, 2001).
Kern County Resource Management Agency	Kern County General Plan	Consistent	The proposed project would not be inconsistent with the Kern County General Plan (Strait, 2001).

Wyoming

Kemmerer Field Office - The proposed Kern River 2003 Expansion Project is in conformance with the management objectives of the Kemmerer RMP. The Kemmerer Field Office is managed under the Kemmerer RMP, which was completed in April 1986. The approved Kemmerer RMP represents a selection of management actions that resolve planning issues and provide multiple-use management of public lands and resources in a combination that will best meet present and future needs. The RMP specifically addresses the types of development activities on public lands included in this proposed action. The Kemmerer Field Office grants rights-of-way to qualified individuals and businesses. Rights-of-way are issued incorporating surface reclamation stipulations and other mitigating measures. Restrictions and mitigating measures may be modified on a case-by-case basis. Access is minimized in crucial wildlife habitat. Additionally, if facilities follow the same right-of-way for all or part of the route, they would be required to be constructed so that only one reclamation effort is required. Further, to facilitate revegetation of non-linear rights-of-way, permanent aboveground facilities would be fenced to prevent grazing.

Utah

Salt Lake Field Office - The Kern River 2003 Expansion Project is in conformance with the management objectives of the Pony Express RMP. A portion of the Salt Lake Field Office is managed under the Pony Express RMP. The RMP contains the decisions for management of public lands in Tooele, Utah, and Salt Lake Counties. The Salt Lake Field Office completed the RMP in January 1990. The RMP was created to achieve the development of resources while protecting or enhancing environmental values. The RMP addresses the types of development activities on public lands included in this proposed action. Rights-of-way are granted where the proposed action is consistent with the prescriptions of the RMP. The Salt Lake Field Office intends to make every reasonable effort when considering rights-of-way proposals to avoid environmentally sensitive areas and to meet the needs of the local populace and other users.

Fillmore Field Office - The Kern River 2003 Expansion Project is in conformance with the management objectives of the Warm Springs RMP. A portion of the Fillmore Field Office, the Warm Springs Resource Area (WSRA), is managed under the Warm Springs RMP. The Fillmore/Richfield Field Office completed the RMP in September 1986. This RMP provides a framework of goals and objectives for future public land management in the WSRA. The RMP identifies allowable resource uses, levels of use or production to be maintained, and general management practices. Multiple-use management is provided to sustain a supply of renewable/natural resources for local, regional, and national needs. Management is directed to facilitate economic growth locally and regionally. The RMP specifically addresses the types of development activities on public lands included in this proposed action. Rights-of-way are processed on a case-by-case basis. Existing major rights-of-way are designated as corridors. New rights-of-way are restricted to these corridors wherever feasible.

The Kern River 2003 Expansion Project is also in conformance with the management objectives of the House Range Resource Area RMP. A portion of the Fillmore Field Office is managed under the House Range Resource Area RMP. The RMP was adopted by the Fillmore/Richfield Field Office in October 1987. The RMP addresses long-term needs of future generations for renewable and non-renewable resources. The plan also gives consideration to environmental, scientific, educational, and economic factors. The RMP specifically addresses the types of development activities on public lands included in this proposed action. The Fillmore Field Office grants rights-of-way on a case-by-case basis, and the utilization of existing corridors, whether designated or not, is a standard procedure.

Cedar City Field Office - The proposed Kern River 2003 Expansion Project is in conformance with the management objectives of the Cedar Beaver Garfield Antimony RMP. The east side of the Cedar City

Field Office is managed under this RMP, which was completed in October 1986. The RMP was developed to provide more effective public land management and to improve land use, productivity, and utility through accommodation of community expansion and economic development needs, improved land ownership patterns, and providing for the authorization of legitimate uses of public lands by processing use authorization such as rights-of-way, leases, and permits. The RMP specifically addresses the types of development activities on public lands included in this proposed action. Applications for use authorizations such as rights-of-way are determined on a case-by-case basis. Projects are encouraged to locate rights-of-way within designated corridors.

St. George Field Office - The Kern River 2003 Expansion Project is in conformance with the management objectives of the St. George Field Office RMP. The St. George Field Office is managed under this RMP, which was completed in March 1999. The RMP was developed to provide a framework for commitment to achieve critical resource management objectives, employ approved standards for maintaining long-term health of the land, provide for sound human use and enjoyment, and sustain local economies and community well being. The RMP specifically addresses the types of development activities on public lands included in this proposed action. The St. George Field Office grants rights-of-way where consistent with planning goals and prescriptions for other resources. Project sponsors are encouraged to locate new rights-of-way in existing or designated utility and transportation corridors. Mitigation measures needed to avoid adverse impacts are integrated into project proposals and, where appropriate, alternatives identified to further reduce environmental impacts on lands, resources, or adjacent land uses.

Nevada

Ely Field Office - The Ely Field Office is managed under the Caliente Management Framework Plan (MFP) and the Caliente MFP Amendment and ROD for the Management of Desert Tortoise Habitat. The Caliente MFP was signed by the State Director on September 21, 1979. The Caliente MFP multiple-use decisions establish goals, objectives, constraints, and uses that guide future actions on public land in the planning unit. The lands program for the Caliente Planning Unit includes classification and establishment of lands for multiple-use purposes including agriculture, residential, commercial, industrial, recreational, and public purposes. The program also provides for support of other resource management programs by coordinating land acquisition and disposal, establishing/designating rights-of-way, and discouraging trespassing. The Caliente MFP Amendment and ROD was signed by the State Director on September 19, 2000. The goal of the Caliente MFP Amendment and ROD is to assist in the recovery and delisting of the Mojave population of desert tortoise in the Northeastern Mojave Recovery Unit within a multiple-use management context. The amendment designated a 2,640-foot-wide utility corridor that connects to the Moapa River Indian Reservation designated utility corridor at Moapa and runs northeast to the Nevada-Utah state line. The utility corridor is 0.25 mile on either side of an existing 500 kilovolt powerline and includes portions of the KRGT pipeline.

Las Vegas Field Office - The Kern River 2003 Expansion Project is in conformance with the management objectives of the Las Vegas RMP. The Las Vegas Field Office is managed under the Las Vegas RMP, which was approved by the Las Vegas Field Office in October 1998. It provides objectives and directions as a framework for management of public lands for the foreseeable future, with implementation of the goals and objectives of the Desert Tortoise Recovery Plan being the highest priority. Further, the RMP provides for public land uses on the basis of multiple-use and sustained yield, as well as protection of unique resources. The emphasis of the Las Vegas RMP is on protecting unique habitats for threatened, endangered, and special status species, while providing areas for community growth, recreation, mineral exploration, and development. The RMP addresses the types of development activities on public lands included in this proposed action. Issuance of rights-of-way are managed such that they meet public demand and reduce

impacts on sensitive resources by providing an orderly system of development. The use of existing rights-of-way must be maximized.

The Kern River 2003 Expansion Project is also in conformance with the management objectives of the Red Rock Canyon National Conservation Area (NCA) Proposed GMP. The Red Rock Canyon NCA Proposed GMP addresses various planning issues, protects wildlife and other resources within the Red Rock Canyon NCA, provides for interpretive and educational opportunities for visitors, and allows for diverse recreation experiences. Through the Legislative Act that designated Red Rock Canyon as a NCA, the area was withdrawn from future land disposal and mineral entry. The Legislative Act also mandated that the GMP recognize valid existing rights within the Red Rock Canyon NCA. The proposed pipeline would cross about 5.4 miles of the Red Rock Canyon NCA within KRGT's existing, permanent right-of-way. Temporary Use Areas (TUA) for the construction phase of the project would likely include TUAs used during installation of KRGT's existing pipeline. Specific mitigation measures for the Kern River 2003 Expansion Project are currently being negotiated. Off-site mitigation is being considered, and would potentially include development of additional visitor facilities and interpretive materials. The Red Rock Canyon NCA is included as a sub-area in KRGT's Nevada Reclamation Plan, which is an appendix to the COM Plan. The Reclamation Plan addresses minimization of visual impacts along the right-of-way through reclamation activities. The Reclamation Plan also provides directives for restoration of the existing right-of-way because it was not sufficiently reclaimed for visual impacts during restoration of the original project (see sections 4.5.2.1 and 4.8.6.1).

California

CDD Office - The California Desert Conservation Area (CDCA) Plan (as amended) was proposed pursuant to the Federal Land Policy and Management Act of 1976 (FLPMA). The CDCA Plan provides guidelines for all BLM management decisions made for approximately 10.6 million acres of public lands within the CDCA.

The CDCA Plan, when approved, established four general Multiple-Use Classes (MUCs), Controlled or Class C, Limited or Class L, Moderate or Class M, and Intensive or Class I, that have been used to describe a different type and level or degree of use that is permitted within a particular area. However, certain uses of public lands, such as for utilities, reach across all MUCs except Class C. Therefore, individual plan elements were created to further address issues specific to each MUC. One of those elements is the "Energy Production and Utility Corridor Element" which, among other things, establishes a network of joint-use planning corridors capable of meeting projected utility service needs.

The Kern River 2003 Expansion Project, as proposed, would use portions of designated Utility Corridors D and G. Both of these corridors are 2 miles wide and are currently being used for major interstate pipelines, high voltage electric transmission lines, and fiber optic lines. These utility corridors are congested by existing uses and constrained by designated wilderness areas. The BLM's review of the decision criteria applicable to the Energy Production and Utility Corridor Element of the CDCA Plan determined that the Kern River 2003 Expansion Project is in conformance with the management objectives of the CDCA Plan, including the designation of the utility corridors approved in the CDCA Plan. Additional discussion of the CDCA is presented in section 4.8.6.1.

1.5.2 U.S. Department of Agriculture, Forest Service

The proposed project would cross national forest system lands under the jurisdiction of two different national forests; the Dixie National Forest and the Humboldt-Toiyabe National Forest/Spring Mountains National Recreation Area (NRA). The FS prepares forest plans for lands under its jurisdiction (see table 1.5-

1 (page 1-14)). According to the National Forest Management Act (NFMA) and its implementing regulations, all actions authorized subsequent to the plan must be in conformance with the approved forest plan. An action must be specifically mentioned in the forest plan, or be clearly consistent with decisions of the plan to be in conformance. To be clearly consistent, an action must comply with: 1) all stipulations, constraints, standards, and guidelines listed in the plan; and 2) all stipulations developed specifically for the proposed project for the purpose of avoiding or reducing impacts on sensitive resources identified in the plan. The Kern River 2003 Expansion Project would conform to FS plans, subject to site-specific conditions that may be implemented as the result of the analysis in this EIS/EIR. The applicable FS plans are summarized below.

Dixie National Forest

Lands within this forest are managed under the Dixie National Forest LRMP. The LRMP guides all natural resource management activities and establishes management standards and guidelines for the Dixie National Forest. It describes resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management. The plan embodies the provisions of the NFMA, regulations, and other guiding documents. The LRMP identifies rights-of-way that meet standards for utility corridor designation and designates planning window areas where energy transportation and utility rights-of-way can pass in traversing the forest. The proposed pipeline is located within the New Castle-Veyo planning window area and is consistent with the objectives of the Dixie National Forest LRMP. Additional discussion of the Dixie National Forest is presented in section 4.8.6.1.

Humboldt-Toiyabe National Forest/Spring Mountains National Recreation Area

The portion of the proposed project crossing the Humboldt-Toiyabe National Forest is managed under the GMP for the Spring Mountains NRA, which is an amendment to the LRMP for the Humboldt-Toiyabe National Forest. The GMP supplements forest-wide standards and guidelines found in the existing Humboldt-Toiyabe National Forest LRMP. Key forest-wide standards and guidelines for special uses that apply within the Spring Mountains NRA to the proposed project include locating utilities in existing corridors as first priority and burying utility lines. One of the goals identified in the GMP for the Spring Mountains NRA is to continue current uses in existing locations where they do not conflict with ecosystem conservation or protection of heritage resources. The existing KRGT pipeline was installed prior to the 1993 designation of this area as a NRA. As a result, it is considered an existing land use. The proposed pipeline, because it would be adjacent to the existing KRGT pipeline, would be consistent with the current use of the area (Ewers, 2001). Additional discussion of the Spring Mountains NRA is presented in section 4.8.6.1.

1.5.3 Local Land Management Plans

The proposed project's consistency with local land management plans was evaluated by consulting with each county crossed by the project. The proposed project is consistent with each of the applicable county plans (see table 1.5-1 (page 1-14)).

1.6 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS

Table 1.6-1 (page 1-21) lists the major Federal, state, and local permits, approvals, and consultations identified for the construction and operation of the Kern River 2003 Expansion Project. KRGT would be responsible for obtaining all permits and approvals required to implement the proposed project, regardless of whether they appear in this table.

TABLE 1.6-1

Major Permits, Approvals, and Consultations for the Kern River 2003 Expansion Project

Regulatory Agency	Required Permit or Approval	Agency Action
FEDERAL a/		
Advisory Council on Historic Preservation	Section 106 Consultation, National Historic Preservation Act (NHPA)	Has the opportunity to comment on the undertaking.
Federal Energy Regulatory Commission (FERC)	Certificate of Public Convenience and Necessity	Determine whether the construction and operation of this natural gas pipeline project is in the public interest. Consider certification of the project.
U.S. Department of Agriculture Forest Service	Special Use Permit for Dixie National Forest	Consider issuance of a Special Use Permit for the portion of the project on national forest land, or provide concurrence to the BLM to issue the right-of-way grant.
U.S Department of the Army Corps of Engineers (COE)	Section 404, Clean Water Act (CWA) Permit	Consider issuance of Section 404 permits for the placement of dredge or fill material into all waters of the United States, including wetlands. Consider issuance of a Nationwide Permit 12 for Yellow Creek.
U.S. Department of the Air Force Edwards Air Force Base (AFB)	Environmental Baseline Survey	Consider issuance of an environmental baseline survey for granting of air force real estate per AFI 32-7066 and AFI 32-9003.
	Digging Permit	Consider issuance of a digging permit (AF Form 103) for surface-disturbing activities.
	Industrial Wastewater Discharge Permit	Consider issuance of an industrial wastewater discharge permit if the proposed work includes discharging hydrostatic test water on AFB property.
	Road and Utility Outages Permit	Consider issuance of a road and utility outages permit if the proposed work requires a road or utility outage on AFB property.
	Welding, Cutting, and Brazing Permit	Consider issuance of a welding, cutting, and brazing permit (AF Form 592) for welding activities.
U.S. Department of the Interior		
Bureau of Indian Affairs (BIA)	Archeological Resource Protection Act Permit	Consider issuance of a permit for cultural resource surveys on tribal land.
	Right-of-Way Grant for Tribal Lands	Consider issuance of a grant for easement on tribal lands.
	BIA Road Department	Issue permits for crossing BIA roads in Nevada.

TABLE 1.6-1 (cont'd)

Major Permits, Approvals, and Consultations for the Kern River 2003 Expansion Project

Regulatory Agency	Required Permit or Approval	Agency Action
Bureau of Land Management	Antiquities and Cultural Resource Use Permit	Consider issuance of an antiquities and cultural resources use permit to conduct surveys and to excavate or remove cultural resources on Federal lands.
	Right-of-Way Grant	Consider granting rights-of-way and temporary use permits for portions of the project that would encroach on Federal lands, including easements across federally owned waterways.
	Temporary Use Permit	Consider issuance of a temporary use permit for temporary activities in a construction right-of-way.
	Plan of Development	Consider approval of the detailed Construction, Operation, and Maintenance Plan.
	Notice to Proceed	Following issuance of the right-of-way grant and approval of the Construction, Operation, and Maintenance Plan, consider issuance of a Notice to Proceed with project development and mitigation activities.
	Special Use Permit for Monitoring and Recovery of Paleontological Resources	Consider approval of the Paleontological Resource Mitigation Plan and field monitor credentials.
Bureau of Reclamation	Encroachment Permit	Consider issuance of permits to cross two roads in Utah.
Fish and Wildlife Service	Section 7 Consultation, Biological Opinion (Endangered Species Act)	Consider lead agency finding of impact on federally listed or proposed species. Provide Biological Opinion if the project is likely to adversely affect federally listed or proposed species or their habitats.
	Fish and Wildlife Coordination Act	Provide comments to prevent loss of and damage to wildlife resources.
U.S. Department of Transportation Federal Highway Administration	Encroachment Permit	Consider issuance of permits for the crossing of federally funded highways.
U.S. Department of the Treasury Bureau of Alcohol, Tobacco, and Firearms	Explosive User's Permit	Consider issuance of a permit to purchase, store, and use explosives for site preparation during pipeline construction.
U.S. Environmental Protection Agency, Regions VIII and IX	Section 401, CWA, Water Quality Certification	In conjunction with states, consider issuance of water use and crossing permits.
	Section 402, CWA, National Pollutant Discharge Elimination System (NPDES)	In conjunction with states, review and issue NPDES permit for discharge of hydrostatic test water.
	Section 404, CWA	Review CWA, Section 404 applications for wetland dredge-and-fill applications for the COE with 404(c) veto power for wetland permits issued by the COE.
	Stormwater Discharge Permit	In conjunction with states, review and issue stormwater permit for activities associated with pipeline and aboveground facilities construction.

TABLE 1.6-1 (cont'd)

Major Permits, Approvals, and Consultations for the Kern River 2003 Expansion Project

Regulatory Agency	Required Permit or Approval	Agency Action
WYOMING		
Wyoming Department of Environmental Quality	Notice of Intent (NOI)	Submit NOI under General Permits.
Air Quality Division	Permit to Construct	Consider issuance of a permit to construct facilities with the potential for air emissions.
	Permit to Operate	Consider issuance of a permit to operate facilities with the potential for air emissions.
Water Quality Division	Section 401, CWA, Water Quality Certification	Consider issuance of a permit for stream and wetland crossings.
	NPDES Temporary Discharge Permit	Consider issuance of a permit regulating hydrostatic test water discharge, and construction dewatering to waters of the state.
	NPDES Stormwater Discharge Permit	Consider issuance of a permit regulating discharge of stormwater from the construction work area.
Wyoming Game and Fish Department	Consultation	Review and comment on activities potentially affecting state-listed species.
Wyoming State Historic Preservation Office	Consultation under Section 106	Review and comment on activities potentially affecting cultural resources.
Wyoming Department of Transportation Highway District 3	Encroachment Permit	Consider issuance of permits for encroachment on state highways.
Union Pacific Railroad	Encroachment Permit	Consider issuance of permits to cross railroad tracks.
Lincoln County Road and Bridge Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Uinta County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.
UTAH		
Utah Department of Environmental Quality	NOI under General Permits UTR100000 and UTG070000.	Submit NOI under General Permits UTR100000 and UTG070000.
Division of Air Quality	Permit to Construct	Consider issuance of a permit to construct facilities with the potential for air emissions.
	Permit to Operate	Consider issuance of a permit to operate equipment with the potential for air emissions.
	Dust Control Plan	Consider approval of a dust control plan for construction.
Division of Water Quality	Section 401, CWA, Water Quality Certification	Consider issuance of a permit for stream and wetland crossings.
	Section 402, CWA, NPDES	Consider approval of activities that may require a discharge into waters of the United States.
	Groundwater Quality Protection	Consider issuance of a permit regulating discharge of hydrostatic test water from pipeline to land surface.
	Hydrostatic Test Permit	Consider issuance of a permit regulating discharge of hydrostatic test water to land or United States waters.

TABLE 1.6-1 (cont'd)

Major Permits, Approvals, and Consultations for the Kern River 2003 Expansion Project

Regulatory Agency	Required Permit or Approval	Agency Action
	Construction Dewatering Permit	Consider issuance of a permit regulating discharge of intruded water from construction excavation to land or United States waters.
Division of Water Rights	Water Rights Transfer	Consider issuance of a permit for the transfer of water rights for hydrostatic testing.
	Stream Channel Alteration Permit	Consider issuance of a permit for stream channel alteration.
Utah Department of Natural Resources		
Division of Forestry, Fire and State Lands	Soil Erosion, Sedimentation Control, and Spill Plan Approval	Coordinate with local conservation districts. Recommend erosion control measures.
Division of Wildlife Resources	Consultation	Review and comment on activities potentially affecting state-listed species.
Utah State Historic Preservation Office	Consultation under Section 106	Review and comment on activities potentially affecting cultural resources.
Utah Department of Transportation	Encroachment Permit	Consider issuance of permits for any activities affecting state highways or within highway easements, including road crossings.
Beaver County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Iron County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Juab County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Millard County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Salt Lake County Public Works	Encroachment Permit	Consider issuance of permits to cross county roads.
Summit County Public Works	Encroachment Permit	Consider issuance of permits to cross county roads.
Utah County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Washington County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Salt Lake, Garfield, & Western Railroad	Encroachment Permit	Consider issuance of permits to cross railroad tracks.
Union Pacific Railroad	Encroachment Permit	Consider issuance of permits to cross railroad tracks.
Western Pacific Railroad	Encroachment Permit	Consider issuance of permits to cross railroad tracks.
NEVADA		
Nevada Department of Conservation and Natural Resources		
Division of Environmental Protection		
Bureau of Water Pollution Control	NPDES Discharge Permit	Consider issuance of a permit for the discharge of hydrostatic test water.

TABLE 1.6-1 (cont'd)

Major Permits, Approvals, and Consultations for the Kern River 2003 Expansion Project

Regulatory Agency	Required Permit or Approval	Agency Action
	Section 402, CWA, NPDES Stormwater Discharge Permit	Consider issuance of a permit regulating discharge of stormwater from property to United States waters.
	Section 401, CWA, Water Quality Certification	Approve or waive the certification of activities related to dredge and fill materials.
Bureau of Air Quality	Air Quality Operating Permit	Consider issuance of a permit to construct and operate equipment with the potential for air emissions.
Division of Forestry	Take Permit for Nevada-listed Critically Endangered Plant Species	Consider issuance of a permit for the take of Nevada-listed critically endangered plant species.
Division of State Lands	Easement Permit	Consider issuance of a permit for crossing state lands, including streams and rivers.
Division of Water Resources	Rolling Stock Permit	Consider issuance of a permit for the crossing of rivers and streams.
	Water Use or Water Use Change Permit	Consider the issuance of a permit for the use of water in hydrostatic testing.
Division of Wildlife	Clearance for state-listed species	Consider biological clearance for activities potentially affecting state-listed species.
Nevada Department of Transportation	Encroachment Permit	Consider issuance of permits for any activities affecting state highways or within highway easements, including road crossings.
State Historic Preservation Office	Consultation under Section 106	Review and comment on activities potentially affecting cultural resources.
Clark County Health District Air Quality Division	Air Quality Construction and Operating Permit	Consider issuance of a permit to construct and operate facilities with the potential for air emissions.
Clark County Department of Transportation	Encroachment Permit	Consider issuance of permits to cross county roads.
	Dust Control Permit	Consider issuance of a temporary permit for construction activities causing fugitive dust.
Lincoln County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Union Pacific Railroad	Encroachment Permit	Consider issuance of permits to cross railroad tracks.
CALIFORNIA		
California Department of Fish and Game	California Endangered Species Act	Consider issuance of a Section 2081 Incidental Take Permit for state-only listed species and a Section 2080.1 consistency determination for effects on species that are both state- and federally listed.
	California Native Plant Protection Act	Review of mitigation agreement and mitigation plan for plants listed as rare.
	Streambed Alteration Agreement (Section 1600 of the California Fish and Game Code)	Consider issuance of Section 1600 Streambed Alteration Agreement.

TABLE 1.6-1 (cont'd)

Major Permits, Approvals, and Consultations for the Kern River 2003 Expansion Project

Regulatory Agency	Required Permit or Approval	Agency Action
California Department of Transportation District 8, District 6	Encroachment Permit	Consider issuance of permits for any activities affecting highways or within highway easements, including road crossings.
	Traffic Management Plan (TMP)	Approval of TMPs for state highways and freeway encroachments.
California State Historic Preservation Office	Consultation under Section 106, NHPA and California Environmental Quality Act (CEQA)	Review and comment on activities potentially affecting cultural resources.
California State Lands Commission, CEQA	Environmental Impact Report	Consider certification of the environmental impact report.
	Right-of-Way Permit (Land Use Lease)	Consider issuance of new, or amend existing, right-of-way leases across California's School Lands.
California State Water Quality Control Board	NOI	Submit NOI for stormwater coverage under Water Quality Order 99-08-DWQ.
Lahontan River Basin Regional Water Quality Control Board	Section 401, CWA, Water Quality Certification	Consider certification of activities related to dredge and fill materials.
	Section 402, CWA, NPDES	Consider issuance of permits regulating the discharge of pollutants into waters of the United States.
	NPDES Stormwater Construction Permit	Consider issuance of a permit for discharge of stormwater into waters of the United States.
	Construction Dewatering Permit	Consider issuance of a permit to discharge intruded water from construction excavation to land or United States waters.
	Hydrostatic Test Water Discharge Plan Review	Review and approve plan to verify no pollutants or waste water would be discharged.
	Waste Discharge Requirements (if necessary)	Consider issuance of waste discharge requirements.
Mojave Desert Air Quality Management District	Dust Control Plan	Consider approval of a dust control plan for construction.
San Bernardino County Flood Control District	Encroachment Permit	Consider issuance of permits for flood channel crossings or any work within the district right-of-way.
San Bernardino County Franchise Authority Special District Department	Franchise and Construction Permit	Consider issuance of a franchise license and construction permit for construction within county road rights-of-way.
San Bernardino County Transportation Department	Encroachment Permit	Consider issuance of permits to cross county roads.
Union Pacific Railroad	Encroachment Permit	Consider issuance of permits to cross railroad tracks.
Burlington Northern and Santa Fe (BN&SF) Railway Company	Encroachment Permit	Consider issuance of permits to cross railroad tracks.
Kern County Road Department	Encroachment Permit	Consider issuance of permits to cross county roads.

a/ Federal agencies must also review the proposed project for consistency with the following Federal Executive Orders: Invasive Species (Executive Order 13112, February 1999) and Migratory Birds (Executive Order 13186, January 2001).

DESCRIPTION OF THE PROPOSED ACTION

2.0 DESCRIPTION OF THE PROPOSED ACTION

2.1 PROPOSED FACILITIES

KRGT proposes to expand its existing natural gas transmission pipeline system from Opal, Wyoming to Mojave, California. The proposed expansion would consist of the construction and operation of underground pipeline loops, one underground pipeline lateral, three new natural gas compressor stations, modifications to six existing compressor stations, modifications to five existing meter stations, and related facilities as described below. An overview map of the project location and proposed facilities is provided on figure 2.1-1 (page 2-2). Detailed maps showing the pipeline route and aboveground facilities are contained in appendix B.

2.1.1 Pipeline Facilities

The natural gas pipeline proposed by KRGT would consist of a total of about 717.5 miles of 36-, 42-, and 12-inch-diameter pipeline in Wyoming, Utah, Nevada, and California. Table 2.1.1-1 (page 2-3) lists the proposed pipeline facilities with references to the specific figure and sheet numbers of the maps in appendix B that show each facility. The proposed pipeline facilities include:

- 634.5 miles of 36-inch-diameter pipeline adjacent to KRGT's existing pipeline in Wyoming (Lincoln and Uinta Counties), Utah (Summit, Morgan, Salt Lake, Utah, Juab, Millard, Beaver, Iron, and Washington Counties), Nevada (Lincoln and Clark Counties), and California (San Bernardino County). For construction planning, the new 36-inch-diameter pipeline is broken into 11 segments or loops;

- 82.2 miles of 42-inch-diameter pipeline in one loop adjacent to the portion of KRGT's existing pipeline that it jointly owns with Mojave Pipeline Company (Mojave) in California (San Bernardino and Kern Counties) [1/]; and

- 0.8 mile of 12-inch-diameter pipeline lateral in Uinta County, Wyoming.

The operating pressure of the proposed loops would range from 650 to 1,200 pounds per square inch gauge (psig). The maximum allowable operating pressure (MAOP) of the proposed loops is 1,200 psig.

KRGT's existing pipeline system is a 682-mile-long, 36-inch-diameter pipeline from Opal, Wyoming to Daggett, California (this does not include the KRGT/Mojave Common System). There are two segments of KRGT's existing pipeline that would not be looped by this project. These unlooped areas are a 28.1-mile-long segment in Davis County, Salt Lake City, Utah and a 26.1-mile-long segment in Clark County, Las Vegas, Nevada (see figure 2.1-1 (page 2-2)). KRGT elected to "skip" the first area due to the steep terrain in the Wasatch Mountains north of Salt Lake City; the second section was skipped because of the residential and commercial development that has encroached on KRGT's existing pipeline right-of-way in the Las Vegas area. While no construction is proposed in either of these areas, the average operating pressure of the existing KRGT pipeline is expected to increase approximately 14 psig to 1,052 psig in the first skipped area and 57 psig to 1,051 psig in the second skipped area. Actual pressures and pressure increases would be dependent upon gas throughput conditions and would vary from day to day. The increased pressures would, however, still be within the existing system's MAOP of 1,200 psig.

[1/] KRGT and Mojave jointly own a 42-inch-diameter mainline pipeline, two laterals, and common delivery meters extending from Daggett, California into the Bakersfield, California area. The jointly owned facilities are referred to as the "Common System." About 7/11ths of the Common System facilities are owned by KRGT and 4/11ths are owned by Mojave.

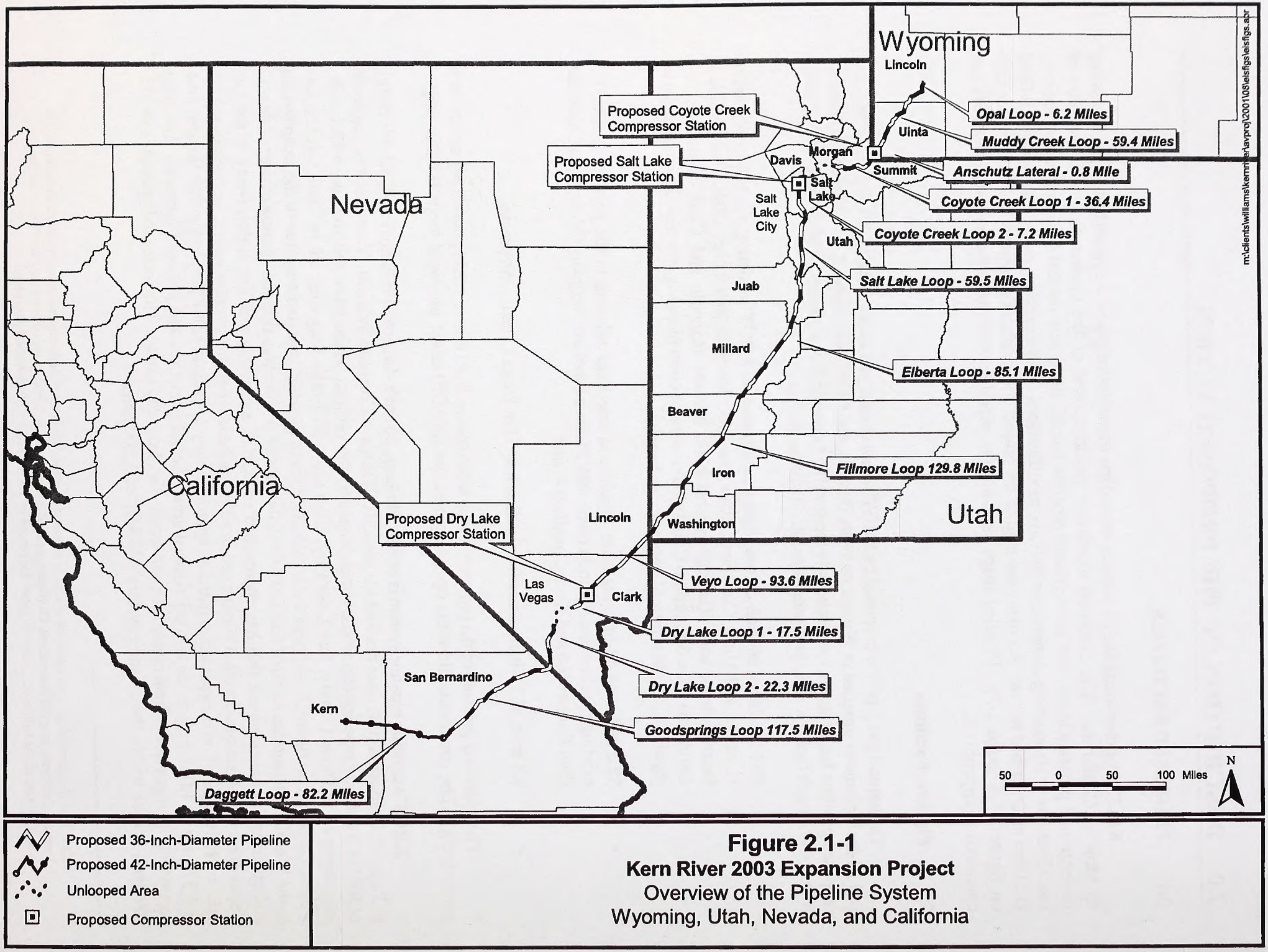


Figure 2.1-1
Kern River 2003 Expansion Project
Overview of the Pipeline System
Wyoming, Utah, Nevada, and California

TABLE 2.1.1-1

Pipeline Facilities Associated with the Kern River 2003 Expansion Project

Pipeline Segment	Pipe Diameter (inches)	Mileposts	Length (miles) a/	County	Figure/Sheet No. in Appendix B
WYOMING					
Opal Loop	36	0.0 - 6.3	6.2	Lincoln	B-1, 2-4
Muddy Creek Loop	36	0.0 - 60.1	59.4	Lincoln/Uinta	B-1, 4-25
Coyote Creek Loop 1	36	60.1 - 63.0	2.9	Uinta	B-2, 2-3
Anschutz Lateral b/	12	60.1 - 60.9	0.8	Uinta	B-2, 2
Subtotal			69.3		
UTAH					
Coyote Creek Loop 1	36	63.0 - 96.4	33.5	Summit/Morgan	B-2, 3-13
Coyote Creek Loop 2	36	124.5 - 132.0	7.2	Salt Lake	B-2, 14-17
Salt Lake Loop	36	132.0 - 191.6	59.5	Salt Lake/Utah	B-3, 2-29
Elberta Loop	36	191.6 - 276.7	85.1	Utah/Juab/Millard	B-4, 2-37
Fillmore Loop	36	276.7 - 406.5	129.8	Millard/Beaver/Iron/ Washington	B-5, 2-51
Veyo Loop	36	406.5 - 432.8	26.3	Washington	B-6, 2-12
Subtotal			341.4		
NEVADA					
Veyo Loop	36	432.8 - 500.1	67.3	Lincoln/Clark	B-6,12-33
Dry Lake Loop 1	36	500.1 - 517.5	17.5	Clark	B-7, 2-7
Dry Lake Loop 2	36	543.6 - 565.9	22.3	Clark	B-7, 8-18
Goodsprings Loop	36	565.9 - 579.4	13.5	Clark	B-8, 2-8
Subtotal			120.6		
CALIFORNIA					
Goodsprings Loop	36	579.4 - 681.9	104.0	San Bernardino	B-8, 8-38
Daggett Loop	42	0.0 - 82.4	82.2	San Bernardino/Kern	B-9, 2-26
Subtotal			186.2		
Total			717.5		

a/ Mileposts are based on the as-built mileposts for the original KRGT pipeline. Because atypical offsets, route deviations, and route alternatives were incorporated into the proposed route, the length cannot always be determined from the difference between beginning and ending mileposts.

b/ The proposed lateral would extend from the existing lateral interconnect with the existing pipeline (MP 60.9) on the discharge side of the proposed Coyote Creek Compressor Station to the suction side of the proposed Coyote Creek Compressor Station (MP 60.1), along with new tie-ins at that point to the existing pipeline and the proposed Coyote Creek Loop 1. The lateral is necessary to avoid disrupting the capability of the existing lateral to deliver supplies into the existing pipeline at prevailing pressures. The proposed lateral would be adjacent to the proposed Coyote Creek Loop 1. In some sections of this EIS/EIR, its impacts are analyzed as part of the impact of the Coyote Creek Loop 1.

2.1.2 Aboveground Facilities

Associated aboveground facilities proposed by KRGT include:

- three new compressor stations, one each in Wyoming (Uinta County), Utah (Salt Lake County), and Nevada (Clark County) for a total of 60,000 hp of compression;

- modifications to six existing compressor stations, one in Wyoming (Lincoln County), three in Utah (Utah, Millard, and Washington Counties), one in Nevada (Clark County), and one in California (San Bernardino County) for a total of 103,700 hp of new compression;

- modifications to one existing meter station in Wyoming (Lincoln County) and four existing meter stations in California (two each in San Bernardino and Kern Counties);

- 24 pig [2/] launcher/receiver facilities, 21 within the fencelines of or adjacent to other aboveground facilities, and 3 located independently along the proposed pipeline route; and

- 55 MLVs, 54 collocated with existing MLV sites and 1 located independently along the Salt Lake Loop.

The proposed new and modified compressor stations and modified meter stations are presented in table 2.1.2-1 (page 2-5). The proposed pig launcher/receiver facilities and MLVs are presented in table 2.1.2-2 (page 2-7). Tables 2.1.2-1 and 2.1.2-2 also reference the specific figure and sheet number of the maps in appendix B that show each facility.

2.2 LAND REQUIREMENTS

Table 2.2-1 (page 2-9) summarizes the land requirements for the Kern River 2003 Expansion Project. A detailed description and breakdown of land requirements and use is presented in section 4.8.1. Construction of the Kern River 2003 Expansion Project would disturb approximately 10,591.7 acres of land, including the pipeline construction right-of-way, temporary extra workspace, access roads, contractor/pipe storage/offloading yards, and aboveground facility sites. Of this total, about 7,910.1 acres would be disturbed by the pipeline construction right-of-way, 1,318.2 acres would be disturbed by temporary extra workspace, 155.5 acres would be disturbed by access roads, and 1,113.6 acres would be disturbed by contractor/pipe storage/offloading yards. The aboveground facilities would affect 94.3 acres. Only work areas approved by the jurisdictional agencies would be used.

Approximately 2,490.9 acres of the 10,591.7 acres used for construction would be required for operation of the project. Of this total, 2,401.1 acres would be for the pipeline permanent right-of-way [3/] and 89.8 acres would be for the aboveground facilities. The remaining 8,100.8 acres of land would be restored and allowed to revert to former use.

Approximately 58 percent of the land affected by construction and operation of the Kern River 2003 Expansion Project would be on public lands managed by the BLM (46 percent); the FS (3 percent); the States of Wyoming, Utah, or Nevada (3 percent); local governments (3 percent); Native Americans (2 percent); the military (1 percent); and the CSLC (<1 percent). The remainder of the land that would be affected (42 percent) is privately owned. A detailed description of land ownership is presented in section 4.8.1.1.

[2/] A pig is an internal tool used to clean and dry a pipeline and to inspect a pipeline for potential leaks or damage.

[3/] The pipeline right-of-way crossing California State School Lands is granted through a lease for right-of-way use with a term of 30 years.

TABLE 2.1.2-1

Compressor and Meter Stations Associated with the Kern River 2003 Expansion Project

Facility	Modification	Existing Horsepower (ISO)	New Horsepower (ISO) a/	Milepost	County	Figure/Sheet No. in Appendix B
		COMPRESSOR STATIONS				
WYOMING						
Muddy Creek	Uprate the existing Solar Mars 90 turbine to a Solar Mars 100 turbine, and install two Solar Mars 100 turbines, one backup generator, and one boiler	43,000	32,000	0.0	Lincoln	NA
Coyote Creek b/	Install one Solar Mars 100 turbine, one backup generator, and one boiler	0	15,000	60.1	Uinta	B-1, 25
UTAH						
Salt Lake b/	Install two Solar Mars 100 turbines, one backup generator, and one boiler	0	30,000	132.0	Salt Lake	B-2, 17
Elberta	Remove two existing Solar Taurus 60 turbines, and install one Solar Mars 100 turbine, one backup generator, and one boiler	14,300	700	191.6	Utah	NA
Fillmore	Install one Solar Mars 100 turbine	15,000	15,000	276.7	Millard	NA
Veyo	Install two Solar Mars 100 turbines, one backup generator, and one boiler, and restage the existing Solar Mars 100 turbine	15,000	30,000	406.5	Washington	NA
NEVADA						
Dry Lake b/	Install one Solar Mars 100 turbine, one backup generator, and one boiler	0	15,000	500.1	Clark	B-6, 33
Goodsprings	Install two Solar Mars 100 turbines and restage the existing Solar Mars 100 turbine	15,000	30,000	565.9	Clark	NA
CALIFORNIA						
Daggett	Restage and derate the existing electric motor-driven compressor	8,000	- 4,000	681.9	San Bernardino	NA
Total			163,700			
		METER STATIONS				
WYOMING						
Opal c/	Modify the existing station, add additional meters, tie-in to new loop tap	NA	NA	0.0	Lincoln	NA
CALIFORNIA						
PG&E	Modify the existing station, add one 12-inch orifice meter, tie-in to new loop tap	NA	NA	680.9	San Bernardino	NA

TABLE 2.1.2-1 (cont'd)

Compressor and Meter Stations Associated with the Kern River 2003 Expansion Project

Facility	Modification	Existing Horsepower (ISO)	New Horsepower (ISO) a/	Milepost	County	Figure/Sheet No. in Appendix B
Daggett	Modify the existing station, replace meters and add flow control valve, tie-in to new loop tap	NA	NA	681.9	San Bernardino	NA
Kern Front d/	Modify the existing station, replace the two existing 8-inch orifice meters with two 8-inch ultrasonic meters	NA	NA	39.5	Kern	NA
SoCal Wheeler Ridge e/	Modify the existing station, replace eight 12-inch orifice meters with five 12-inch and one 4- inch ultrasonic meters	NA	NA	137.4	Kern	NA

ISO = International Organization for Standardization
NA = Not Applicable

a/ New horsepower indicates incremental increase/decrease with the addition of the Kern River 2003 Expansion Project facilities.

b/ New compressor station. A powerline would also be constructed to each of the new compressor station sites. The location of each of these powerlines is shown on the applicable figure in appendix B.

c/ The Opal Meter Station is located at the beginning of the existing Opal Lateral.

d/ The Kern Front Meter Station is located on the East Lateral of the KRGT/Mojave Common System. The East Lateral is not being looped by the Kern River 2003 Expansion Project.

e/ The Wheeler Ridge Meter Station is located on the West Lateral of the KRGT/Mojave Common System. The West Lateral is not being looped by the Kern River 2003 Expansion Project.

TABLE 2.1.2-2

Pig Launcher/Receiver Facilities and Mainline Valves Associated with the Kern River 2003 Expansion Project

Facility	Loop	Milepost	County	Figure/Sheet No. in Appendix B
		PIG LAUNCHERS/RECEIVERS		
WYOMING				
Launcher	Opal	0.0	Lincoln	B-1, 2
Receiver/Launcher	Muddy Creek	0.0	Lincoln	B-1, 4
Receiver/Launcher	Muddy Creek/Coyote Creek 1	60.1	Uinta	B-1, 25
UTAH				
Receiver	Coyote Creek 1	96.4	Morgan	B-2, 13
Launcher a/	Coyote Creek 2	124.5	Salt Lake	B-2, 14
Receiver/Launcher	Coyote Creek 2/Salt Lake	132.0	Salt Lake	B-2, 17
Receiver/Launcher	Salt Lake/Elberta	191.6	Utah	B-3, 29
Receiver/Launcher	Elberta/Fillmore	276.7	Millard	B-4, 37
Receiver/Launcher	Fillmore/Veyo	406.5	Washington	B-5, 51
NEVADA				
Receiver/Launcher	Veyo/Dry Lake 1	500.1	Clark	B-6, 33
Receiver a/	Dry Lake 1	517.5	Clark	B-7, 7
Launcher a/	Dry Lake 2	543.6	Clark	B-7, 8
Receiver/Launcher	Dry Lake 2/Goodsprings	565.9	Clark	B-7, 18
CALIFORNIA				
Receiver/Launcher	Goodsprings/Daggett	681.8 / 0.0	San Bernardino	B-8, 38
Receiver	Daggett	82.4	Kern	B-9, 26
		MAINLINE VALVES (MLV)		
WYOMING				
MLV 1	Opal	0.0	Lincoln	B-1, 2
MLV 2	Muddy Creek	0.0	Lincoln	B-1, 4
MLV 3	Muddy Creek	17.3	Uinta	B-1, 10
MLV 4	Muddy Creek	33.5	Uinta	B-1, 15
MLV 5	Muddy Creek	49.4	Uinta	B-1, 21
MLV 6	Muddy Creek/Coyote Creek 1	60.1	Uinta	B-1, 25
UTAH				
MLV 7	Coyote Creek 1	67.2	Summit	B-2, 5
MLV 8	Coyote Creek 1	85.6	Summit	B-2, 10
MLV 9	Coyote Creek 1	96.4	Morgan	B-2, 13
MLV 10	Coyote Creek 2	124.5	Salt Lake	B-2, 14
MLV 11	Coyote Creek 2	129.8	Salt Lake	B-2, 16
MLV 12	Coyote Creek 2/Salt Lake	132.0	Salt Lake	B-2, 17
MLV 13	Salt Lake	137.4	Salt Lake	B-3, 4
MLV 14	Salt Lake	141.7	Salt Lake	B-3, 6
MLV 15	Salt Lake	149.0	Salt Lake	B-3, 9
MLV 16	Salt Lake	156.8	Salt Lake	B-3, 12
MLV 17 b/	Salt Lake	164.1	Utah	B-3, 16
MLV 18	Salt Lake	174.9	Utah	B-3, 21
MLV 19	Salt Lake/Elberta	191.6	Utah	B-3, 29
MLV 20	Elberta	210.1	Juab	B-4, 10
MLV 21	Elberta	226.0	Juab	B-4, 16
MLV 22	Elberta	242.1	Millard	B-4, 24
MLV 23	Elberta	261.1	Millard	B-4, 31

TABLE 2.1.2-2 (cont'd)

Pig Launcher/Receiver Facilities and Mainline Valves Associated with the Kern River 2003 Expansion Project

Facility	Loop	Milepost	County	Figure/Sheet No. in Appendix B
MLV 24	Elberta/Fillmore	276.7	Millard	B-4, 37
MLV 25	Fillmore	295.5	Millard	B-5, 9
MLV 26	Fillmore	313.5	Beaver	B-5, 16
MLV 27	Fillmore	333.0	Beaver	B-5, 24
MLV 28	Fillmore	351.3	Iron	B-5, 31
MLV 29	Fillmore	368.8	Iron	B-5, 36
MLV 30	Fillmore	381.7	Iron	B-5, 41
MLV 31	Fillmore	401.6	Washington	B-5, 50
MLV 32	Fillmore/Veyo	406.5	Washington	B-5, 51
MLV 33	Veyo	419.3	Washington	B-6, 6
NEVADA				
MLV 34	Veyo	438.9	Lincoln	B-6, 14
MLV 35	Veyo	457.4	Clark	B-6, 20
MLV 36	Veyo	476.8	Clark	B-6, 26
MLV 37	Veyo	492.1	Clark	B-6, 30
MLV 38	Dry Lake 1	500.1	Clark	B-7, 2
MLV 39	Dry Lake 1	515.4	Clark	B-7, 7
MLV 40	Dry Lake 1	517.5	Clark	B-7, 7
MLV 41	Dry Lake 2	543.6	Clark	B-7, 8
MLV 42	Dry Lake 2	546.5	Clark	B-7, 9
MLV 43	Dry Lake 2/Goodsprings	565.9	Clark	B-7, 18
CALIFORNIA				
MLV 44	Goodsprings	579.5	San Bernardino	B-8, 8
MLV 45	Goodsprings	598.0	San Bernardino	B-8, 13
MLV 46	Goodsprings	617.3	San Bernardino	B-8, 19
MLV 47	Goodsprings	631.6	San Bernardino	B-8, 22
MLV 48	Goodsprings	650.1	San Bernardino	B-8, 29
MLV 49	Goodsprings	666.5	San Bernardino	B-8, 33
MLV 50	Goodsprings/Daggett	681.9	San Bernardino	B-8, 38
MLV 51	Daggett	16.3	San Bernardino	B-9, 7
MLV 52	Daggett	34.9	San Bernardino	B-9, 12
MLV 53	Daggett	53.5	Kern	B-9, 17
MLV 54	Daggett	71.5	Kern	B-9, 23
MLV 55	Daggett	82.4	Kern	B-9, 26

a/ Not collocated with other existing aboveground facilities.

b/ Not collocated with an existing MLV. However, another new MLV will be installed at this location as part of a separate project under KRGT's blanket certificate due to a change in class location on KRGT's existing pipeline. The installation of this MLV will occur around the same time as the proposed project.

TABLE 2.2-1

Summary of Land Requirements Associated with the Kern River 2003 Expansion Project

Facility	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Pipeline Facilities		
Pipeline Right-of-Way a/	7,910.1	2,401.1
Temporary Extra Workspace	1,318.2	0.0
Access Roads b/	155.5	0.0
Contractor/Pipe Storage/Offloading Yards	1,113.6	0.0
Pipeline Facilities Subtotal	10,497.4	2,401.1
Aboveground Facilities		
Compressor Stations		
Coyote Creek Compressor Station c/	31.0	30.9
Salt Lake Compressor Station c/	32.0	32.0
Veyo Compressor Station d/	4.0	0.0
Dry Lake Compressor Station c/	23.3	22.9
Remaining Compressor Stations e/	0.0	0.0
Compressor Station Subtotal	90.3	85.8
Meter Stations f/	0.0	0.0
Pig Launcher/Receiver Facilities g/	4.0	4.0
MLVs h/	0.0	0.0
Aboveground Facilities Subtotal	94.3	89.8
Project Total	10,591.7	2,490.9

a/ Based on a nominal construction right-of-way of 75 feet wide for 36-inch-diameter pipe and 80 feet wide for 42-inch-diameter pipe. Operational acreage based on an additional 25-foot-wide new permanent right-of-way where the proposed pipeline is parallel to the existing pipeline and a 50-foot-wide permanent right-of-way where the proposed pipeline deviates from the existing pipeline right-of-way.

b/ KRGT would use several existing roads for access to the construction right-of-way. Some of these existing roads would need to be graded and widened. See table D-2 (pages D-44 through D-61) in appendix D.

c/ Includes construction and improvement of an access road and powerline to the facility.

d/ Modifications would require an additional 4.0 acres of land outside of the existing fenced facility during construction.

e/ Modifications would be conducted within the existing fenceline of each facility.

f/ Modifications at the meter stations would be conducted within the existing fenceline of each facility.

g/ Pig launchers and receivers would be installed at the beginning and end points of each loop within the fencelines of or adjacent to other aboveground facilities except in three locations. At each of these three locations and at another two locations where the launcher/receiver would be located adjacent to MLVs, approximately 0.8 acre of land would be required for construction and operation of the facility and associated access road.

h/ New MLVs would be collocated with existing MLVs except in one location on the Salt Lake Loop. This MLV and associated 12-foot-wide and 600-foot-long access road would be located within the permanent right-of-way.

2.2.1 Pipeline Rights-of-Way and Additional Construction Work Areas

The proposed loops would be generally installed at the edge of KRGT's existing permanent right-of-way using a standard 25-foot offset from the existing KRGT pipeline. At certain locations, however, the proposed route deviates from this standard offset configuration due to terrain, environmental features, development, or at the request of the land management agency. Table C-1 (pages C-1 through C-15) in appendix C identifies the location and length of each of the atypical offsets and route deviations and provides KRGT's rationale for adopting them as part of the proposed route.

Of the 717.5 miles of proposed pipeline, approximately 634.5 miles (88.4 percent) would be constructed adjacent to the existing KRGT pipeline using the standard 25-foot offset (about 6.5 miles of this would be constructed using less than the standard 25-foot offset due to site-specific conditions). Another 35.6 miles (5.0 percent) would be constructed adjacent to the existing KRGT pipeline using an atypical offset ranging between 25 and 200 feet. About 37.6 miles (5.2 percent) would deviate further but be constructed adjacent to various other existing rights-of-way. The remaining 9.8 miles (1.4 percent) would be constructed on newly created right-of-way that does not parallel existing rights-of-way. The location of the proposed pipeline in relation to adjacent existing rights-of-way is summarized in table C-1 (pages C-1 through C-15) in appendix C. The pipeline route would parallel or cross Los Angeles Department of Water and Power (LADWP) powerlines in several locations. KRGT would obtain the necessary easements and/or permits to cross or locate its facilities within LADWP rights-of-way.

The nominal construction right-of-way for the pipeline would be 75 feet wide for 36-inch-diameter pipe and 80 feet wide for 42-inch-diameter pipe. Additional right-of-way width would be required at certain feature crossings and areas requiring topsoil segregation and special construction techniques. KRGT has filed 45 right-of-way cross-sections that would be used along the proposed route. Ten of these cross-sections would be used for approximately 91 percent of the route (see figure 2.2.1-1, sheets 1 through 5 (pages 2-11 through 2-15)). KRGT's actual use of workspace (*e.g.*, spoil storage, equipment travel lane) within its construction right-of-way may vary within the total width of the construction right-of-way.

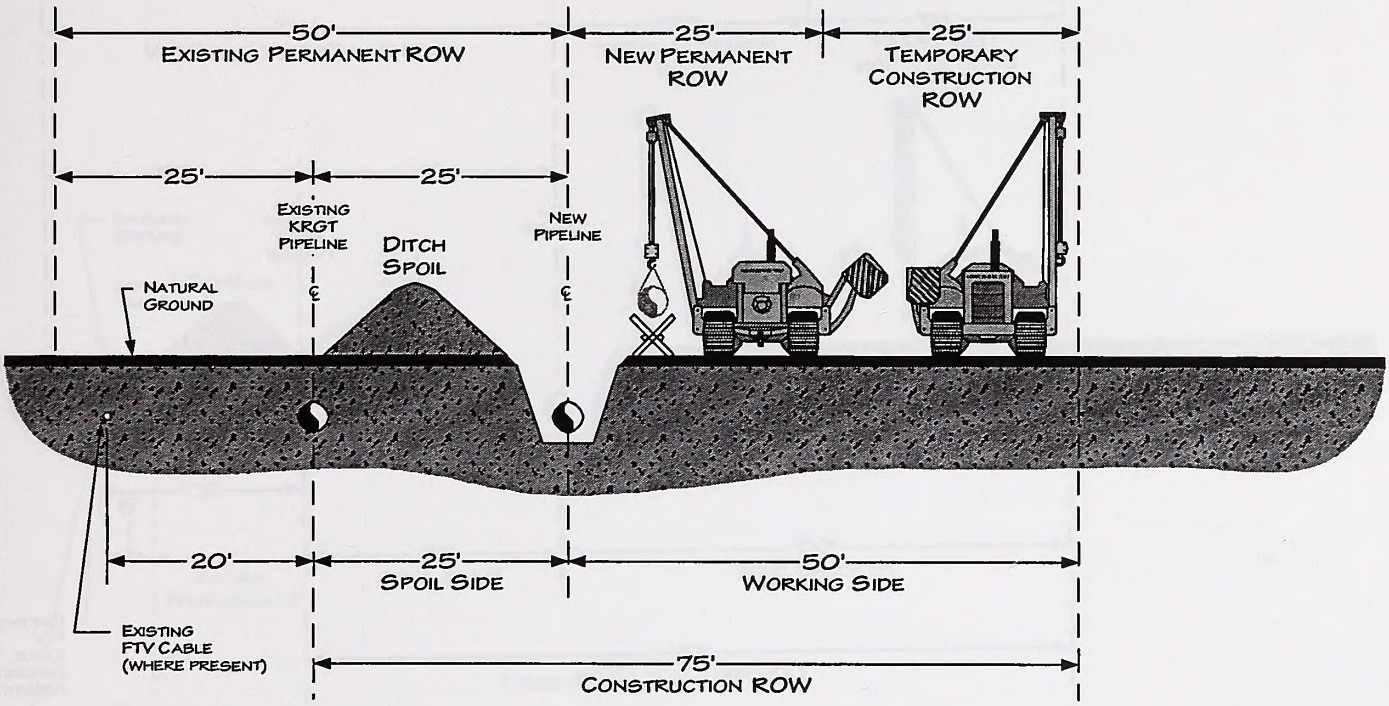
KRGT currently holds a 50-foot-wide permanent right-of-way for its existing pipeline under the previous authorization. Following construction of the proposed loops, KRGT would retain an additional 25-foot-wide new permanent right-of-way where the proposed pipeline is parallel to the existing pipeline. Where the proposed pipeline deviates from the existing pipeline right-of-way, KRGT would retain a 50-foot-wide new permanent right-of-way. These permanent rights-of-way configurations are shown on figure 2.2.1-1, sheets 1 through 5 (pages 2-11 through 2-15).

In addition to the construction right-of-way, KRGT has identified temporary extra workspaces that would be required for construction at waterbody, road, railroad, and utility crossings, as well as in areas of steep side slopes or other difficult terrain. Temporary extra workspace would also be required for topsoil segregation, at directional drill work sites, and near the beginning and end of each construction spread. The locations and sizes of the temporary extra workspaces identified by KRGT are listed in table D-1 (pages D-1 through D-43) in appendix D.

KRGT proposes to use existing roads to gain access to the right-of-way during construction. These access roads are primarily existing graveled and/or dirt roads that were utilized during installation of the existing KRGT pipeline and the KRGT/Mojave Common System facilities. Other roads constructed by public and private entities since completion of the previous projects would also be used if approved by the landowner. Modifications, including grading and widening, would be required to use some of these existing roads. The locations of the identified access roads and proposed modifications are listed in table D-2 (pages D-44 through D-61) in appendix D and shown on the facility location maps in appendix B.

Collocated and North or West of Existing KRGT Pipeline

36-Inch-Diameter Pipeline



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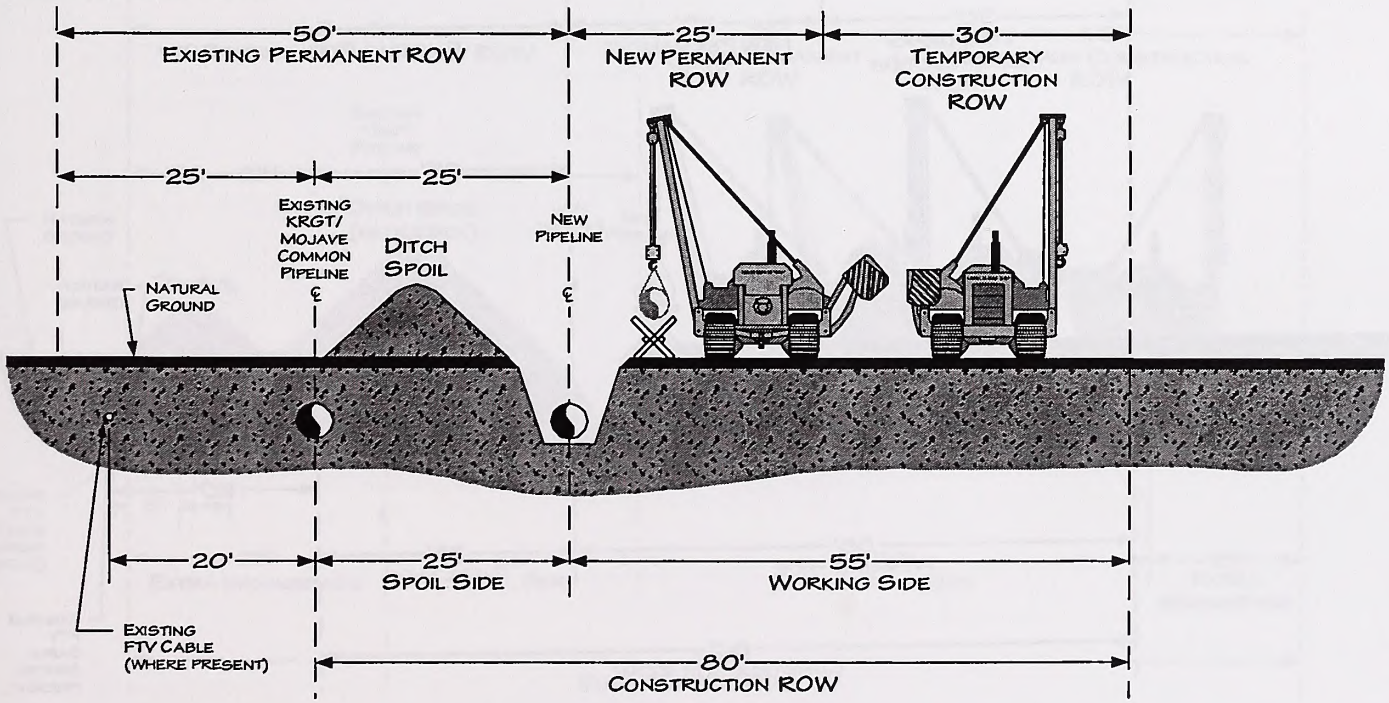
Collocated and North or West of Existing KRGT/Mojave Common System Pipeline

42-Inch-Diameter Pipeline



For environmental review purposes only.

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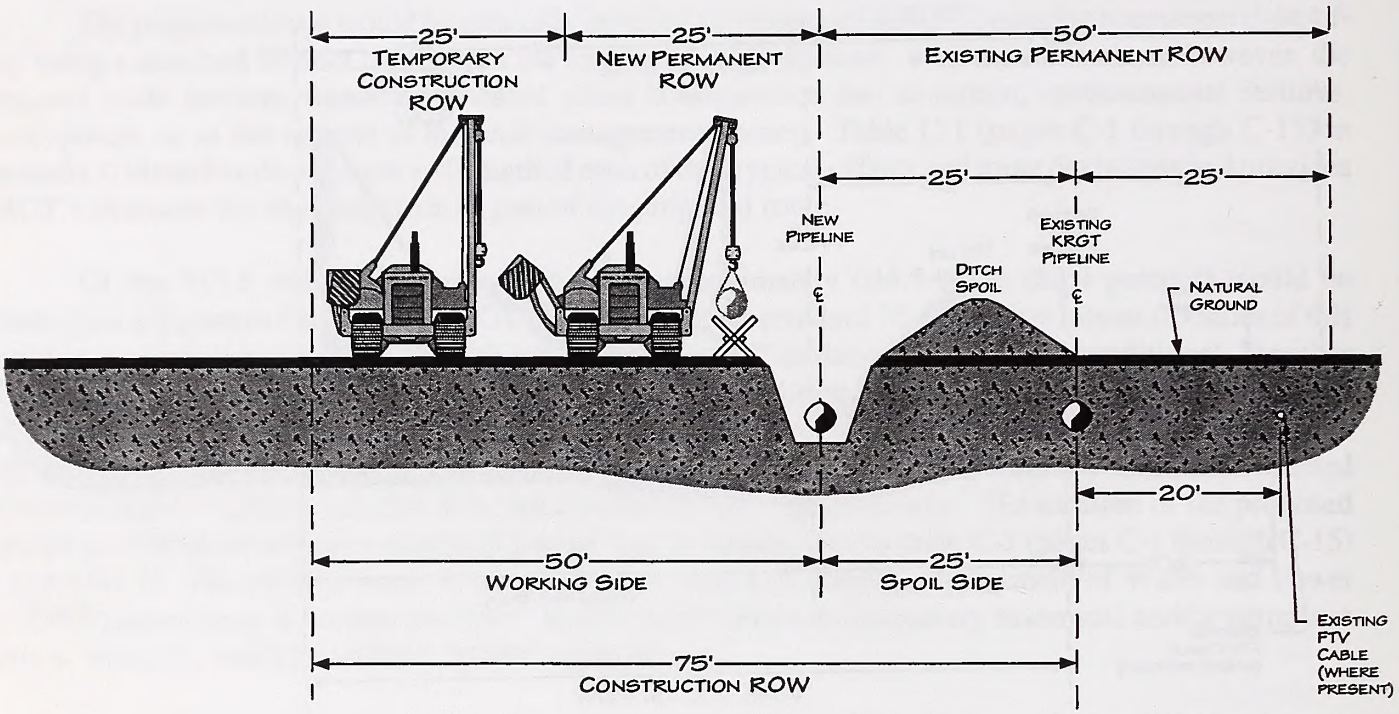
Figure 2.2.1-1
Kern River 2003 Expansion Project
Typical Right-of-Way Cross Sections

Sheet 1 of 5

Collocated and South or East of Existing KRGT Pipeline

36-Inch-Diameter Pipeline



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Collocated and South or East of Existing KRGT/Mojave Common System Pipeline (optional)

42-Inch-Diameter Pipeline

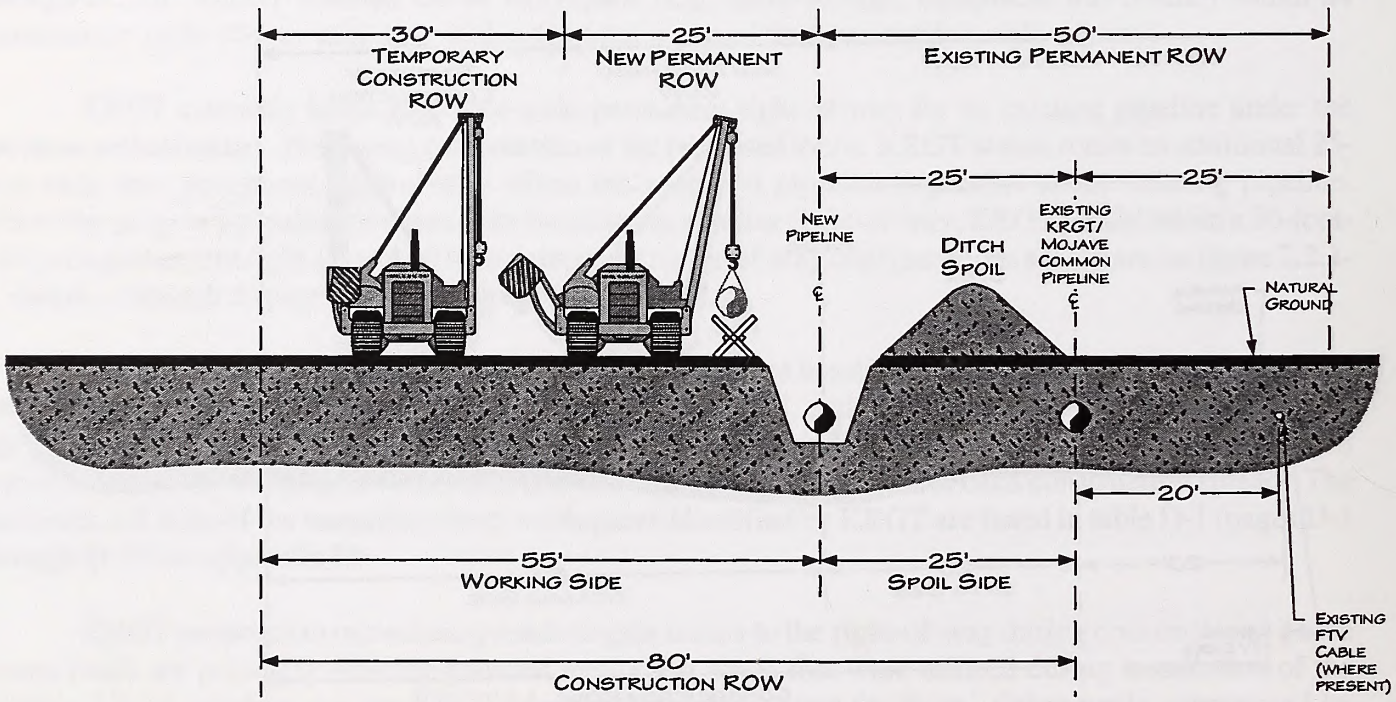

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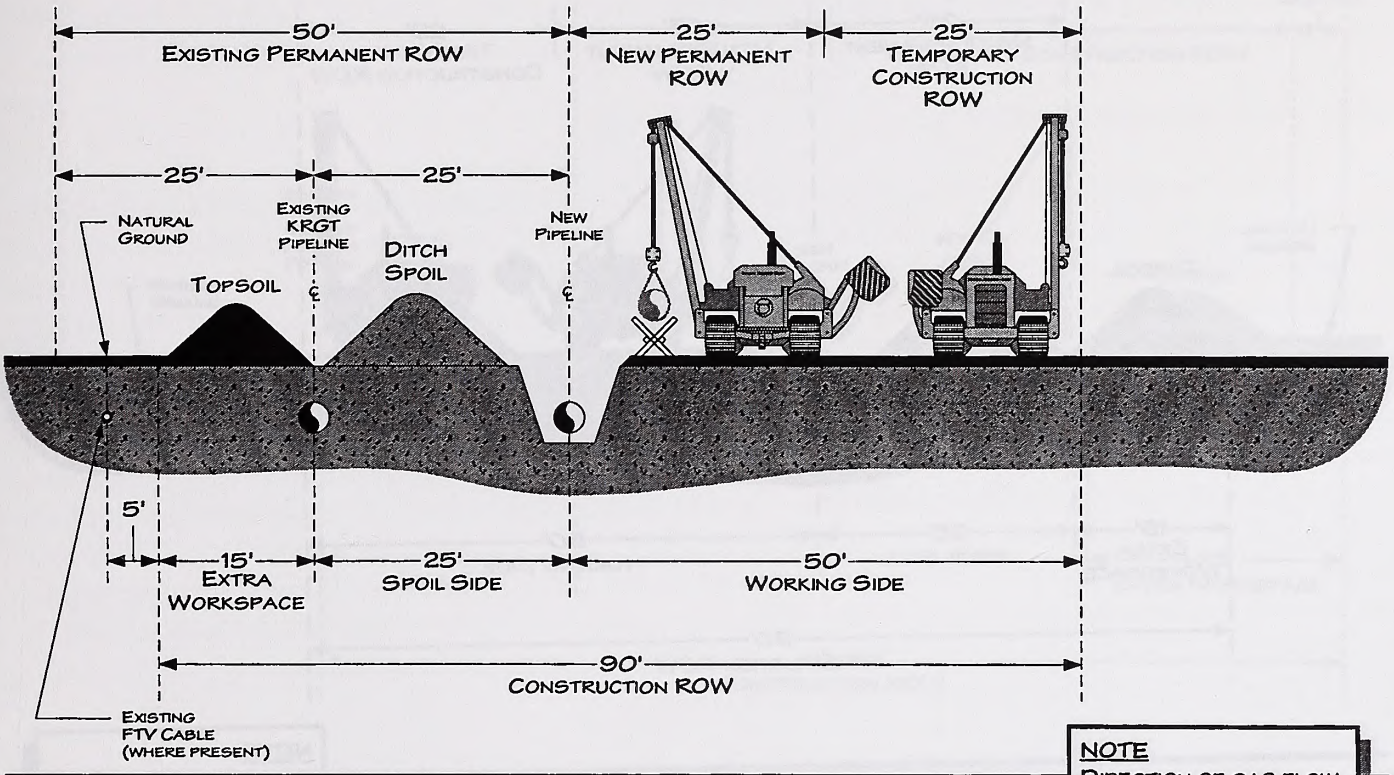
Figure 2.2.1-1
Kern River 2003 Expansion Project
Typical Right-of-Way Cross Sections

Sheet 2 of 5

Collocated and North or West of Existing KRGT Pipeline

Ditch and Spoil Side Topsoil Segregation

36-Inch-Diameter Pipeline



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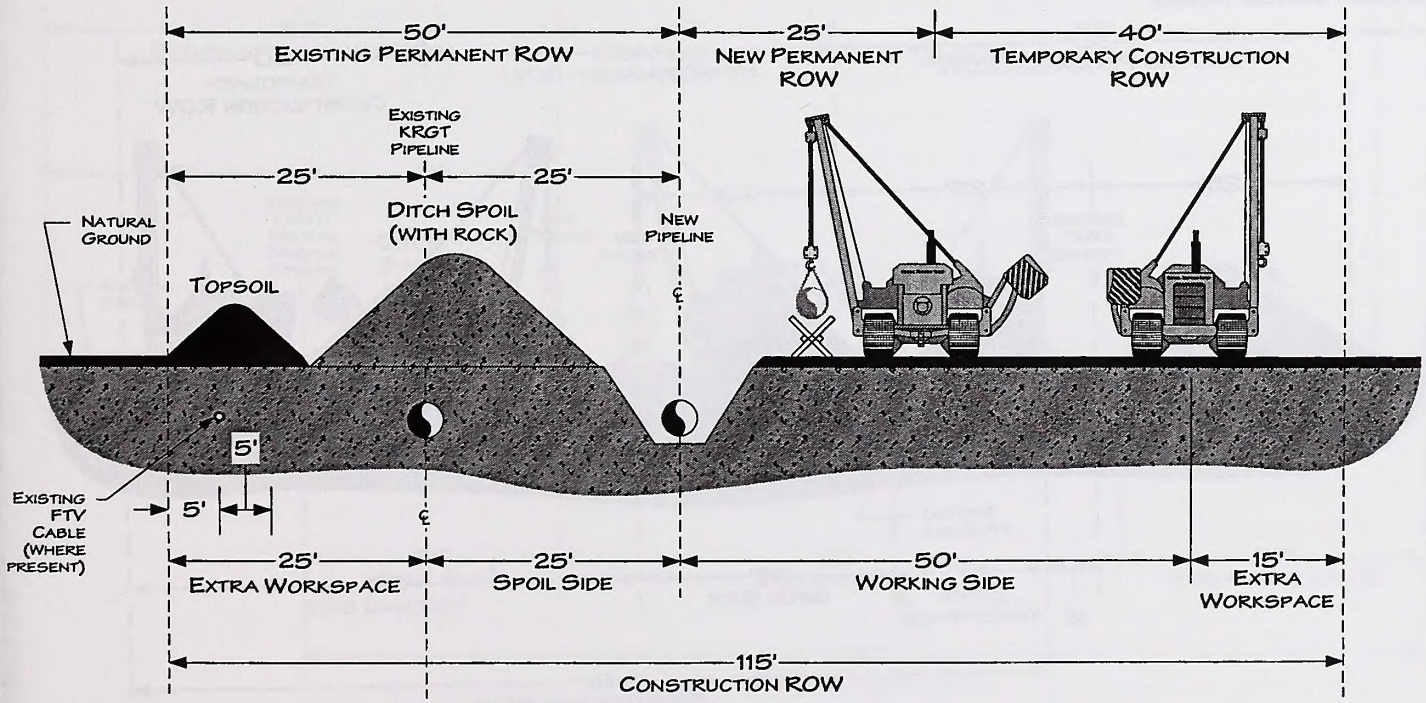
Collocated and North or West of Existing KRGT Pipeline

Ditch and Spoil Side Topsoil Segregation where Rock Excavation is Required

36-Inch-Diameter Pipeline



For environmental review purposes only.

Figure 2.2.1-1

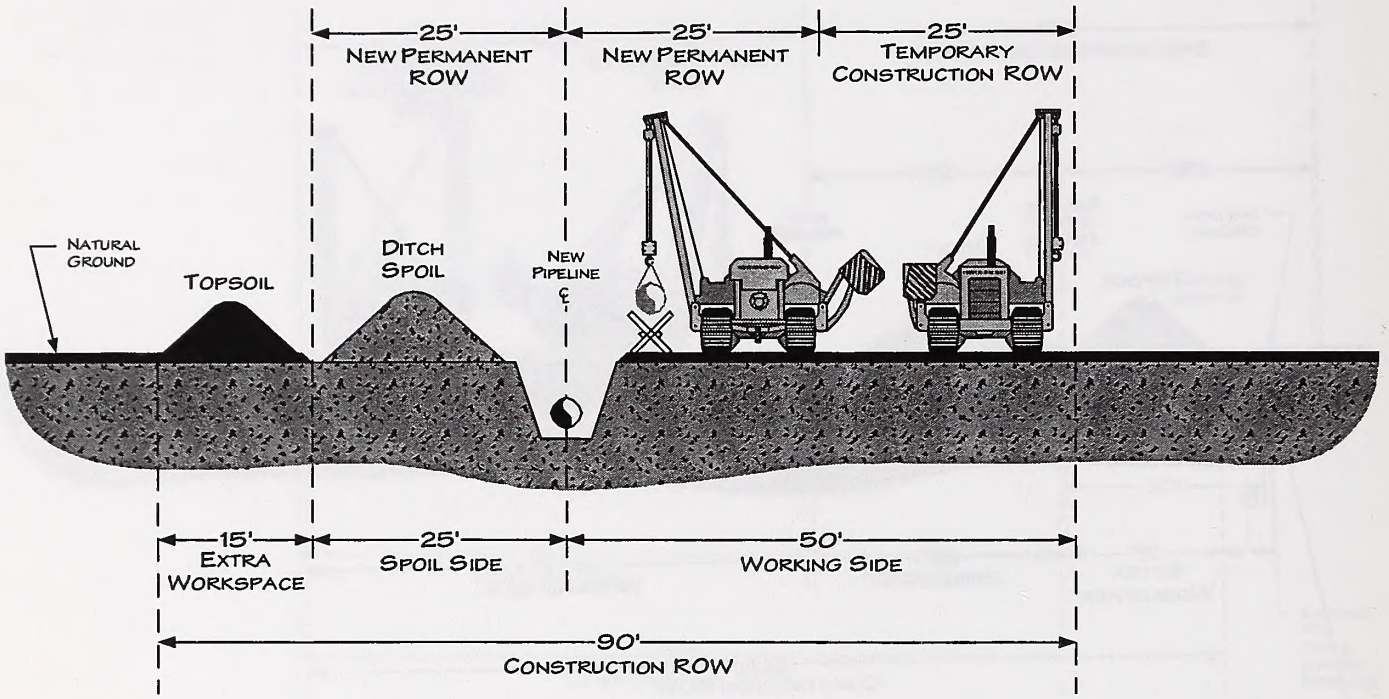
Kern River 2003 Expansion Project

Typical Right-of-Way Cross Sections

Sheet 3 of 5

Pull-out Section with Ditch and Spoil Side Topsoil Segregation

36-Inch-Diameter Pipeline



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Collocated with Existing KRGT Pipeline Ditch and Spoil Side Topsoil Segregation (FTV cable between existing and new pipeline)

36-Inch-Diameter Pipeline

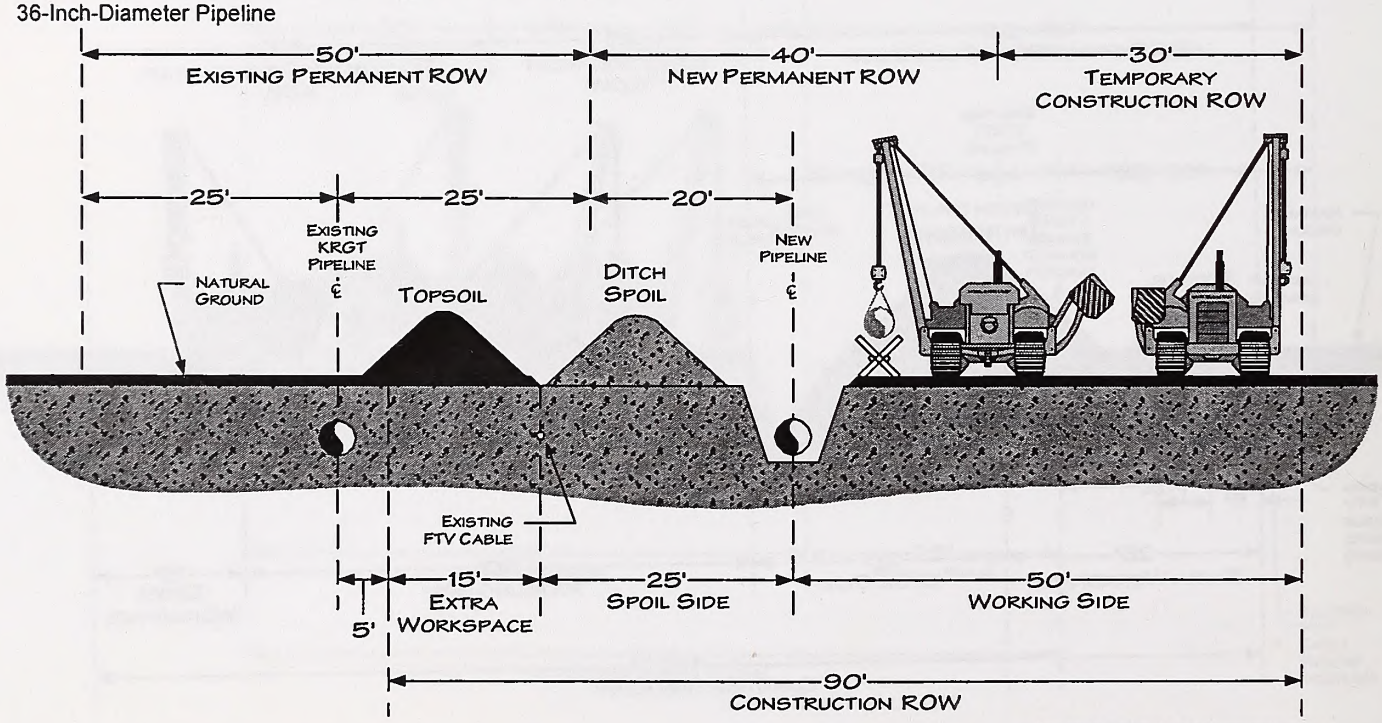

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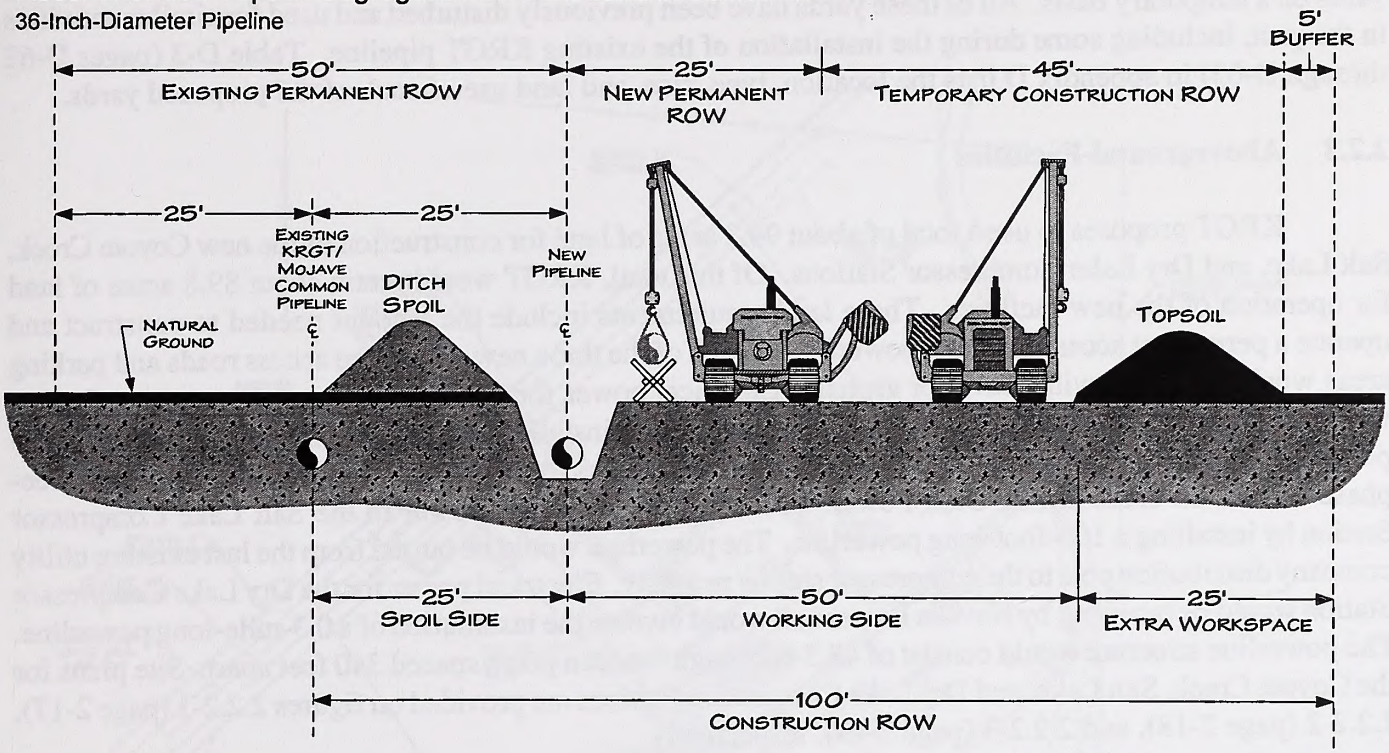
Figure 2.2.1-1
Kern River 2003 Expansion Project
Typical Right-of-Way Cross Sections

Sheet 4 of 5

Collocated with Existing KRGT/Mojave Common System Pipeline

Recommended Topsoil Segregation on BLM Land in California

36-Inch-Diameter Pipeline



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Collocated with Existing KRGT/Mojave Common System Pipeline

Recommended Topsoil Segregation on BLM Land in California

42-Inch-Diameter Pipeline

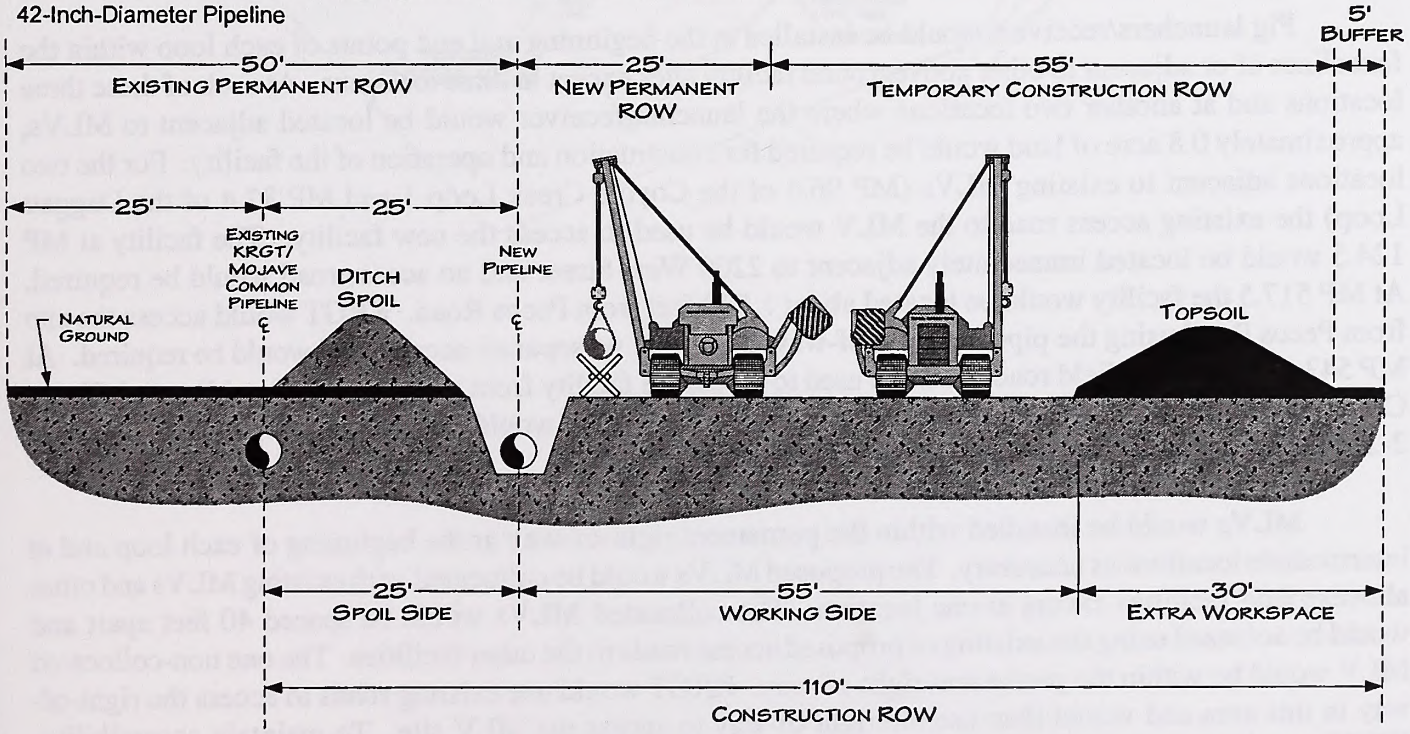

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Figure 2.2.1-1
Kern River 2003 Expansion Project
Typical Right-of-Way Cross Sections

Sheet 5 of 5

To support construction activities, KRGT proposes to use 34 contractor, pipe storage, and offloading yards on a temporary basis. All of these yards have been previously disturbed and used for similar activities in the past, including some during the installation of the existing KRGT pipeline. Table D-3 (pages D-62 through D-63) in appendix D lists the location, type, size, and land use of each of the proposed yards.

2.2.2 Aboveground Facilities

KRGT proposes to use a total of about 94.3 acres of land for construction of the new Coyote Creek, Salt Lake, and Dry Lake Compressor Stations. Of this total, KRGT would retain about 89.8 acres of land for operation of the new facilities. These land requirements include the amount needed to construct and operate a permanent access road and powerline to each of the three new sites. The access roads and parking areas would be paved with gravel or asphalt. Electrical power for the Coyote Creek Compressor Station would be provided by Pacific Power and would involve the installation of a 1.3-mile-long powerline. The powerline structure would consist of 40-foot-high wooden poles located 300 feet apart and supporting three-phase service on cross arms. Utah Power would provide electrical power to the Salt Lake Compressor Station by installing a 100-foot-long powerline. The powerline would be buried from the last existing utility company distribution pole to the compressor station property. Electrical power for the Dry Lake Compressor Station would be provided by Nevada Power and would involve the installation of a 0.3-mile-long powerline. The powerline structure would consist of 48.5-foot-high wooden poles spaced 340 feet apart. Site plans for the Coyote Creek, Salt Lake, and Dry Lake Compressor Stations are provided on figures 2.2.2-1 (page 2-17), 2.2.2-2 (page 2-18), and 2.2.2-3 (page 2-19), respectively.

The modifications to the existing compressor and meter stations would be constructed within the existing facility sites, except for a 4-acre extra workspace that would be temporarily needed for the Veyo Compressor Station modification.

Pig launchers/receivers would be installed at the beginning and end points of each loop within the fencelines of or adjacent to other aboveground facility sites except in three locations. At each of these three locations and at another two locations where the launcher/receiver would be located adjacent to MLVs, approximately 0.8 acre of land would be required for construction and operation of the facility. For the two locations adjacent to existing MLVs (MP 96.4 of the Coyote Creek Loop 1 and MP 82.4 of the Daggett Loop) the existing access road to the MLV would be used to access the new facility. The facility at MP 124.5 would be located immediately adjacent to 2200 West Street and no access road would be required. At MP 517.5 the facility would be located about 1,500 feet from Pecos Road. KRGT would access the site from Pecos Road using the pipeline right-of-way; therefore, no separate access road would be required. At MP 543.6, an existing field road would be used to access the facility from a nearby paved public road (Town Center Boulevard). No access road modifications to this facility would be required. Figure 2.2.2-4 (page 2-20) shows a typical pig launcher/receiver facility site plan.

MLVs would be installed within the permanent right-of-way at the beginning of each loop and at intermediate locations as necessary. The proposed MLVs would be collocated with existing MLVs and other aboveground facilities except at one location. The collocated MLVs would be spaced 40 feet apart and would be accessed using the existing or proposed access roads to the other facilities. The one non-collocated MLV would be within the permanent right-of-way. KRGT would use existing roads to access the right-of-way in this area and would then use the right-of-way to access the MLV site. To maintain accessibility, KRGT would install an approximately 12-foot-wide and 600-foot-long gravel road within the permanent right-of-way. Figure 2.2.2-5 (page 2-21) shows a typical MLV site plan.

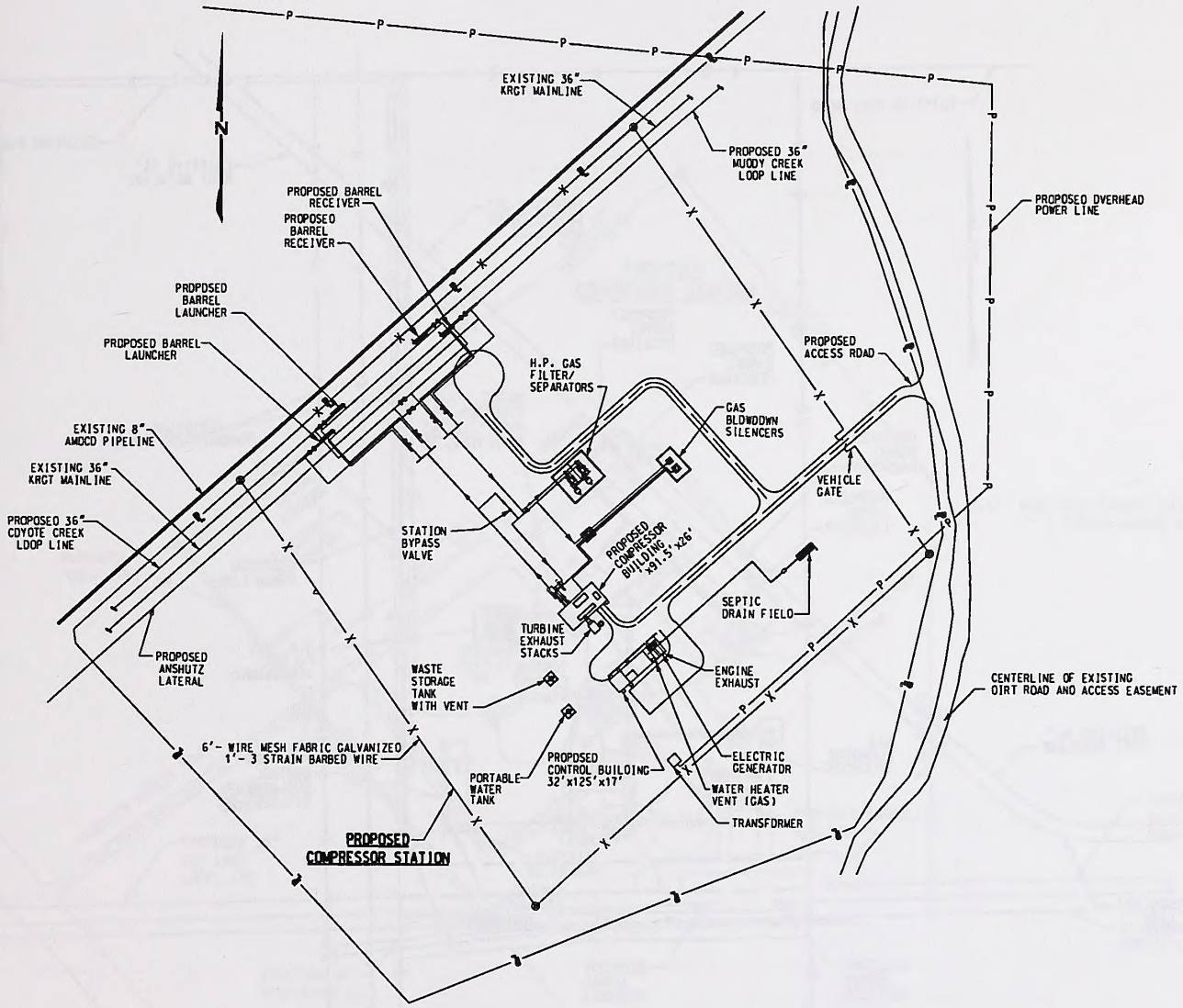

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Figure 2.2.2-1
Kern River 2003 Expansion Project
Coyote Creek Compressor Station Site Plan

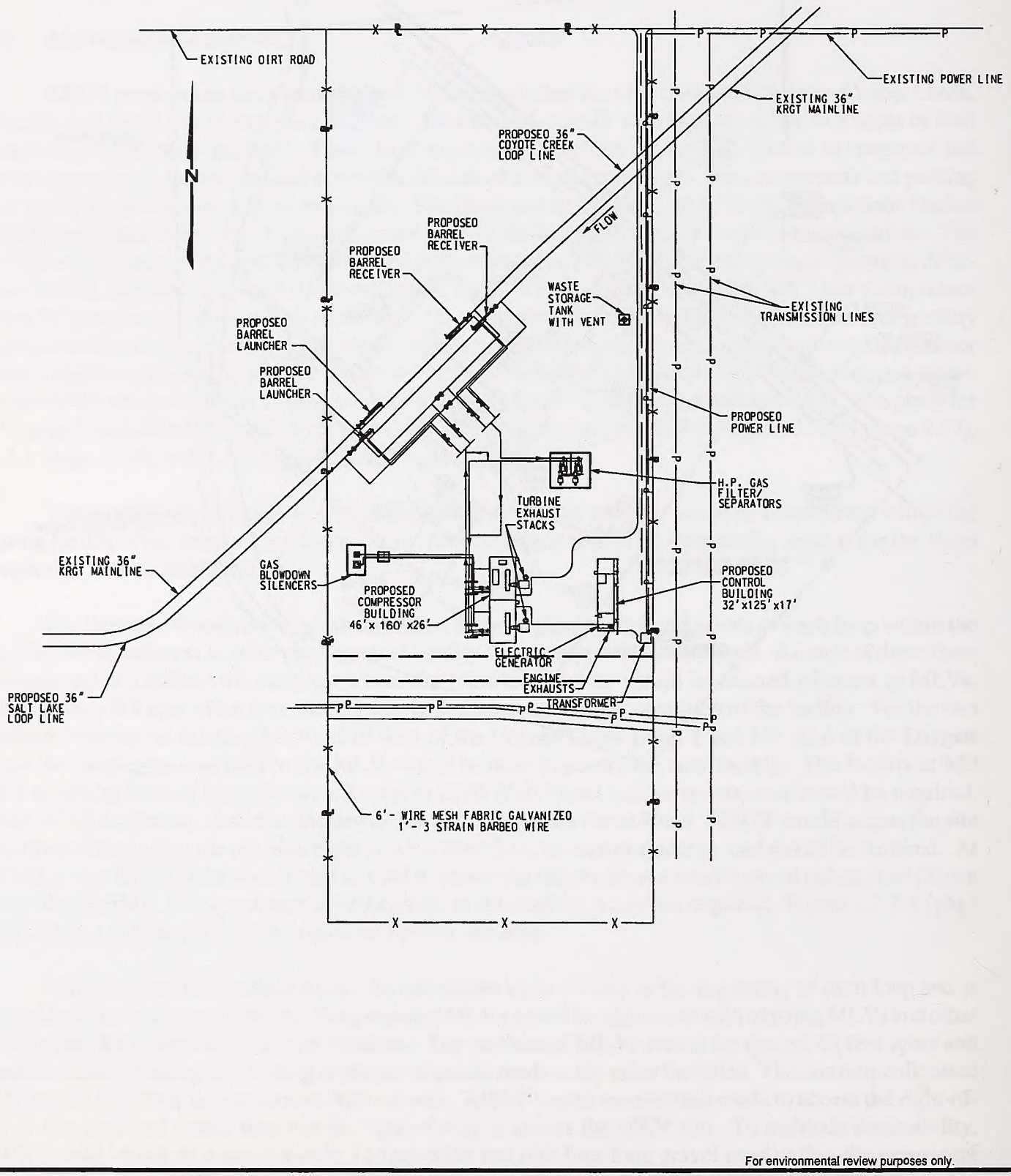

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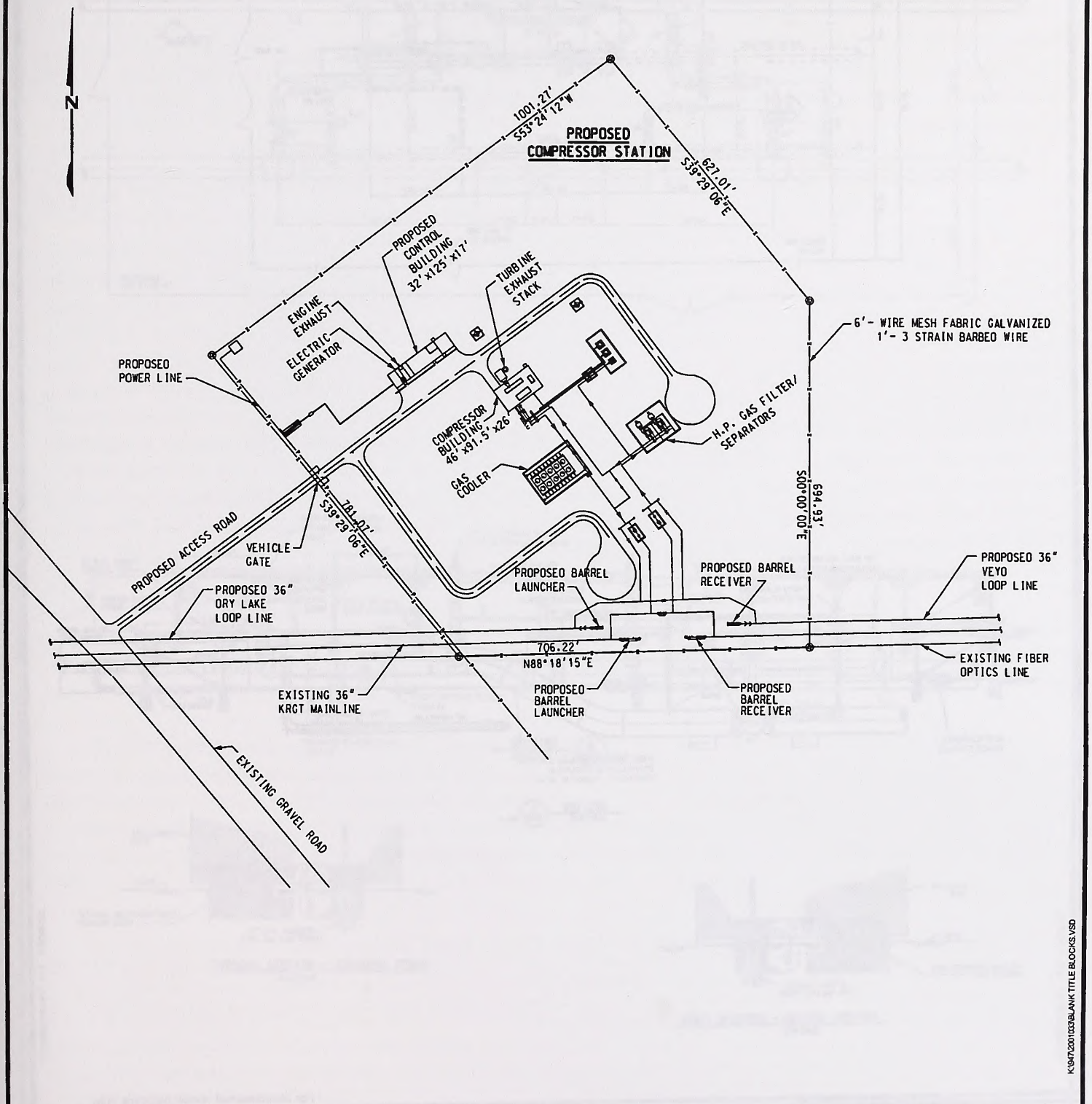
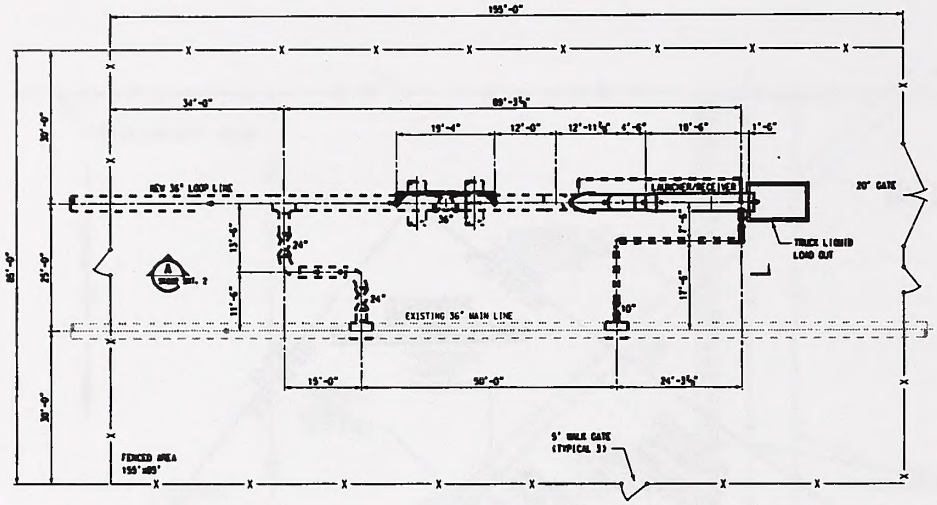
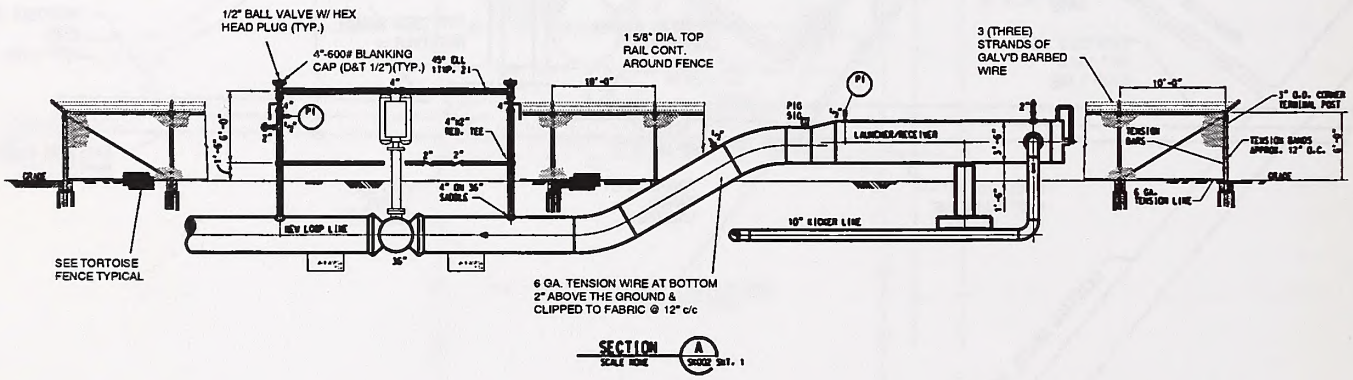
Figure 2.2.2-2
Kern River 2003 Expansion Project
Salt Lake Compressor Station Site Plan

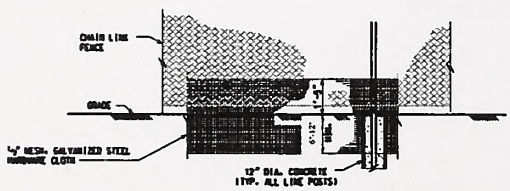


For environmental review purposes only.

Figure 2.2.2-3
Kern River 2003 Expansion Project
Dry Lake Compressor Station Site Plan







TYPICAL SECTION - TORTOISE FENCE

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For environmental review purposes only.

Figure 2.2.2-4
Kern River 2003 Expansion Project
Typical Pig Launcher/Receiver Site Plan

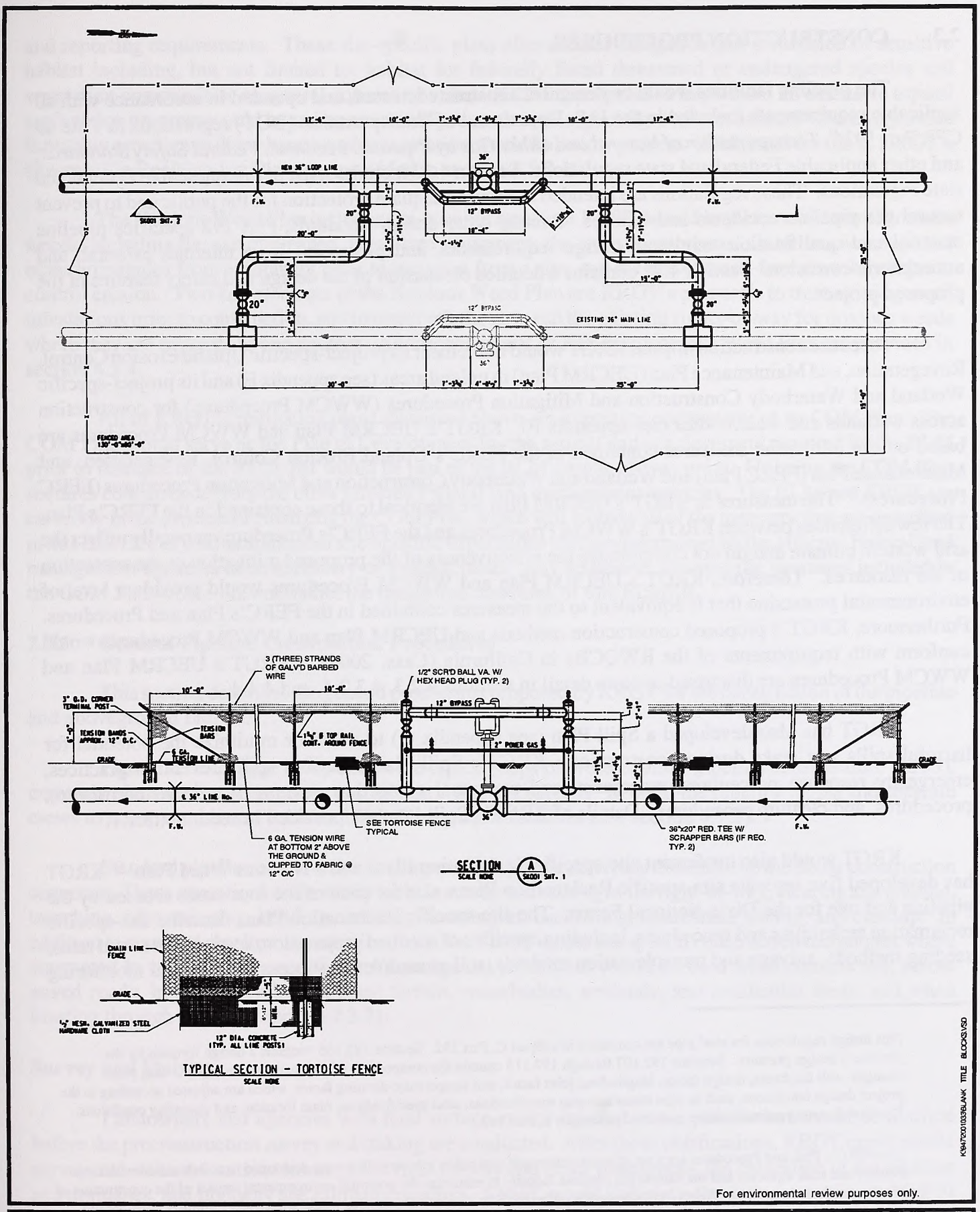

Figure 2.2.2-5
Kern River 2003 Expansion Project
Typical Mainline Valve Site Plan

2.3 CONSTRUCTION PROCEDURES

The pipeline facilities would be designed, constructed, tested, and operated in accordance with all applicable requirements included in the U.S. Department of Transportation (DOT) regulations in Title 49 CFR Part 192 [4/], *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*; and other applicable Federal and state regulations. Section 4.12 includes a list of the applicable Federal and state regulations. These regulations are intended to ensure adequate protection for the public and to prevent natural gas pipeline accidents and failures. Among other design standards, Part 192 specifies pipeline material and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion. Section 4.12 contains a detailed discussion of the design and safety features of the proposed project.

To reduce construction impact, KRGT would implement its project-specific Upland Erosion Control, Revegetation, and Maintenance Plan (UECRM Plan) in upland areas (see appendix E) and its project-specific Wetland and Waterbody Construction and Mitigation Procedures (WWCM Procedures) for construction across wetlands and waterbodies (see appendix F). KRGT's UECRM Plan and WWCM Procedures are based on the mitigation measures contained in the FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (FERC Plan) and Wetland and Waterbody Construction and Mitigation Procedures (FERC Procedures).[5/] The measures in KRGT's UECRM Plan are identical to those contained in the FERC's Plan. The few differences between KRGT's WWCM Procedures and the FERC's Procedures generally reflect the arid western climate and do not compromise the effectiveness of the proposed mitigation or the protection of the resources. Therefore, KRGT's UECRM Plan and WWCM Procedures would provide a level of environmental protection that is equivalent to the measures contained in the FERC's Plan and Procedures. Furthermore, KRGT's proposed construction methods and UECRM Plan and WWCM Procedures would conform with requirements of the RWQCBs in California (Cass, 2002). KRGT's UECRM Plan and WWCM Procedures are discussed in more detail in sections 4.2.3, 4.3.2.4, and 4.4.4.

KRGT has also developed a Spill Plan (see appendix G) to avoid or minimize the potential for harmful spills and leaks during construction. KRGT's Spill Plan describes spill prevention practices, emergency response procedures, emergency and personnel protection equipment, release notification procedures, and cleanup procedures. Details of KRGT's Spill Plan are provided in section 4.3.1.1.

KRGT would also implement site-specific Reclamation Plans and a Noxious Weed Plan.[6/] KRGT has developed five separate site-specific Reclamation Plans, one for each of the four states crossed by the pipeline and one for the Dixie National Forest. The site-specific Reclamation Plans describe site-specific reclamation techniques and procedures, including specifics of seedbed preparation, seed mixtures and rates, seeding methods, salvage and transplantation methods, soil amendments, success criteria, and monitoring

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4/ Pipe design regulations for steel pipe are contained in subpart C, Part 192. Section 192.105 contains a design formula for the pipeline's design pressure. Sections 192.107 through 192.115 contain the components of the design formula, including yield strength, wall thickness, design factor, longitudinal joint factor, and temperature derating factor, which are adjusted according to the project design conditions, such as pipe manufacturing specifications, steel specifications, class location, and operating conditions. Pipeline operating regulations are contained in subpart L, Part 192.

5/ The FERC's Plan and Procedures are a set of construction and mitigation measures that were developed in collaboration with other Federal and state agencies and the natural gas pipeline industry to minimize the potential environmental impact of the construction of pipeline projects in general. Proper implementation of the FERC's Plan and Procedures would adequately minimize construction-related impacts on soil, waterbodies, and wetlands.

6/ With the exception of the California Reclamation Plan (see appendix V), these plans are too voluminous to include in this EIS/EIR. These plans are discussed in this EIS/EIR and are available for viewing in their entirety on the project Internet web site (http://www.kernriver2003.com).

and reporting requirements. These site-specific plans also address mitigation and restoration of sensitive habitat including, but not limited to, habitat for federally listed threatened or endangered species and vegetation communities of special concern or value. KRGT's proposal to implement an extensive topsoil segregation program would be an important mitigation element especially in desert habitats where vegetation is notably sensitive to disturbance, and revegetation would be a slow process. Additional details of KRGT's site-specific Reclamation Plans are provided in section 4.5.2.1.

The Noxious Weed Plan includes site-specific measures KRGT would implement to control noxious weeds, including the use of cleaned, weed-free equipment; the use of compressed air to remove seeds and other propagules from equipment prior to transport from a site; and the use of weed-free straw/hay bales to control erosion. Two key elements of the Noxious Weed Plan are KRGT's proposals to treat existing weed infestations prior to construction, and to treat both the new and the existing rights-of-way for noxious weeds where they are adjacent to one another. Additional details of KRGT's Noxious Weed Plan are provided in section 4.5.4.

All of KRGT's mitigation plans discussed above are important components of its COM Plan. The COM Plan would serve as the Plan of Development for the project and is a document required by the BLM prior to issuance of the ROD that would be part of the BLM's right-of-way grant. Utilizing the COM Plan requires concurrence from the other affected Federal land management agencies. The BLM and KRGT are currently in the process of finalizing the COM Plan, which will include all of the measures that are described in this EIS/EIR as well as additional site-specific stipulations that are determined by the affected Federal land management agencies to be necessary on Federal lands. Any additional site-specific measures included in the COM Plan would not contradict the mitigation measures of this EIS/EIR.

2.3.1 General Pipeline Construction Procedures

This section describes the general procedures proposed by KRGT for the construction of the pipeline and aboveground facilities.

Figure 2.3.1-1 (page 2-24) shows the typical steps of cross-country pipeline construction. KRGT currently plans to use 10 general construction crews or "spreads" to build the pipeline loops, and separate crews to construct the new and modified aboveground facilities (see section 4.9.2).

Standard pipeline construction is composed of specific activities that make up the linear construction sequence. These operations collectively include survey and staking of the right-of-way, clearing and grading, trenching, pipe stringing, bending, welding, lowering-in, backfilling, hydrostatic testing, and cleanup. In addition to standard pipeline construction methods, KRGT would use special construction techniques where warranted by site-specific conditions. These special techniques would be used when constructing across paved roads, highways, railroads, steep terrain, waterbodies, wetlands, and residential areas, and when blasting through rock (see section 2.3.2).

Survey and Staking

Landowners and agencies with land surface and/or mineral estate jurisdiction would be notified before the preconstruction survey and staking are conducted. After these notifications, KRGT crews would survey and stake the outside limits of the right-of-way and extra workspaces, the centerline of the pipeline and drainages, and highway and railroad crossings. KRGT would also stake the entrance to access roads at the intersection with other public or private roads to indicate that the road is an approved access road. Pull-out areas along the access roads and areas requiring modification (see table D-2 (pages D-44 through D-61) in appendix D) would also be staked. Existing utility lines would be located and marked with flags, stakes, or other devices to prevent accidental damage during pipeline construction.

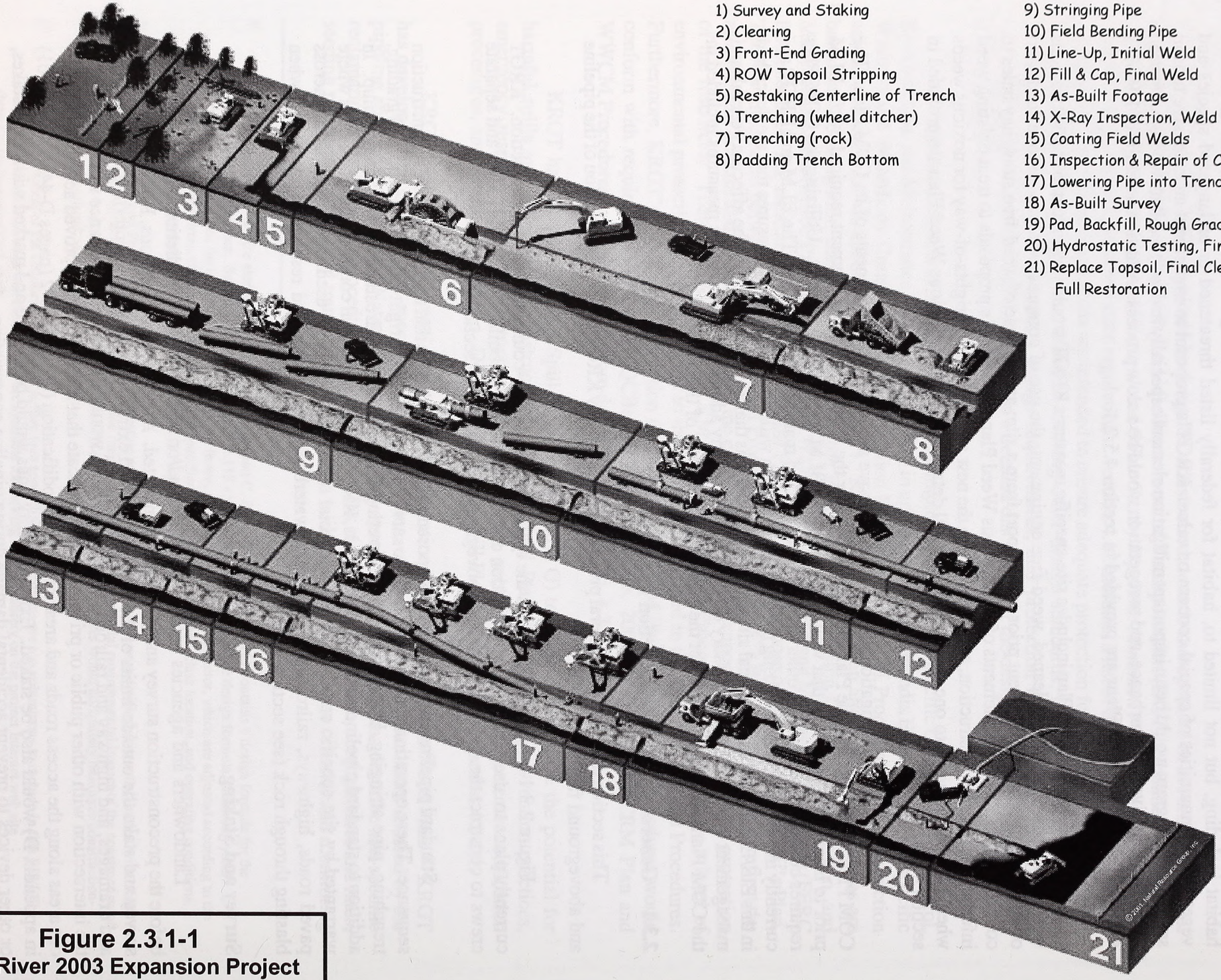

Figure 2.3.1-1
Kern River 2003 Expansion Project
Typical Pipeline Construction Sequence

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Clearing and Grading

Fences would be cut before clearing and grading are conducted to provide access for equipment. Before any fence is cut, landowners would be notified and the fence would be braced and secured to prevent the slacking of wires. Temporary gates would be installed across openings to control livestock and limit public access. Temporary fencing would also be installed in any areas where construction activities remove natural barriers that act as livestock controls.

A clearing crew would follow the fencing crew and would remove large obstacles such as trees, logs, brush, and rocks from the right-of-way (staying within the authorized work areas). Timber and other vegetative debris may be chipped or stored along the edge of the construction right-of-way for later use as an erosion control mulch, or may by disposed of in some other manner consistent with local regulations and landowner or agency requirements. Grading would be conducted where necessary to provide a reasonably level surface for the operation and passage of heavy construction equipment. In level areas where grading or trenching is not required, rootstock would be left in the ground. Up to 12 inches of topsoil would be stripped from the full right-of-way or trench and spoil storage area in agricultural areas, residential areas, and selected pastures and rangelands. On BLM lands in California, topsoil would be stripped from the trench and working side of the right-of-way. Topsoil would be stored in piles and segregated from the trench spoil, to be replaced after construction is completed. To protect topsoil from wind erosion, KRGT would apply water and/or a non-toxic organic tackifier in areas highly susceptible to wind erosion and in other areas where soil conditions warrant (see section 4.2.3.1 for additional details of topsoil segregation).

Trenching

The trench would be excavated by rotary trenching machines, track-mounted backhoes, or other similar equipment to a depth sufficient to provide a minimum of 3 feet of cover over the pipeline after backfilling. Typically, the trench would be a minimum of about 7 feet deep (to allow for about 3 feet of cover) and about 4 to 6 feet wide in stable soils and rock. In sandy soils, the trench could be considerably wider because the walls could cave or slough. Soft plugs (areas where the trench is excavated and replaced with minimal compaction) with ramps on either side would be left at all well-defined livestock and wildlife trails and at maximum 1-mile intervals to allow access across the trench and provide a means of escape for livestock, wildlife, and reptiles that may fall into the trench.

Based on its experience during construction of its existing pipeline, KRGT anticipates that bedrock would be encountered in shallow soils. Rock that is within trench depths would be removed by conventional excavation equipment or other mechanical rock trenching methods. In areas where mechanical equipment cannot break up and loosen the bedrock, blasting would be required (see additional discussion of blasting in section 2.3.2). Excavated rock may be used to backfill the trench to the top of the existing bedrock profile. Caliche fragments would be buried in the trench to the top of the existing caliche profile only or hauled off to an approved landfill. Large rock that is not suitable for use as backfill material would be either scattered across the work area or used for natural barriers on restored areas with the landowner's or land management agency's permission or hauled off the right-of-way and disposed of in an area approved by the appropriate landowner or agency.

Pipe Stringing, Bending, and Welding

Following trenching, sections of the externally coated pipe up to 80 feet long would be transported over public road networks and approved access roads on private and public lands to the right-of-way by truck and placed or "strung" along the trench in a continuous line. (The access roads from public roads are shown on the facility location maps in appendix B.) Individual sections of pipe would be bent where necessary by

a hydraulic bending machine to fit the contours of the trench. The individual sections of pipe would then be aligned, welded together into long strings, and placed on temporary supports along the edge of the trench. Only welders qualified according to applicable American Welding Society, American Society of Mechanical Engineers, and American Petroleum Institute standards would be permitted to perform the welding. All welds would be visually inspected and tested using radiographic (x-ray) or other non-destructive and approved testing methods in accordance with American Petroleum Institute standards to ensure structural integrity and compliance with the applicable DOT regulations. Welds that do not meet established specifications would be repaired or removed. Once the welds are approved, the welded joints would be coated with a protective epoxy coating, and the entire pipeline would be electronically inspected, or "jeeped," for faults or voids in the epoxy coating, and visually inspected for any faults, scratches, or other coating defects. Damage to the coating would be repaired before the pipeline is lowered in.

Lowering-in and Backfilling

Before the pipeline is lowered in, the trench would be inspected to be sure no wildlife or reptiles had become trapped in the trench, and to check for water, as well as to ensure that it is free of rocks and other debris that could damage the pipe or pipe coating. Dewatering may be necessary where water has accumulated in the trench. Where dewatering is required, water would be pumped from the trench into stable upland areas through filter bags. In areas of rock, padding material such as sand, sandbags, or screened soil would be placed in the bottom of the trench. The pipeline would be lowered into the trench, and trench breakers (compacted sacks of sand) would be installed on slopes at specified intervals to prevent water movement along the pipeline. The trench would then be backfilled using the excavated materials. If the excavated material is rocky, the pipeline would be protected with a rock shield (fabric or screen that is wrapped around the pipe to protect the pipe from damage by rocks, stones, roots, and other debris) or other protective covering to prevent damage to the pipe and pipe coating and/or would be covered with a more suitable fill obtained either from a local, existing commercial borrow area or by separating suitable material from the existing trench spoil. No topsoil would be used as padding material.

Hydrostatic Testing

The pipeline would be hydrostatically tested in sections according to KRGT's permits and DOT specifications (Title 49 CFR Part 192) with water obtained either from surface waters or groundwater wells. Table 4.3.2-4 (page 4-62) lists the proposed sources and estimated volumes of water that would be used. No chemicals would be added to the test water. Test water would be pumped into the first test section, pressurized to design test pressure (90 to 105 percent of maximum yield strength for the pipe size and thickness), and maintained at that pressure for 8 hours. The design test pressures would range from 125 to 180 percent of the MAOP. If leaks are found, the leaks would be repaired, and the section of pipe would be retested until specifications are met. Test water would not be discharged directly into surface waters unless authorized or required by KRGT's National Pollutant Discharge Elimination System (NPDES) permits. After testing, the water would be either pumped into the next test section or discharged onto the ground within the construction right-of-way. Energy dissipation devices and hay bale filters or sediment bags would be employed as necessary to minimize erosion. If approvals to discharge the water to the ground cannot be obtained, KRGT would pump the water into water trucks and haul it to an approved disposal location. Additional discussion of hydrostatic testing is provided in section 4.3.2.10; applicable permits are listed in table 1.6-1 (page 1-21).

Cleanup

During cleanup, remaining construction debris on the right-of-way would be disposed of and work areas would be final graded and restored to preconstruction contours as closely as possible. To compensate

for future settling, a berm of soil approximately the width of the trench and 1 foot high would be left over the backfilled trench. Segregated topsoil would be spread over the surface of the right-of-way and permanent surface erosion controls would be installed. KRGT's UECRM Plan includes a measure to make every effort to complete final cleanup of each area within 10 days after backfilling the trench in that area. However, final cleanup includes seedbed preparation and seeding. Revegetation activities would be done in accordance with the prescribed dates in the site-specific Reclamation Plans (see section 4.5.2.1). Until final cleanup can be conducted, KRGT would install and maintain temporary erosion controls as specified in its UECRM Plan (see appendix E). Private and public property, such as fences, gates, driveways, and roads disturbed by construction would be restored to their original or better condition.

Access roads that are damaged would be graded and restored in a manner similar to their preconstruction condition, unless the property owner requests otherwise, and any requested modifications do not require prior local government approval.

After completion of construction and hydrostatic testing, the pipeline would be cleaned and dried using mechanical tools (pigs) that are propelled through the pipeline with compressed air. Once cleaned, dried, and purged of air, the pipeline would be packed (filled) with natural gas. Pipeline markers and/or warning signs would be installed along the pipeline centerline at line-of-sight intervals to identify the location of the pipe.

2.3.2 Special Construction Techniques

Construction across paved roads, highways, railroads, steep terrain, waterbodies, wetlands, and residential areas, and blasting through rock may require special construction techniques. These are described in general below. Applicable permits are listed in table 1.6-1 (page 1-21). Construction through special management areas such as the Red Rock Canyon NCA and Spring Mountains NRA is discussed in section 4.8.6.1.

Road, Highway, and Railroad Crossings

Construction across paved and unpaved roads, highways, and railroads would be in accordance with the requirements of KRGT's road and railroad crossing permits and approvals. The depth of cover over the pipeline at roads and railroads would be at least 5 feet.

Railroads and major paved roads generally would be crossed by boring underneath the road or railroad. Boring requires the excavation of a pit about 120 to 130 feet long, 10 feet wide at the bottom and 24 feet wide at the top, and 12 feet in depth on the entry side of the feature to be crossed, the installation of boring equipment, and the boring of a hole under the road at least equal to the diameter of the pipe. On the outlet end of the bore, a pit is required that is approximately 10 feet wide, 20 feet long, and the depth of the pipeline trench to tie-in the pipeline. Table D-1 (pages D-1 through D-43) in appendix D lists the dimensions of the temporary workspaces. The pipe section would be pushed through the borehole. For long crossings, additional pipe sections may be required. These additional sections usually would be welded to the first section of pipe in the bore pit before being pushed through the borehole. There would be little or no disruption of traffic at road or railroad crossings that are bored.

Most smaller, unpaved roads and drives would be open cut. The open-cut method would require temporary closure of the road to traffic and establishment of detours. If no reasonable detour is feasible, at least one lane of the road being crossed would be kept open for traffic except during brief periods when it is essential to close the road to install the pipeline. Most open-cut road crossings would be completed in 1 day. KRGT would take measures at open-cut crossings to ensure safety and minimize traffic disruptions.

KRGT and its contractors would comply with local road weight limits and restrictions and would keep roads free of mud and other debris that may be deposited by construction equipment. Track-driven equipment would cross roads on tires or equipment pads to minimize road damage. Any roadways that are damaged by construction activities would be repaired. Additional discussion of road crossings is provided in section 4.8.5.

Steep Terrain

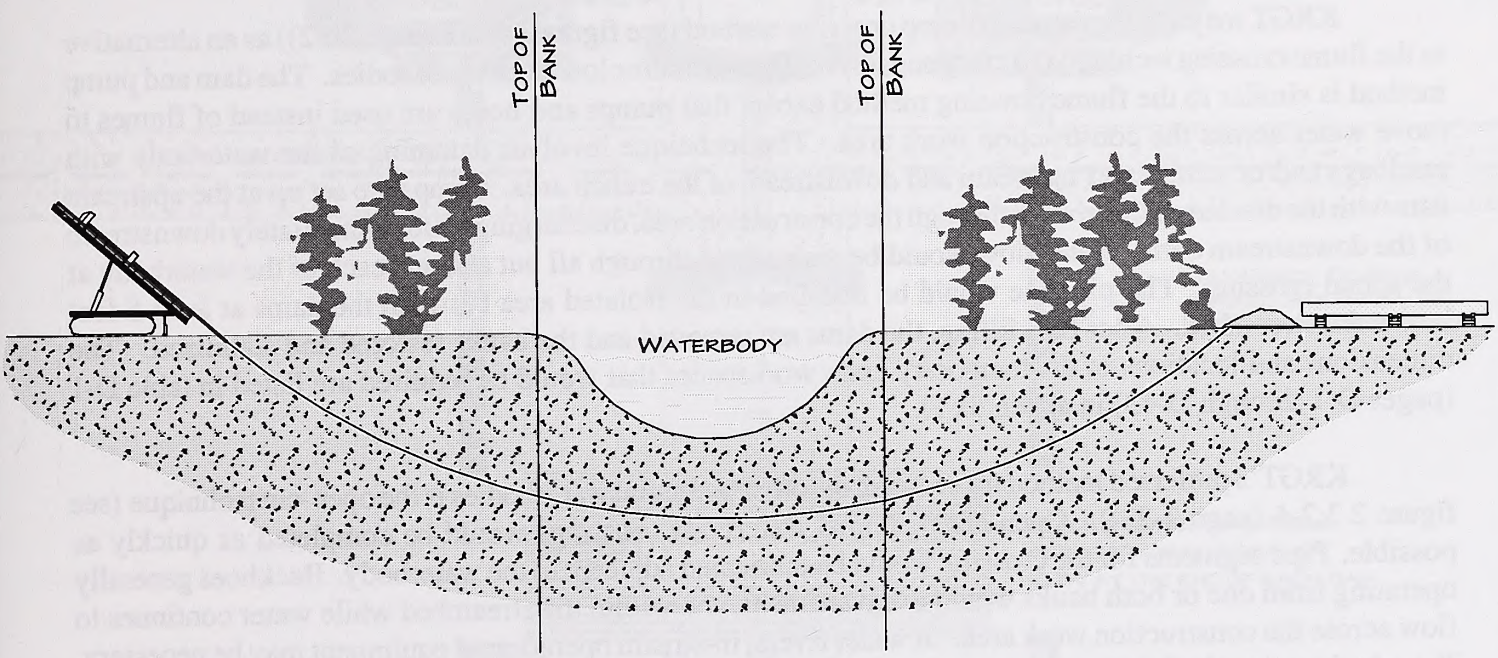
In areas of steep terrain, construction would be typically completed using cables operated by winches stationed up-slope of the work to support the construction equipment used to clear and level the right-of-way, excavate the ditch, and perform the other operations necessary to install the pipeline. The pipe would be then either welded in the ditch one piece at a time or welded together at the top or bottom of the slope, and then pushed or pulled into place using the same support cables that were used to support the construction equipment. Once the pipe is in the ditch, trench breakers and padding material would be installed. Backfilling of the ditch would be completed and the right-of-way restored.

KRGT would install temporary and permanent erosion control measures in all areas of steep terrain in accordance with its UECRM Plan (see appendix E). Temporary measures would include slope breakers and sediment barriers. Temporary measures would be installed immediately after initial disturbance and would be maintained throughout construction. Permanent measures would include trench breakers and permanent slope breakers.

Waterbody and Wetland Crossings

A total of 32 perennial waterbodies would be crossed. Of these, 7 would be in Wyoming, 24 would be in Utah, and 1 would be in Nevada. No perennial waterbodies would be crossed in California. Nine of these waterbodies are coldwater fisheries and three others are classified as game fish spawning areas. Perennial waterbodies would be crossed using one of four techniques: horizontal directional drill (HDD) method, flume method, dam and pump method, or open-cut method as described below.

KRGT proposes to cross three of the waterbodies containing coldwater fisheries, the Bear, East Branch Weber, and Weber Rivers, and their associated wetlands using the HDD method. This technique involves drilling a pilot hole under the waterbody and banks, then enlarging that hole through successive reamings until the hole is large enough to accommodate the pipe. Throughout the process of drilling and enlarging the hole, a slurry made of naturally occurring non-toxic materials, such as bentonite clay and water, would be circulated through the drilling tools to lubricate the drill bit, remove drill cuttings, and hold the hole open. This slurry is referred to as drilling mud. Pipe sections long enough to span the entire crossing would be staged and welded along the construction work area on the opposite side of the waterbody and then pulled through the drilled hole. The Bear River would be crossed in one HDD; the East Branch Weber River and adjacent Weber River would be crossed in a second HDD. At the Bear River, the pipeline would be installed about 40 feet below the river bed. At the East Branch Weber and Weber Rivers, the pipeline would be installed about 85 feet below the river bed. Directional drilling at each location is anticipated to take 4 to 6 weeks, depending on site conditions. Figure 2.3.2-1 (page 2-29) shows a conceptual HDD waterbody crossing. The dimensions and locations of the temporary extra workspaces that would be required are listed in table D-1 (pages D-1 through D-43) in appendix D.



K:\947\2001033\DRILL CONFIGURATION.VSD

For environmental review purposes only.

Figure 2.3.2-1
Kern River 2003 Expansion Project
Conceptual Horizontal Directional Drill
Waterbody Crossing

Several other waterbodies containing coldwater fisheries or classified as game fish spawning areas (Chalk Creek, East Fork Chalk Creek, Unnamed Creek at MP 71.1, South Fork Chalk Creek, and the Muddy River) would be crossed using the flume method (see figure 2.3.2-2 (page 2-31)). The flume method involves the installation of one or more flume pipes in the bed of the waterbody before trenching begins. Dams are constructed around the up and downstream end of the flume(s) to isolate the streamflow from the construction work area and direct the flow into the flume(s). The trench area between the dams is dewatered so that trenching, pipeline installation, and backfilling can be conducted beneath the flume(s) in a relatively dry condition. The KRGT pipeline would be installed at least 5 feet below the streambed. After backfilling, the dams and flume(s) are removed and the banks restored and stabilized. The dimensions and locations of the temporary extra workspaces that would be required are listed in table D-1 (pages D-1 through D-43) in appendix D. Based on streamflow conditions at the time of crossing, KRGT may also use the flume method for other sensitive waterbodies (Hams Fork River, Coyote Creek, Magotsu Creek, and Moody Wash).

KRGT may use the dam and pump crossing method (see figure 2.3.2-3 (page 2-32)) as an alternative to the flume crossing technique to cross sensitive fisheries and/or low flow waterbodies. The dam and pump method is similar to the flume crossing method except that pumps and hoses are used instead of flumes to move water across the construction work area. The technique involves damming of the waterbody with sandbags and/or steel plates upstream and downstream of the trench area. Pumps are set up at the upstream dam with the discharge line routed through the construction area, discharging water immediately downstream of the downstream dam. Water flow would be maintained through all but a short reach of the waterbody at the actual crossing. The pipeline would be installed in the isolated area between the dams at least 5 feet below the streambed. After backfilling, the dams are removed and the banks restored and stabilized. The dimensions and locations of the temporary extra workspaces that would be required are listed in table D-1 (pages D-1 through D-43) in appendix D.

KRGT's preferred method for crossing the other perennial waterbodies is the open-cut technique (see figure 2.3.2-4 (page 2-33)). Open-cut perennial waterbody crossings would be completed as quickly as possible. Pipe segments for the crossing would be fabricated adjacent to the waterbody. Backhoes generally operating from one or both banks would excavate the trench within the streambed while water continues to flow across the construction work area. In wider rivers, in-stream operation of equipment may be necessary. Trench plugs (stacked, compacted sand bags) would be left in place to prevent the flow of water into the upland portions of the trench. Trench spoil excavated from the streambed would be generally placed at least 10 feet away from the water's edge. Sediment barriers would be installed where necessary to control sediments and prevent excavated spoil from entering the water. After the trench is dug, the prefabricated pipeline segment would be carried, pushed, or pulled across the waterbody and positioned in the trench. The trench would then be backfilled with native material or with imported material if required by applicable permits. Following backfilling, the banks would be restored and stabilized. The dimensions and locations of the temporary extra workspaces that would be required are listed in table D-1 (pages D-1 through D-43) in appendix D.

The project would also cross approximately 312 intermittent waterbodies. If these intermittent waterbodies are dry when crossed, KRGT proposes to use conventional cross-country construction techniques. However, for washes with the potential to scour, a minimum depth of cover of 5 feet would be achieved by the installation of bends in the pipe (sag bends).

If an intermittent waterbody is flowing when crossed, KRGT would install the pipeline using one of the waterbody crossing methods discussed above. The dimensions and locations of the temporary extra workspaces that would be required are listed in table D-1 (pages D-1 through D-43) in appendix D.

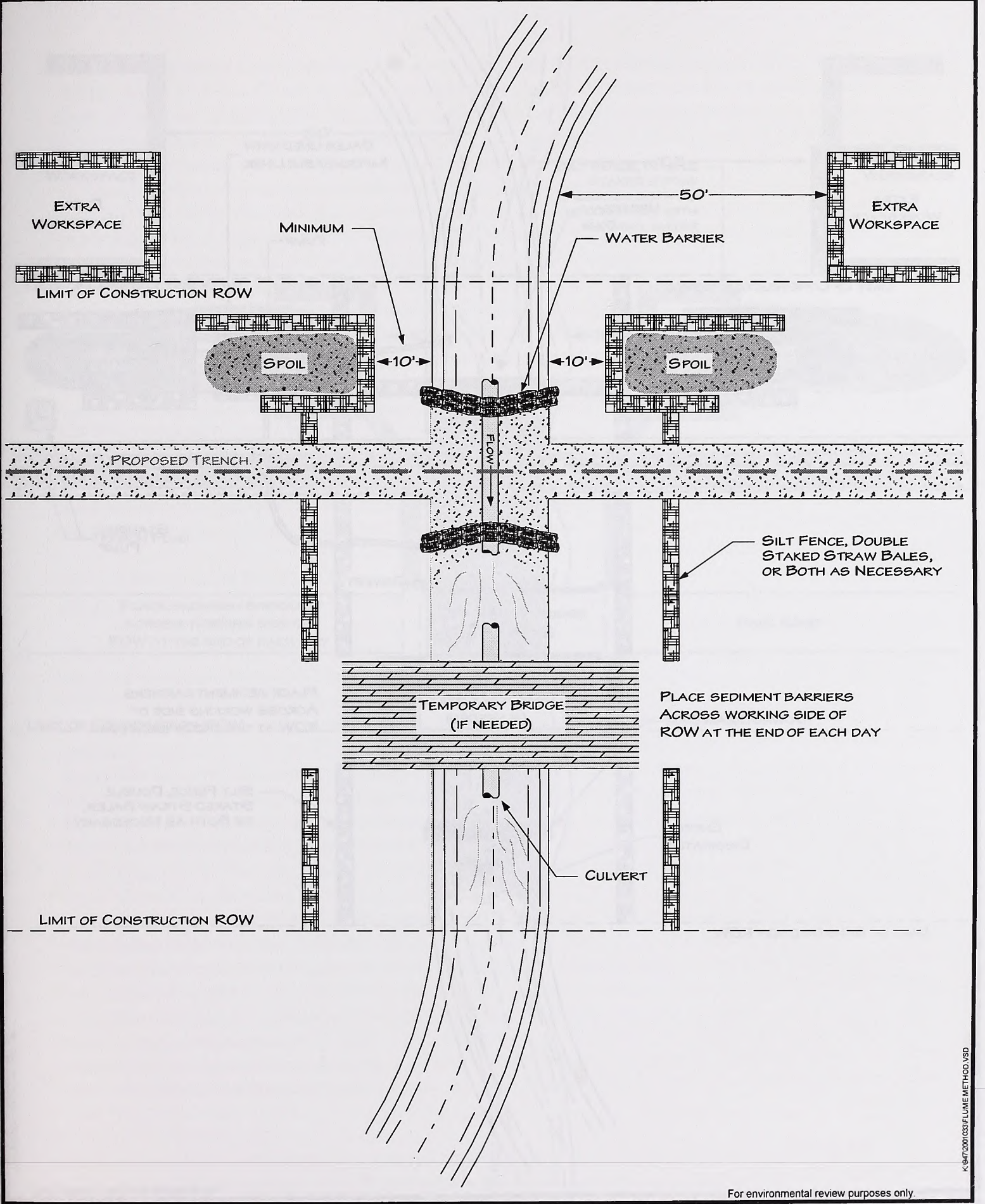


Figure 2.3.2-2
Kern River 2003 Expansion Project
Typical Flume Method
Waterbody Crossing

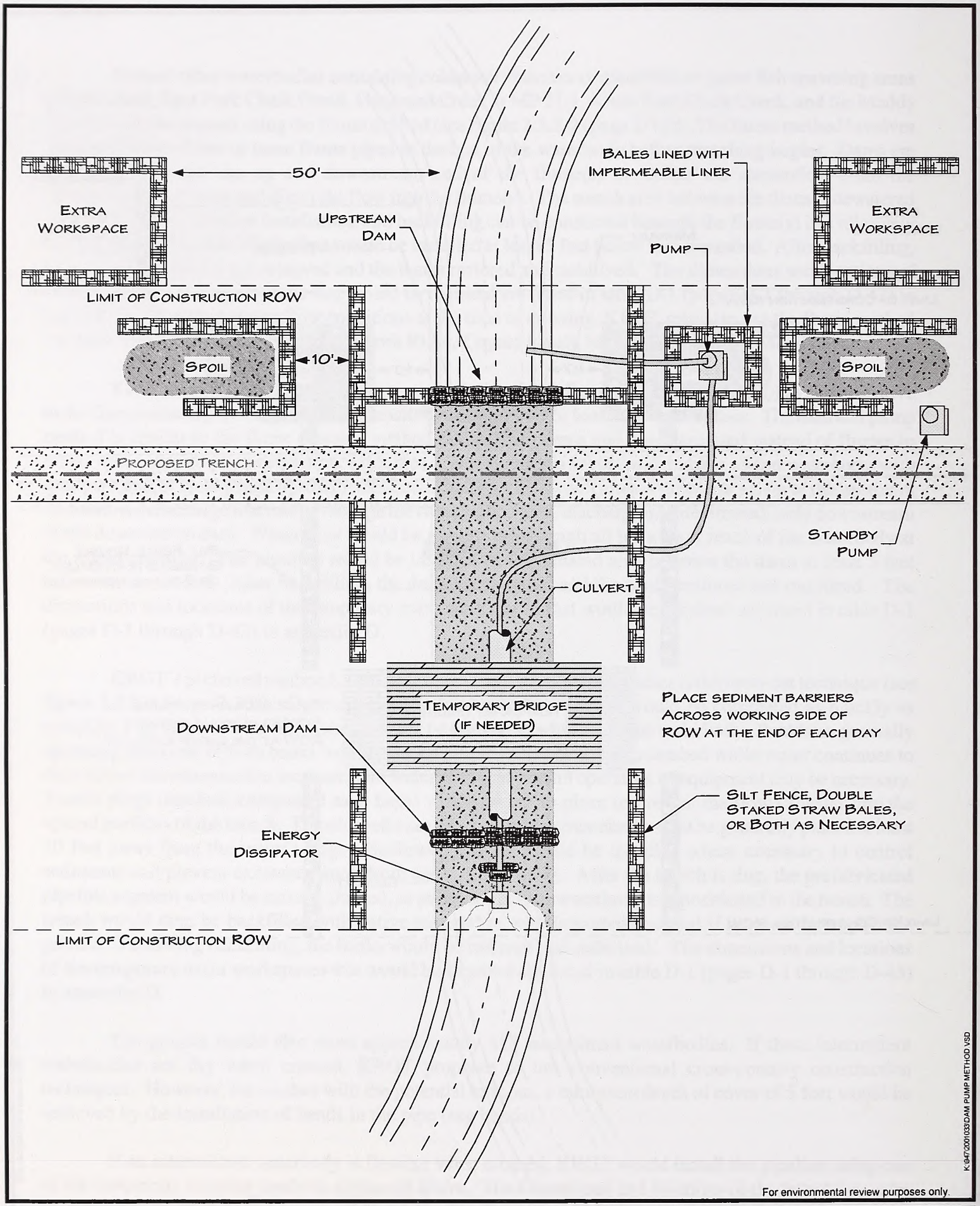


Figure 2.3.2-3
Kern River 2003 Expansion Project
Typical Dam and Pump Method
Waterbody Crossing

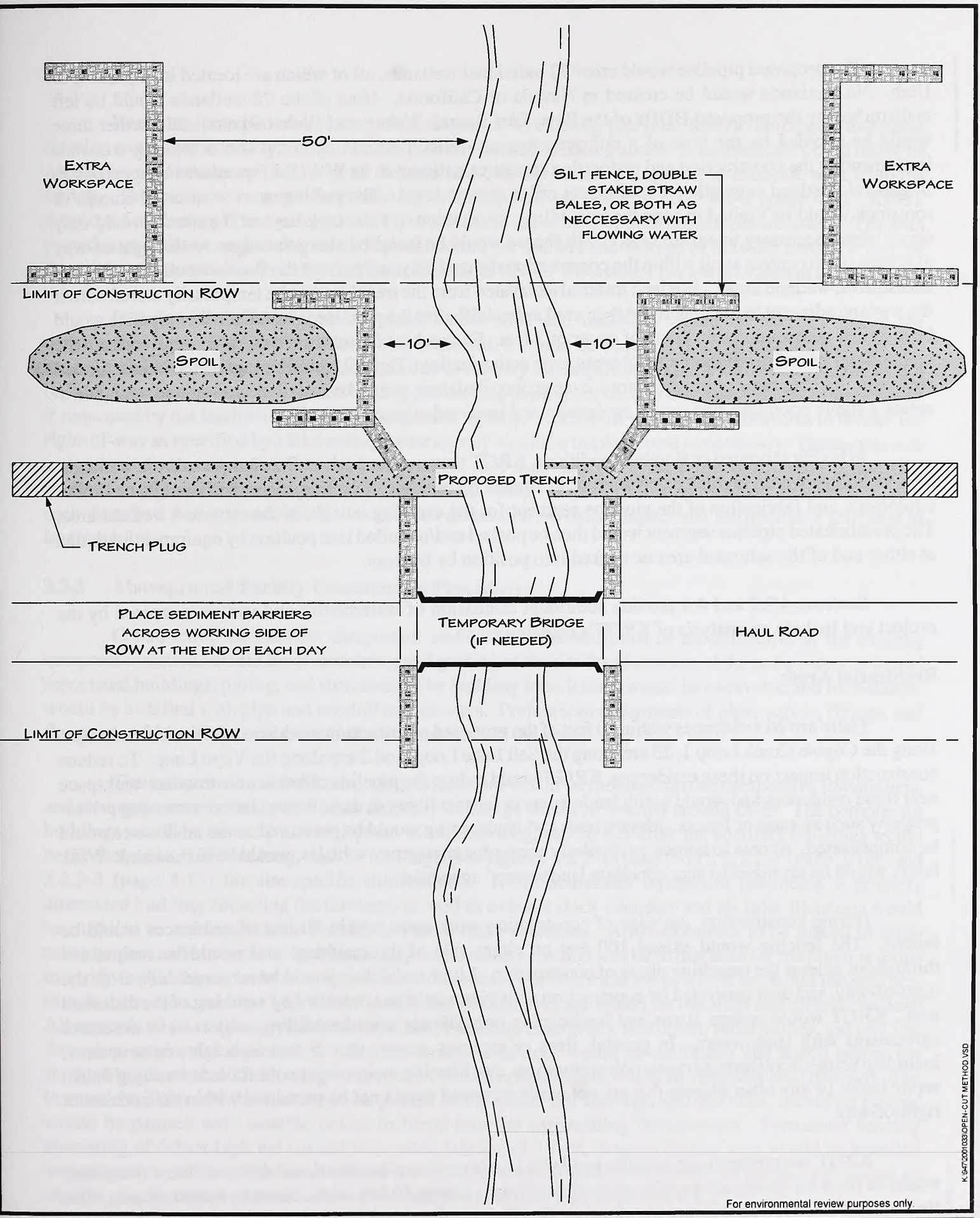


Figure 2.3.2-4
Kern River 2003 Expansion Project
Typical Open-Cut Method
Waterbody Crossing

The proposed pipeline would cross 72 individual wetlands, all of which are located in Wyoming or Utah. No wetlands would be crossed in Nevada or California. Nine of the 72 wetlands would be left undisturbed by the proposed HDDs of the Bear, East Branch Weber, and Weber Rivers, and another three would be avoided by the bore of a railroad crossing. KRGT would open cut the remaining wetlands implementing the construction and restoration measures outlined in its WWCM Procedures in appendix F. In general, wetland vegetation would be cut off at ground level. The pulling or excavation of stumps or rootstock would be limited to over the trenchline. Excavation of rootstock beyond the trench would only occur where necessary to ensure safety. Silt fences would be installed along the edges of the right-of-way as necessary to contain spoil within the construction right-of-way and prevent the flow of spoil into adjacent undisturbed wetland areas. Wetland material excavated from the trench would be temporarily stored within the wetland adjacent to the trench and then used as backfill after the pipeline is installed. The pipeline would be installed with a minimum depth of cover of 3 feet. Excess backfill material would be removed from the wetland and spread in adjacent upland areas, with authorization. Topsoil would be segregated in unsaturated wetlands. Timber mats or crushed stone over geotextile fabric would be installed in saturated wetlands to create a stable operating surface for equipment and removed after construction.

In highly saturated or flooded conditions, KRGT may use the push-pull technique to cross wetlands. This technique would involve excavation of the trench by backhoe, drag line, clam shell dredge, or similar equipment, and fabrication of the pipeline segment for the crossing outside of the saturated wetland area. The prefabricated pipeline segment would then be pushed and/or pulled into position by equipment stationed at either end of the saturated area or walked into position by tractors.

Sections 4.3.2 and 4.4 provide additional discussion of waterbodies and wetlands crossed by the project and include an analysis of KRGT's crossing plans.

Residential Areas

There are 26 residences within 50 feet of the proposed construction work area. Of these, 1 is located along the Coyote Creek Loop 1, 23 are along the Salt Lake Loop, and 2 are along the Veyo Loop. To reduce construction impact on these residences, KRGT would reduce the pipeline offset or construction workspace near these residences and would notify landowners or tenants living in these houses before removing private property such as gates or fences. Mature trees and landscaping would be preserved or the landowner would be compensated. Access to homes, particularly access for emergency vehicles, would be maintained. Work hours would be arranged to accommodate landowners' schedules.

During construction, the edge of construction work areas within 50 feet of residences would be fenced. The fencing would extend 100 feet on either side of the residence and would be maintained throughout at least the trenching phase of construction. Litter and debris would be removed daily from the right-of-way, and dust generated by construction activities would be controlled by watering of the disturbed area. KRGT would restore lawns and landscaping immediately after backfilling subject to its easement agreements with landowners. In general, trees or saplings greater than 5 feet in height, or structures, including houses, toolsheds, garages, poles, guy wires, catch basins, swimming pools, trailers, leaching fields, septic tanks, or any other objects that are not easily removed would not be permitted within the permanent right-of-way.

KRGT has prepared site-specific residential construction plans that detail the specific measures that would be used for construction adjacent to all residences within 50 feet of the construction work area. The locations of these residences and the site-specific plans are discussed in detail in section 4.8.4.

Blasting

Based on its experience during construction of its existing pipeline, KRGT anticipates that some blasting would be necessary to excavate the pipeline trench. Blasting and/or other methods would likely be needed on all of the proposed loops to fracture bedrock and enable equipment to excavate rock from the trench. The milepost ranges where blasting is anticipated are listed in table 4.1-1 (page 4-4). KRGT developed a Blasting Plan (see appendix H) to minimize the effects of blasting and ensure safety. The plan provides guidelines, requirements, and specifications for the use and storage of blasting materials and for the safety of personnel and nearby facilities. Details of KRGT's Blasting Plan are provided in section 4.1.2.

In areas where blasting is required, native soils and materials would be used to restore the construction right-of-way. If additional soil is needed, it would be acquired from an existing local borrow area. Rock introduced into the surface soil that is visually incompatible with the surrounding areas would be buried on the right-of-way, hauled to an approved disposal site, or used to block access to the right-of-way if requested by the landowner or land management agency. Additional site-specific measures to restore the right-of-way as specified by a land management agency would be implemented as necessary. These measures could include the use of native soils, vegetation, and materials to recreate preconstruction conditions, application of a soil coloration product where natural "desert varnish" has been removed, or rebuilding rim-rock disturbed during construction. Additional discussion of visual impact and mitigation is provided in section 4.8.7.1.

2.3.3 Aboveground Facility Construction Procedures

Construction of the new compressor stations and the additions or modifications at the existing compressor stations would involve clearing and grading of the site for placement of the compressor units and associated buildings, piping, and structures. The building foundations would be excavated and foundations would be installed with pipe and conduit access ways. Prefabricated segments of pipe, valves, fittings, and flanges would be shop- or site-welded and assembled at the site.

The compressor units and other large equipment would be mounted on their respective foundations, and the compressor building and other ancillary buildings would be erected around them. The compressor buildings would be 46 to 52 feet wide, 91.5 to 160 feet long, and 26 feet high; the ancillary buildings would be 32 feet wide, 125 feet long, and 17 feet high (see figures 2.2.2-1 (page 2-17), 2.2.2-2 (page 2-18), and 2.2.2-3 (page 2-19) for site-specific dimensions). Noise abatement equipment (including a properly attenuated building enclosing the turbines, as well as exhaust stack silencers and air inlet silencers) would be installed to meet applicable Federal and local noise standards. All components to be placed in high-pressure gas service would be hydrostatically tested using a method similar to that used for the pipeline loops to verify their integrity before being placed into service. The electrical wires would be pulled through pre-installed conduits, and the instrument panels and control systems would be installed and circuit checked. All controls and safety equipment and systems, including emergency shutdown, relief valves, gas and fire detection, engine overspeed, and vibration detection devices would be calibrated and tested before the stations begin service. Following construction, construction debris would be removed and disposed of in licensed facilities and the site would be graded and leveled. All aboveground facilities, including piping, would be painted with suitable colors to blend into the surrounding environment. Permanent fencing consisting of 6-foot-high galvanized wire mesh fabric and 1 foot, 3-strain barbed wire would be installed around each new site. The access roads and parking areas at these sites would be paved with gravel or asphalt. A discussion of visual impact and mitigation is provided in section 4.8.7.1.

The 1.3-mile-long powerline structure to the Coyote Creek Compressor Station would consist of 40-foot-high wooden poles located 300 feet apart and supporting three-phase service on cross arms. The 0.3-

mile long powerline to the Dry Lake Compressor Station would consist of 48.5-foot-high wooden poles located 340 feet apart. Construction of these powerlines would include auger holes and the setting of the poles with attachments and stringing wire. From the last pole the incoming power would run underground to the station transformer. The 100-foot-long powerline to the Salt Lake Compressor Station would be buried. A trench would be excavated from the last utility company distribution pole to the compressor station property and conduit would be installed along with the service conductors.

The installation of the pig launchers and receivers would meet the same standards and requirements established for the compressor stations and pipeline. The pig launcher and receiver sites would be graveled and fenced with 6-foot-high chainlink fencing (if outside existing facility fencelines) for security. Access to these sites would be either from existing access roads or the permanent right-of-way (see section 2.2.2).

The installation of MLVs would meet the same standards and requirements established for the compressor stations and pipeline. The MLV sites would be surfaced with gravel and fenced with 6-foot-high chainlink fencing (if outside existing facility fencelines) to protect them from damage or vandalism.

2.4 CONSTRUCTION SCHEDULE

KRGT states that its 2003 Expansion Project would take 11 months to construct. KRGT has scheduled 10 construction spreads divided into two general sections: a northern and a southern section. In the northern section, KRGT currently plans to construct the loops from Opal, Wyoming to about 10 miles south of the Veyo Compressor Station using six construction spreads simultaneously moving north to south during the late summer and fall of 2002. KRGT plans to construct the remainder of the project (the southern section) from about 10 miles south of the Veyo Compressor Station to Kern County, California using four construction spreads simultaneously moving north to south (Spreads 7 through 9) and west to east (Spread 10) during the fall of 2002 through the spring of 2003. KRGT has scheduled the northern section first in order to complete restoration efforts before the onset of winter, minimize conflicts with agency-recommended timing restrictions, and meet the reclamation objectives identified by land management agencies. Construction could not begin until the permitting and approval process is completed.

Construction of the new compressor stations and the modifications at the existing compressor stations would generally take about 7 months at each station. The meter station modifications are expected to take about 3 months at each station. The activities at the aboveground facilities may occur at any time during the proposed 11-month construction period, pending compliance with construction timing restrictions to mitigate potential impact on threatened or endangered species, wildlife, residential areas, and other applicable uses.

Additional details of KRGT's construction plans and workforce are provided in section 4.9.2.

2.5 ENVIRONMENTAL COMPLIANCE INSPECTION AND MITIGATION MONITORING

As the lead Federal agency for the project, the FERC may impose conditions on any Certificate granted for the project. These conditions could include additional requirements and mitigation measures identified in the EIS/EIR to minimize the environmental impact that would result from the construction of the project (see sections 4.0 and 5.0). The FERC staff will recommend to its Commission that these additional requirements and mitigation measures (offset with bold type in the text) be included as specific conditions to any approving Certificate issued for KRGT's project. The FERC staff will also recommend to its Commission that KRGT be required to implement the mitigation measures that it has proposed as part of the project unless specifically modified by other Certificate conditions.

As the California state lead agency, the CSLC would adopt a mitigation monitoring program (MMP) for the project pursuant to the CEQA (see table 5.1-1 (page 5-10)). In accordance with the Mineral Leasing Act, the BLM would require KRGT to furnish a bond, or other security, to ensure that KRGT would comply with the terms and conditions of the BLM's right-of-way grant. While there would be some jurisdictional differences between the FERC's, the CSLC's, and the BLM's requirements, the environmental inspection and mitigation monitoring program for the Kern River 2003 Expansion Project would address requirements placed on the project by these and other agencies. Full-time third-party compliance monitors representing the FERC and the BLM would be present on each construction spread to monitor compliance with project mitigation measures and requirements. In California, implementation of the project and project MMP would be monitored by a third-party consultant under contract to the CSLC, pursuant to standard CSLC policy. Other Federal and state agencies would conduct oversight of inspection and monitoring to the extent determined necessary by the individual agency.

KRGT would assign at least two qualified environmental inspectors (EIs) to each construction spread that is larger than 40 miles to monitor environmental compliance during construction. The responsibilities of the EIs are outlined in section III.B. of KRGT's UECRM Plan (see appendix E) and would include ensuring that the Certificate and environmental conditions attached to other permits or authorizations are met. During the construction phase, KRGT's EIs would inspect and monitor all construction and mitigation activities to ensure compliance with plans, permits, and conditions. Specifically, the EIs would be:

- responsible for monitoring and ensuring compliance with all environmental mitigative measures required in a Certificate and other grants, permits, or other authorizing documents;
- responsible for evaluating the construction contractors' implementation of the environmental mitigation measures required in the contract and any other authorizing documents;
- empowered to order correction of acts that violate the environmental conditions of a Certificate, and any other authorizing document;
- a full-time position separate from all other activity inspectors;
- responsible for documenting compliance with the environmental conditions of a Certificate, as well as any environmental conditions/permit requirements imposed by other Federal, state, or local agencies; and
- responsible for maintaining status reports.

In California, all of the above requirements would be exercised in conjunction with and with the concurrence of the CSLC third-party monitors.

After construction, KRGT would develop and implement a post-construction crop monitoring program for a period of at least 2 years following construction. During this 2-year period, KRGT would submit quarterly reports to the FERC that document any problems identified by KRGT or landowners and describe the corrective actions taken to remedy those problems.

In accordance with its site-specific Reclamation Plans, KRGT would begin monitoring non-agricultural areas disturbed by construction 1 year following the completion of construction activities. The length of the monitoring period would vary by revegetation type. In general, monitoring in Wyoming, non-desert areas of Utah, and the Dixie National Forest would occur for 5 years following construction. The

monitoring period for desert areas, including the southern part of Utah, and all parts of Nevada and California, would occur for 6 years. Monitoring data would be collected through field visits and aerial surveys, compiled in reports, and submitted annually to the BLM, the FERC, the CSLC in California, and other appropriate land and resource management agencies. Specific success criteria have been developed in consultation with the appropriate land and resource management agencies. These success criteria would vary by state as described in detail in section 4.5.2.1.

Where the results of the annual monitoring indicate that the success criteria are not being met, remedial action would be taken. Areas where restoration is noted as being unsuccessful would be identified by milepost. These locations and any remedial actions taken would be documented in reports that would be provided to the BLM, the FERC, the CSLC in California, and other appropriate land and resource management agencies within 3 months following the inspections. The remedial treatments employed would be determined on a site-specific basis and in consultation with the landowner or land management agency and the applicable resource management agencies. Should the success criteria not be met at the end of the monitoring program, KRGT would work with the landowner or land management agency and the applicable resource management agencies to take corrective actions as appropriate. Additional details of the revegetation monitoring program are presented in section 4.5.2.1.

As part of its weed control plans, KRGT would conduct noxious weed surveys. Noxious weed monitoring would occur concurrent with the Reclamation Plan monitoring. Inspections of the entire pipeline route for noxious weeds would occur the year following construction and then every other year for 5 years. Areas of known infestations would be inspected annually and treated as necessary. Monitoring data collected would include the noxious weed species, their location, and the extent of the infestation. The results of the monitoring would be provided to the local regulatory agencies (*i.e.*, BLM, FS, local weed districts, and the CSLC in California). KRGT's Noxious Weed Plan is discussed in detail in section 4.5.4.

After construction, the lead, cooperating, and/or other agencies would continue to conduct oversight inspection and monitoring. If it is determined that any of the proposed monitoring time frames are not adequate to assess the success of restoration, KRGT would be required to extend its post-construction monitoring programs. The BLM would retain KRGT's bond or other security until the BLM is satisfied with KRGT's reclamation efforts.

2.6 OPERATION, MAINTENANCE, AND SAFETY CONTROLS

KRGT would operate and maintain the proposed facilities in accordance with all applicable Federal, state, and local regulations and in accordance with the COM Plan on Federal lands. Section 4.12 presents a detailed discussion of applicable regulations.

The pipeline operations workforce would work from KRGT's existing district offices in Evanston, Wyoming; Fillmore, Utah; and Las Vegas, Nevada. Operational activity on the pipeline would be limited primarily to maintenance of the right-of-way and inspection, repair, and cleaning of the pipeline. Aerial and ground inspections by pipeline personnel would identify soil erosion that may expose the pipe; dead vegetation that may indicate a leak in the pipeline; conditions of the vegetative cover and erosion control measures; unauthorized encroachment on the right-of-way, such as buildings and other substantial structures; and other conditions that could present a safety hazard or require preventive maintenance or reporting.

The frequency of the patrols of the pipeline system would be based on the population density of each particular segment of pipe. Each segment of the pipeline is categorized into one of four different class locations based upon population density. Class 1 corresponds to the least populated and Class 4 corresponds to the most dense. Additional discussion of class locations is presented in section 4.12.1. The minimum

patrol frequencies documented in KRGT's operations and maintenance plan are as follows: KRGT patrols all public road crossings in Class 1 and 2 locations at intervals not to exceed 7.5 months, but at least twice each calendar year. All other Class 1 and 2 locations are patrolled at intervals not to exceed 15 months, but at least once each calendar year. KRGT patrols all of the public road crossings in Class 3 locations at intervals not to exceed 4.5 months, but at least four times each calendar year. All other Class 3 locations are patrolled at intervals not to exceed 7.5 months, but at least twice each calendar year. There are no Class 4 locations on the KRGT pipeline system. In addition to the minimum policy limits listed above, the current KRGT guideline for implementing this specific policy also requires bi-weekly aerial patrols of the entire pipeline system, weather permitting. This exceeds the DOT requirements.

KRGT would take corrective actions to conditions observed during inspection. If the problem is located on Federal lands, KRGT would contact the land management agency to coordinate access and provide a work crew to make the necessary repairs. If the problem is located on state, local, or private lands, KRGT would contact the appropriate state or local agency or the landowner to coordinate access and provide a work crew to make the necessary repairs.

While revegetation of the right-of-way is encouraged, large brush and trees that could damage the pipeline's protective coating, obscure periodic surveillance, or interfere with potential repairs may be removed. Such brush and trees would not be permitted to grow within 15 feet of the pipeline in wetlands or within 25 feet of the pipeline in uplands. The frequency of the vegetation maintenance would depend upon the vegetation growth rate. Vegetation maintenance would not normally be required in agricultural or grazing areas.

The pipeline facilities would be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative may be reached in the event of an emergency or before any excavation in the area of the pipeline by a third party. KRGT participates in all communication and notification services to prevent damage to underground utilities (One-call systems).

Section 4.12 presents a more detailed discussion of KRGT's operation and maintenance procedures and safety controls.

2.7 FUTURE PLANS AND ABANDONMENT

KRGT states that it has no definitive plans for either future expansion or abandonment of the Kern River 2003 Expansion Project facilities. There are no plans to expand the existing KRGT communications network because the existing network would accommodate the Kern River 2003 Expansion Project. KRGT would not install a fiber optic line in conjunction with the proposed pipeline. Properly maintained, and assuming adequate gas supplies and markets, the proposed pipeline is expected to operate for 50 or more years. If and when KRGT abandons any of the proposed facilities, the abandonment would be subject to separate approvals by the FERC, the CSLC in California, the BLM, and the other Federal land management agencies. The FERC review would be conducted under Section 7(b) of the NGA. The CSLC review would be conducted under the CEQA. For the Federal lands involved, the BLM would require KRGT to submit an abandonment plan at least 90 days prior to anticipated abandonment. The abandonment plan would be reviewed by the BLM and the other affected Federal land management agencies. The BLM would be responsible for approving the plan after receipt of concurrence from the other affected Federal land management agencies.

The FERC typically allows a buried pipeline that has reached the end of its service life to be internally cleaned, purged free of gas, isolated from interconnections with other pipelines, and sealed without

removing the pipe from the trench. The FERC believes that this approach generally minimizes surface disturbance and other potential environmental impact. The aboveground pipeline at compressor and meter stations would be completely removed, including all related aboveground equipment and foundations, and the station sites would be restored to as near original condition as possible. The CSLC's policy is to require complete removal of abandoned facilities unless at the time of removal it can be demonstrated that there would be more long-term impacts from removal than abandonment. Disposition of the KRGT facilities on Federal lands would depend on decisions made in the abandonment plan discussed above.

Upon abandonment of the pipeline, in part or in whole, the rights-of-way associated with the abandoned facilities would normally be returned to the landowners/land management agencies according to the specific easement agreements between the pipeline company and the landowners/land management agencies. However, on Federal lands, the pipeline right-of-way could be used for other utility rights-of-way (*e.g.*, fiber optic lines) depending upon future decisions made by the land management agency.

ALTERNATIVES

3.0 ALTERNATIVES

Several alternatives to the Kern River 2003 Expansion Project were evaluated to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives include the no action or postponed action alternative, system alternatives, route alternatives, and aboveground facility site alternatives.

The evaluation criteria for selecting potentially environmentally preferable alternatives are:

- technical feasibility and practicality;
- significant environmental advantage over the proposed action; and
- ability to meet the project objectives.

The analysis is based on information provided by KRGT, field surveys, aerial photographs (where available), U.S. Geological Survey (USGS) topographic maps, other publicly available electronic data, and agency consultations. As discussed below, none of the alternatives considered was determined to be environmentally preferable to the proposed action. Therefore, no analysis of these alternatives is carried forward into section 4.0 of this EIS/EIR.

3.1 NO ACTION OR POSTPONED ACTION

The actions triggering this environmental review were KRGT's applications to the FERC for a Certificate, to the CSLC for new or amended right-of-way leases across the state's School Lands, and to land management agencies to cross other Federal and state lands. The FERC, the CSLC, and affected land management agencies have three courses of action in processing these applications. They may: 1) grant the approvals with or without conditions; 2) deny the approvals; or 3) postpone action pending further study by denying the application without prejudice.

If the FERC, the CSLC, and affected land management agencies deny or postpone KRGT's applications, the environmental impacts identified in this EIS/EIR would not occur. In addition, should the no action alternative be selected, the stated objectives of KRGT's proposal would not be met. Specifically, both the producers in the Central Rocky Mountains supply region and the customers in the proposed service area would not have access to the 885,626 Dth/d of capacity of natural gas KRGT proposes to add to its system. If this happens, the potential users of the proposed volumes would need to obtain their energy supply from other natural gas systems, use alternative energy sources, or use alternative fuels.

The first option could require the construction of additional and/or new pipeline facilities in other locations to transport natural gas supplies. If other natural gas facilities are approved and constructed, each project would result in its own set of specific impacts that could be less or greater than those associated with the current proposal. The second option, use of alternative energy sources, is infeasible because the use of solar, hydroelectric, or other energy sources (*e.g.*, geothermal, fuel cells) has not been developed to the point where they would be viable energy alternatives to the proposed project.

The third option would require KRGT's customers (*e.g.*, power plants) to apply for and seek regulatory approval to use other fuels. This change in fuels could have two effects. First, it could delay or jeopardize the operating schedule of many proposed power plants, which are currently designed and being permitted to burn natural gas. Second, an increased use of alternative fuels could result in a corresponding increase in emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_x), and particulate matter less than 10 microns in diameter (PM_{10}). Compared to other fossil fuels, natural gas is a relatively clean and efficient fuel

that can reduce many pollutants. If oil were used in lieu of natural gas, annual emissions of SO_2, NO_x, and PM_{10} would be about 128,000 tons, 23,000 tons, and 7,300 tons higher, respectively.

It is difficult to determine the impact of a pipeline project on greenhouse gas (GHG) emissions; however, credible estimates of GHG impacts can be developed based upon reasonable assumptions regarding the use of the natural gas delivered by the pipeline and what energy resources would likely be utilized if the gas from the pipeline was not available. The Kern River 2003 Expansion Project would provide 885,626 Dth/d of new firm natural gas capacity to its customers. Nearly all of the proposed capacity would be used primarily to serve existing and planned power generation plants in California and Nevada. Burning this volume of natural gas would produce about 4,209,700 metric tons of carbon per year. If the proposed 885,626 Dth/d for the generating facilities were replaced with other fossil fuels, GHG emissions could potentially increase to between 4,361,500 and 6,608,100 metric tons of carbon per year (4 to 57 percent), depending on the assumptions made in the analysis. This analysis only evaluates the potential change in GHG emissions for the ultimate end user of the natural gas volumes associated with this project. GHG emissions are also related to the construction of the pipeline as well as to the production, processing, transmission, and distribution of natural gas as well as for the alternative fossil fuels.

3.2 SYSTEM ALTERNATIVES

System alternatives are alternatives to the proposed action that would make use of other existing, modified, or proposed pipeline systems to meet the stated objectives of the proposed project. A system alternative would make it unnecessary to construct all or part of the proposed project, although some modifications or additions to another existing pipeline system may be required to increase its capacity, or another entirely new system may need to be constructed. Such modifications or additions would result in environmental impact; however, the impact could be less than, similar to, or greater than that associated with construction of the proposed project.

The purpose of identifying and evaluating system alternatives is to determine whether potential environmental impacts associated with the construction and operation of the proposed facilities could be avoided or reduced while still allowing the stated objectives of the project to be met.

In order to be viable system alternatives to the Kern River 2003 Expansion Project, other systems would have to meet two criteria: 1) they would need to provide transportation of natural gas from Opal, Wyoming [1/] to points in Utah, Nevada, and California from which the gas could then be transported via regional systems to the market delivery points; and 2) they would need to be able to provide the required volumes within the same general time frame as the proposed project.

3.2.1 Other Existing Pipeline Systems

An existing pipeline system alternative to the proposed project must be able to transport 885,626 Dth/d of gas from the vicinity of Opal, Wyoming to natural gas markets and pipeline interconnects in Utah, Nevada, and California. No other existing pipeline system currently extends from the processing plants and interstate and intrastate pipeline systems in the Opal, Wyoming vicinity to California. However, gas could

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1/ All of the shippers on the Kern River 2003 Expansion Project have designated Williams Gas Processing Company's Opal Plant as their primary receipt point for the access it offers to multiple sources of supply. Specifically, by selecting this point at the beginning of KRGT's system, the shippers also gain access to other processing plants directly attached to KRGT's system in the various Rocky Mountain supply basins. Also, KRGT has interconnects in the general vicinity of Opal with the interstate pipelines of Northwest Pipeline Corporation, Colorado Interstate Pipeline Company, and Questar Pipeline Company and the intrastate pipeline system of Overland Trail Transmission Company. These pipelines offer shippers access to the San Juan, Uinta, Piceance, Canada's Western Sedimentary, Green River, Powder River, Bighorn, Madden, Wamsutter, Thrustbelt, Ferron, and Sand Wash supply basins.

be transported to California from the Opal, Wyoming area via a combination of the interstate pipeline systems of Northwest Pipeline Corporation (Northwest), El Paso Natural Gas Company (El Paso) and/or Transwestern Pipeline Company (Transwestern), and Mojave. These systems are described below.

Northwest's pipeline system consists of about 438.8 miles of primarily 26-inch-diameter single mainline that extends from an existing interconnect with KRGT at Muddy Creek in Lincoln County, Wyoming to existing interconnects with El Paso and Transwestern in La Plata County, Colorado. While operating under a south-flow scenario, Northwest can transport up to 350 million cubic feet per day (MMcfd) of natural gas when utilizing all of its available horsepower of compression. The MAOP of the Northwest system along this segment is 809 psig. Currently, the capacity on Northwest is fully subscribed and is utilized at high load factors.

El Paso's San Juan Triangle System consists of about 130 miles of two dual mainlines with varying pipeline diameters (16-inch, 20-inch, 24-inch, 30-inch, 34-inch, and 42-inch) extending from El Paso's existing interconnect with Northwest in La Plata County, Colorado to the Valve City interconnect with El Paso's San Juan Mainline system located in McKinley County, New Mexico. Currently, the San Juan Triangle System is capable of transporting about 2.8 billion cubic feet per day (Bcf/d) from various receipt points within the San Jan Basin to Valve City, New Mexico. Of the 2.8 Bcf/d transported to Valve City, only about 2.3 Bcf/d is directed to western markets. The balance, or 500 MMcfd, is transported on El Paso's Permian-San Juan Crossover system to the eastern portion of El Paso's system in Texas. The two dual mainlines have MAOPs of 845 psig and 894 psig. Currently, the capacity on this system is fully subscribed.

El Paso's San Juan Mainline System consists of about 355 miles of dual high pressure (single pipeline) and low pressure (looped pipeline) mainlines with varying pipeline diameters (20-inch, 24-inch, 30-inch, and 34-inch) from Valve City to the terminus of El Paso's San Juan Mainline System at Topock, Arizona (at the California border). The San Juan Mainline System is designed to provide up to 2.2 Bcf/d to its existing interconnects with local distribution companies and existing interstate pipeline systems. The high and low pressure mainlines have a MAOP of 894 psig and 845 psig, respectively. Currently, the capacity on this system is fully subscribed.

Transwestern's San Juan Triangle Lateral consists of about 91 miles of 30-inch-diameter mainline that extends from Transwestern's existing interconnect with Northwest and various gathering companies and producers in La Plata County, Colorado to the Gallup Compressor Station at the interconnect with Transwestern's mainline facilities located in McKinley County, New Mexico. The San Juan Triangle Lateral is capable of transporting up to 850 MMcfd to the lateral's interconnect with Transwestern's mainline facilities. The San Juan Lateral has a MAOP of 1,200 psig. Transwestern's San Juan Lateral is currently fully subscribed and operated at high load factors.

The western portion of Transwestern's mainline system, extending from the Thoreau Compressor Station in McKinley County, New Mexico to Topock, Arizona and North Needles, California consists of 358 miles of dual 30-inch-diameter pipeline. The summer design capacity of Transwestern's western portion of its mainline system is 1.2 Bcf/d. The MAOP of Transwestern's mainline is 1,008 psig. This portion of Transwestern's system is fully subscribed to downstream markets in both Arizona and California.

Mojave's pipeline system consists of a 144-mile-long, 30-inch-diameter pipeline extending from Topock, Arizona interconnects with El Paso and Transwestern to the Daggett Compressor Station in San Bernardino County, California where it interconnects with KRGT and the jointly owned KRGT/Mojave Common System facilities begin. The MAOP of Mojave's system is 1,200 psig. Mojave's capacity of 400 MMcfd is completely subscribed.

Under an alternative using a combination of these interstate pipeline systems, gas would enter Northwest's pipeline system at its existing interconnect with KRGT near Opal, Wyoming. The gas would then move southward to interconnects with El Paso and/or Transwestern at the Blanco Processing Plant in northwestern New Mexico. From Blanco, the gas would be transported westward to interconnects with Mojave near Topock, Arizona on El Paso and/or Transwestern's pipeline systems. From Topock, Mojave would transport the gas to its interconnect with KRGT at the Daggett Compressor Station. From Daggett most of the gas would be forward hauled through the KRGT/Mojave Common System facilities to markets in California. A small amount, 40,000 Dth/d, would be backhauled to markets in Nevada and Utah.

All of these existing systems are fully subscribed and operating at full capacity. Therefore, to provide the volumes of natural gas proposed by KRGT, these systems would require expansion and construction of new facilities, most likely with looping along the entire length of their pipeline systems (1,068 miles using El Paso or 1,032 miles using Transwestern). Compression at several if not all of the compressor stations on the pipelines would also need to be expanded. Construction or expansion of these new facilities would be greater than those proposed by KRGT. In addition, KRGT would still need to construct the 82.2 miles associated with the Daggett Loop on the KRGT/Mojave Common System facilities as proposed in the Kern River 2003 Expansion Project. Because an expansion of these systems would not present an environmental advantage over the Kern River 2003 Expansion Project, system alternatives were eliminated from further consideration.

3.2.2 Alternative Configurations of the KRGT System

Scoping comments raised the question of possibly expanding the existing KRGT system by two alternative scenarios, pipeline looping only and compression only. These are discussed below.

Pipeline Looping-only Alternative

To meet current shipper demands without adding compression, KRGT would need to provide an additional 885,626 Dth/d by means of pipeline only, which would require either installation of two parallel loops or a substantially larger diameter loop than is currently proposed. In either case, the pipeline-looping only alternative would require the installation of new pipeline in the Wasatch Mountains between MPs 96.4 and 124.5 and in Las Vegas between MPs 517.5 and 543.6. KRGT purposely avoided both of these areas in the design of its proposed facilities to minimize environmental impact. During agency scoping meetings, the BLM Las Vegas Field Office indicated that KRGT should specifically evaluate pipeline alternatives in the Las Vegas area in lieu of compression. The potential routes suggested by the BLM include installation of pipeline adjacent to KRGT's existing pipeline, and pipeline routes that either make use of the Las Vegas Beltway expansion right-of-way (an express highway connecting Summerlin Parkway to Interstate 15 in Las Vegas) or bypass the valley by making use of other rights-of-way. All of these alternatives would be similar to the single-loop and dual-loop alternatives discussed below and would necessitate construction of more pipeline and therefore more land disturbance than the proposed facilities. As to concerns regarding the risks associated with the increased pressure in the non-looped portion of the existing KRGT pipeline in Las Vegas, the constraints of the pipeline system such as MAOP, temperature, and velocity must be accounted for in the system design to ensure that all of the existing components would continue to operate within DOT safety limits. While it may be true that the proposed design would increase average operating pressure in the existing pipeline along the non-looped portions of the system, the increase would be only approximately 14 psig in the first skipped area and 57 psig in the second skipped area. The resulting increased pressures to 1,052 psig and 1,051 psig, respectively, would still be within the existing system's MAOP of 1,200 psig (the maximum safe operating pressure allowed by DOT regulations).

Single-Loop Alternative - This alternative would involve construction of a single loop with no additional compression. This alternative was eliminated from further consideration for the following reasons. KRGT would need to install a total of 800.4 miles of pipeline consisting of 565.9 miles of 60-inch diameter pipeline, 118.5 miles of 42-inch-diameter pipeline, and 116.0 miles of 36-inch-diameter pipeline. There are several problems with this scenario. A 60-inch-diameter pipeline would require a deeper trench, larger spoil storage area, and wider right-of-way than the proposed pipeline. The typical right-of-way width for a 60-inch-diameter pipeline, excluding temporary extra workspace, is 125 feet. The additional right-of-way required for a 60-inch-diameter pipeline would increase land disturbance by about 67 percent. Another issue is that there are currently no 60-inch-diameter high-pressure gas transmission lines in the United States; therefore, it is unknown whether this size pipe could be handled or installed by the conventional equipment currently available to pipeline contractors in the United States. Additionally, because many mills do not have the capacity to fabricate pipe of that size, it may be difficult to ensure delivery of pipe in time for construction. For these reasons, a 60-inch-diameter pipeline is infeasible and would substantially increase environmental impact.

Dual-Loop Alternative - This alternative would involve construction of dual loops of pipeline with no additional compression. KRGT would need to install a total of about 1,366.3 miles of pipeline consisting of 406.5 miles of 48-inch-diameter dual-loop pipeline[2/], 118.5 miles of 42-inch-diameter single-loop pipeline,159.4 miles of 36-inch-diameter dual-loop pipeline, and 116.0 miles of 36-inch-diameter single-loop pipeline. The dual-loop pipeline would extend from the Muddy Creek Compressor Station to the Goodsprings Compressor Station. The remainder of the route would consist of a single loop.

Use of the dual-loop alternative would have some of the same problems as the single-loop alternative. The typical construction right-of-way width for the dual-loop sections excluding temporary extra workspace would be about 140 feet. This would result in an 87 percent increase in land disturbance in the areas where dual loops are necessary. The dual-loop alternative was eliminated from further consideration because it would substantially increase environmental impact.

Compression-only Alternative (No Looping)

Two possible scenarios were evaluated for the compression-only alternative as discussed below. One scenario would be to add compression exclusively at existing compressor stations. The other scenario would be to add compression by building additional compressor stations.

Additional Compression at Existing Compressor Stations - To accommodate the proposed Kern River 2003 Expansion Project delivery volumes safely by adding compression to KRGT's existing compressor stations, it is estimated that about 278,841 hp of additional compression would need to be added at KRGT's existing Muddy Creek, Elberta, Fillmore, Veyo, Goodsprings, and Daggett Compressor Stations. This additional compression would result in a discharge pressure downstream of the Daggett Compressor Station of about 1,220 psig and discharge pressures of between 1,696 and 2,047 psig downstream of the remaining stations. In all cases, the discharge pressure would exceed the MAOP of the existing KRGT pipeline system, which is 1,200 psig.

To increase the MAOP of the existing system to accommodate the required pressures, the existing pipeline would need to be replaced with new, thicker-walled pipe. In order to maintain a constant MAOP between stations and thus allow maximum line pack (*i.e.*, the amount of gas in the pipe), the entire existing

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2/ The term dual-loop pipeline refers to areas where KRGT would install two parallel pipelines in lieu of one larger diameter pipeline. This would double the length of pipe required in these areas. For example, 10 miles of dual-loop pipeline would require 20 miles of pipe.

KRGT pipeline would need to be replaced. If KRGT replaces only a partial section of existing pipeline downstream of each compressor station, line pack would not be maximized and pressure regulation would need to be installed where the MAOP decreases to ensure that the lower MAOP pipeline is not overpressured. Because a pressure deregulation system would require the pipeline to be closed off in the event that overpressure is detected, the reliability of the pipeline would be decreased. In either case, whether complete pipeline replacement or partial pipeline replacement were necessary, KRGT would need to take the existing pipeline out of service for an extended period of time. If this were to occur, KRGT's customers, such as Southwest Gas, would be adversely affected since they would be unable to meet their core load requirements. For these reasons, the compression-only alternative at existing compressor stations is infeasible and was eliminated from further consideration.

Additional Compressor Stations - In order to move the current contracted natural gas volumes as well as the additional volumes contracted for the Kern River 2003 Expansion Project without adding or replacing its pipeline, KRGT would need to have a total of 16 compressor stations generating 760,680 hp of compression. Because KRGT currently has six operational compressor stations, this alternative would require KRGT to build 10 new compressor stations. These stations would need to be located so that the MAOP of 1,200 psig is never exceeded at the discharge piping for each station. Assuming that KRGT uses Solar Mars 100 turbines to compress the natural gas, each with an average site-rated hp of 10,000, KRGT would need about 76 turbines to provide sufficient compression. These 76 turbines would be evenly distributed so that each of the 16 compressor stations would have 4 or 5 turbines.

There are several potential problems with this alternative. The compressor turbine suppliers do not have the manufacturing capacity to build 76 units by the dates needed to maintain KRGT's construction schedule. Another issue is that the 16 compressor stations, if powered by natural gas, would use about 135,000 Dth/d of gas in operation, which equates to a fuel consumption about five times higher than the proposed project. Therefore, the use of 76 turbines would fail to meet the project's delivery objectives because 15 percent of the required volume of natural gas to be delivered would be consumed by the compressors. This high consumption of natural gas would also increase air emissions by as much as 10 times the amount that would be emitted by the proposed project. Another problem would be the lower reliability of compression compared to pipeline. Compressor stations are generally taken offline (*i.e.*, temporarily shut down) more often than the pipeline for maintenance and repairs. This results in a higher degree of uncertainty associated with compression with respect to uninterrupted delivery.

Some of these impacts could be avoided or reduced by using electric motor-driven compressors. The advantage of electric motor-driven compressors over natural gas-fired turbines is that they have no direct air emissions. However, electric motor-driven compressors would have the same manufacturing capacity and delivery schedule limitations as turbines. Additionally, the operation of 76 electric-driven compressors would require about 850 megawatts of electricity. This would strain the existing electric generation supplies in the project area. The additional generating capacity would need to be relocated or new generating capacity would need to be built. Depending on the fuel source at the power plants, the electric motor-driven compressors may not decrease emissions overall but rather relocate the source of emissions from the compressor station to a power generating station.

Electric motor-driven compressors would have the added disadvantage of requiring high-voltage powerlines to power the compressors. These powerlines would disturb more land and cost more than the smaller powerlines needed to power natural gas-fired compressor stations. Electric compression units are generally less reliable than turbines because they depend on outside sources to supply power for generation. The availability of electric power can be affected by the demand of other consumers, equipment maintenance, and weather. If electricity is lost, the electric compressor units would not be able to run, which could affect KRGT's ability to deliver natural gas. Because of their lower demand for electricity, natural gas-fired turbines can continue to operate if power is lost by utilizing onsite back-up generators.

For all of these reasons, the additional compressor stations alternative using either natural gas-fired or electric motor-driven compressors was eliminated from further consideration.

3.3 ROUTE ALTERNATIVES

In its FERC application for the project, KRGT states that it conducted a detailed engineering and environmental analysis of the proposed pipeline route and determined that the most cost effective and least environmentally damaging design to deliver the contracted natural gas volumes to its customers would be to build a combination of pipeline looping and additional compression. KRGT describes two major factors that weighed into its decision. The first factor is that additional pipeline loops would not be necessary at two sensitive locations. One location is between MPs 96.4 and 124.5 where the existing KRGT pipeline crosses very steep terrain in the Wasatch Mountains north of Salt Lake City. The second location is between MPs 517.5 and 543.6 where the existing KRGT pipeline crosses Las Vegas and residences and commercial facilities have encroached on the existing pipeline right-of-way. The second factor is that it is possible to install the majority of the proposed pipeline 25 feet from the existing pipeline.

Route alternatives are identified to determine if impacts could be avoided or reduced on environmentally sensitive resources, such as scenic areas or wildlife management areas, that would be crossed by the proposed pipeline. While the origin and delivery points of route alternatives are generally the same as for the corresponding segment of the proposed pipeline, the route alternatives could follow significantly different alignments.

Six route alternatives are analyzed in this section as listed in table 3.3-1 (below). These alternatives were identified to respond either to concerns raised by agencies, to avoid sensitive resources, to address engineering issues, or to respond to comments on the draft EIS/EIR. Three of these alternative routes are adjacent to KRGT's existing pipeline in a location where the proposed route deviates from the existing pipeline. In the other three instances, the proposed route is located adjacent to KRGT's existing pipeline and the alternative route deviates from KRGT's existing pipeline. In addition to these six route alternatives, 12 minor route deviations were analyzed (see section 3.3.7).

TABLE 3.3-1

Route Alternatives Analyzed for the Kern River 2003 Expansion Project

State/Facility/Route Alternative	Corresponding Segment of the Proposed Route (MPs)	Alternative Adjacent to KRGT's Existing Pipeline
WYOMING		
Muddy Creek Loop Cumberland Gap Alternative	14.0 - 16.6	Yes
UTAH		
Salt Lake Loop Legacy Highway Alternative	140.6 - 143.6	Yes
Fillmore Loop Mineral Mountains/Pinnacle Pass Alternative	297.3 - 306.0	No
NEVADA		
Dry Lake Loop 2 Red Rock Canyon National Conservation Area Alternative	552.0 - 565.7	No
CALIFORNIA		
Goodsprings Loop Mojave National Preserve Alternative	590.4 - 593.8	Yes
Daggett Loop Edwards Air Force Base Alternative	50.9 - 69.2	No

3.3.1 Cumberland Gap Alternative

Between MPs 14.0 and 16.6 of the Muddy Creek Loop, the proposed route deviates from the existing KRGT pipeline. KRGT adopted this deviation in response to the BLM's request to investigate a route that would avoid sensitive resources along the existing KRGT pipeline in this area. As shown on figure 3.3.1-1 (page 3-9), the proposed route deviates from the existing KRGT pipeline at MP 14.0 on the west side of State Highway 412. From there it proceeds in a southwest direction across two washes and some low hills until it reaches a ranch road where the flatlands bordering Muddy Creek meet the foothills of a ridge known as the Hogsback. The proposed route then turns and proceeds south adjacent to the ranch road until it rejoins the existing KRGT pipeline at MP 16.6.

An alternative was evaluated in this area that would be adjacent to KRGT's existing pipeline. The Cumberland Gap Alternative remains adjacent to KRGT's existing pipeline and proceeds west across low hills for about 0.7 mile. It then descends from the hills and crosses Muddy Creek. After crossing the creek, it continues west across mostly flatlands for about 0.6 mile until it reaches U.S. Highway 189. Just east of the highway, it turns and proceeds south for about 1.9 miles adjacent to the east side of KRGT's existing pipeline until it ends at MP 16.6.

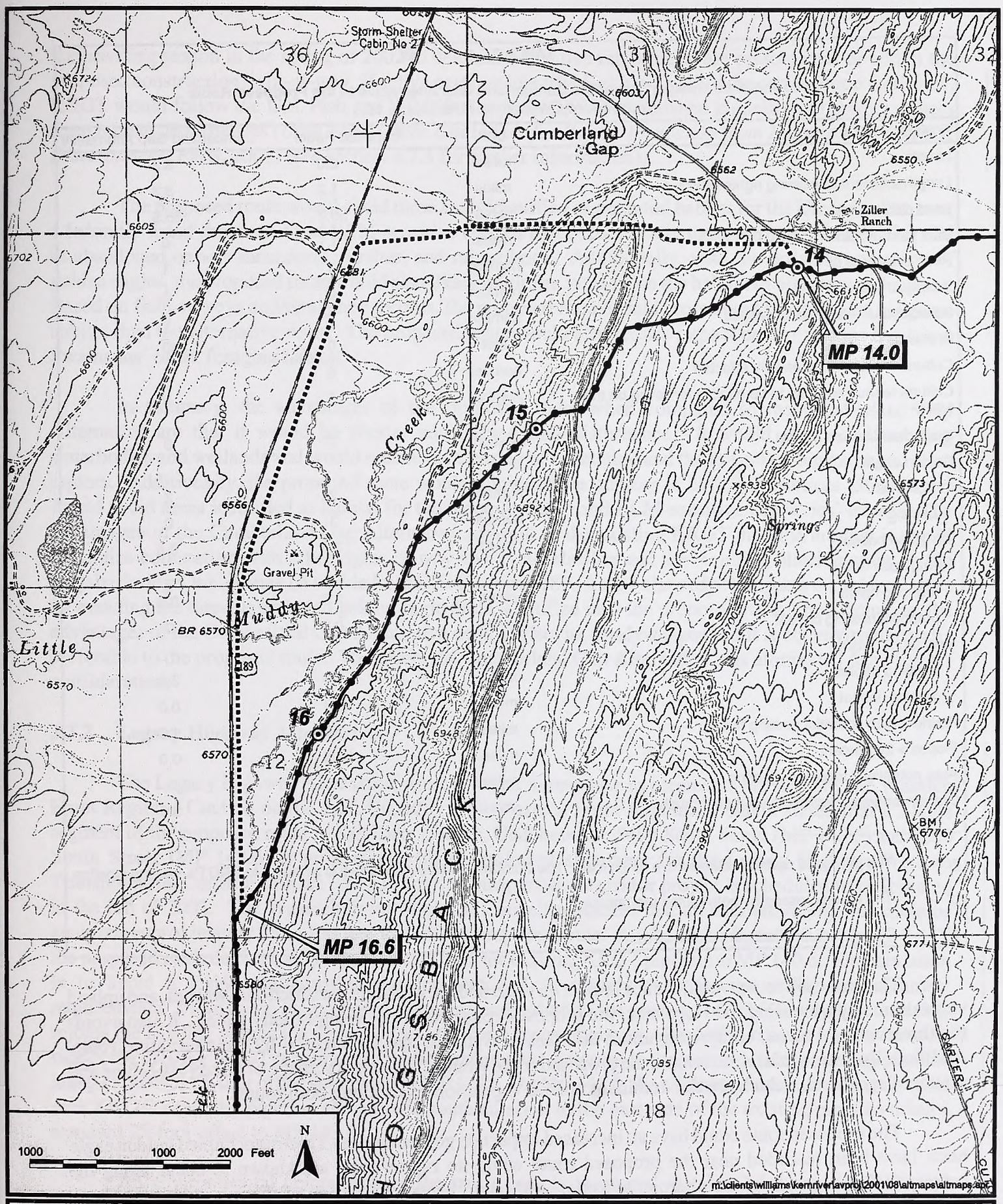
An environmental comparison of the two routes is presented in table 3.3.1-1 (page 3-10) and discussed below.

The proposed route is 0.7 mile shorter and would result in about 4.8 acres less land disturbance than the Cumberland Gap Alternative. The reduced length of the proposed route is offset somewhat by its creation of a new right-of-way. The proposed route would create about 1.4 miles of new right-of-way. The other 1.2 miles of the proposed route would be adjacent to an existing ranch road.

The primary engineering challenge for the proposed route would be the crossing of the Hogsback. Unlike the existing pipeline route, which was selected to minimize the steepness and length of the Hogsback crossing, the proposed route would cut diagonally across the Hogsback for about 3,600 feet. Much of the proposed route across the Hogsback would be on slopes greater than 20 percent. The alternative route adjacent to the existing pipeline would not cross any slopes greater than 20 percent. The proposed route also crosses large areas of exposed rock on the Hogsback, nearly all of which would need to be blasted. This blasting would probably leave a noticeable scar that would be more visible from U.S. Highway 189 than the existing route. Additionally, more right-of-way disturbance is generally required in areas where blasting is conducted, which may account for the smaller than expected difference in total land disturbance between the proposed and existing routes (less than 14 percent difference) despite the greater length of the alternative route.

About 1.1 miles of the proposed route are located on Federal land managed by the BLM Kemmerer Field Office, whereas the alternative route adjacent to the existing pipeline is located entirely on private land.

Both routes have the potential to affect cultural resources. Based on surveys, the proposed route would reduce the number of cultural resources crossed from 15 (found along the alternative route) to 6. Perhaps even more significant, the proposed route would reduce the number of affected cultural resources potentially eligible for listing on the National Register of Historic Places (NRHP) from six to one. Although the mere presence of a cultural resource along a route does not mean it would necessarily be affected nor preclude possible avoidance measures, such as minor reroutes, the greater density of cultural resources along the alternative route suggests that avoidance of all cultural resources in the vicinity of the alternative route adjacent to the existing pipeline would be more difficult.



Proposed Route

Alternative Route

Milepost

Figure 3.3.1-1
Kern River 2003 Expansion Project
Cumberland Gap Alternative
MPs 14.0 to 16.6

TABLE 3.3.1-1

Environmental Comparison of the Cumberland Gap Alternative to the Proposed Route Uinta County, Wyoming MPs 14.0 to 16.6

Environmental Factor	Unit	Proposed Route	Cumberland Gap Alternative
Length	miles	2.6	3.3
Length adjacent to existing rights-of-way a/	miles	1.2	3.3
Land disturbance	acres	30.7	35.5
BLM land (Kemmerer Field Office)	miles	1.1	0
Road crossings b/	number	1	1
Perennial waterbodies	number	0	1
Jurisdictional intermittent washes	number	8	6
Wetlands	feet	0	300
Cultural resources potentially affected	number	6	15
Cultural resources likely to be eligible for listing on the NRHP	number	1	6
Ute ladies' tresses habitat	locations	0	3
Golden eagle			
sightings	number	2	2
nests c/	number	3	0
Big game habitat	miles	2.6	3.5
Ferruginous hawk			
foraging habitat	miles	2.6	3.5
potential nesting habitat	miles	0.0	0
Swainsons' hawk			
foraging habitat	miles	2.6	3.5
nesting habitat	miles	0.0	0.0
Prairie falcon potential nesting habitat	miles	1.0	1.0
Slopes > 20 percent	miles	0.5	0.0
Area potentially requiring blasting	miles	0.5	0
Grassy rangeland with scattered sagebrush	miles	2.6	3.5

a/ The proposed route is adjacent to a ranch road. The Cumberland Gap Alternative is adjacent to KRGT's existing pipeline.

b/ The roads crossed by both routes are unpaved.

c/ The nests identified were unoccupied.

The proposed route would reduce impact on waterbodies, wetlands, jurisdictional washes, and upland vegetation. By traversing the Hogsback, the proposed route avoids crossing Muddy Creek. It also avoids the three wetland areas, comprising about 300 feet of wetland, that are crossed by the alternative route. Additionally, due to its shorter length, the proposed route would disturb less acreage of grassy rangeland and scattered sagebrush, which are the dominant upland vegetation types along both routes.

The proposed route could have an increased impact on golden eagles. Three unoccupied golden eagle nests have been recorded near the proposed route while no raptor nests are known to occur along the corresponding segment of the alternative route. Although the exact location of these nests has not been determined, they are believed to be within 1.0 mile of the proposed route. Golden eagles breed, nest, and raise their young between February and August. If any of the three nests are occupied during construction, golden eagle brood rearing could be adversely affected, particularly if blasting is necessary near an occupied nest. Potential impacts on raptors are discussed in section 4.7.3. Aerial surveys would be completed during

the breeding season in the spring of 2002 to determine if active raptor nests are present near or within the proposed construction right-of-way. If active nests are identified within 1 mile of the construction work area, KRGT would follow the U.S. Fish and Wildlife Service's (FWS) established guidelines to protect raptors from human disturbances (*Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances*; FWS, 2002) (see section 4.7.3 for further information).

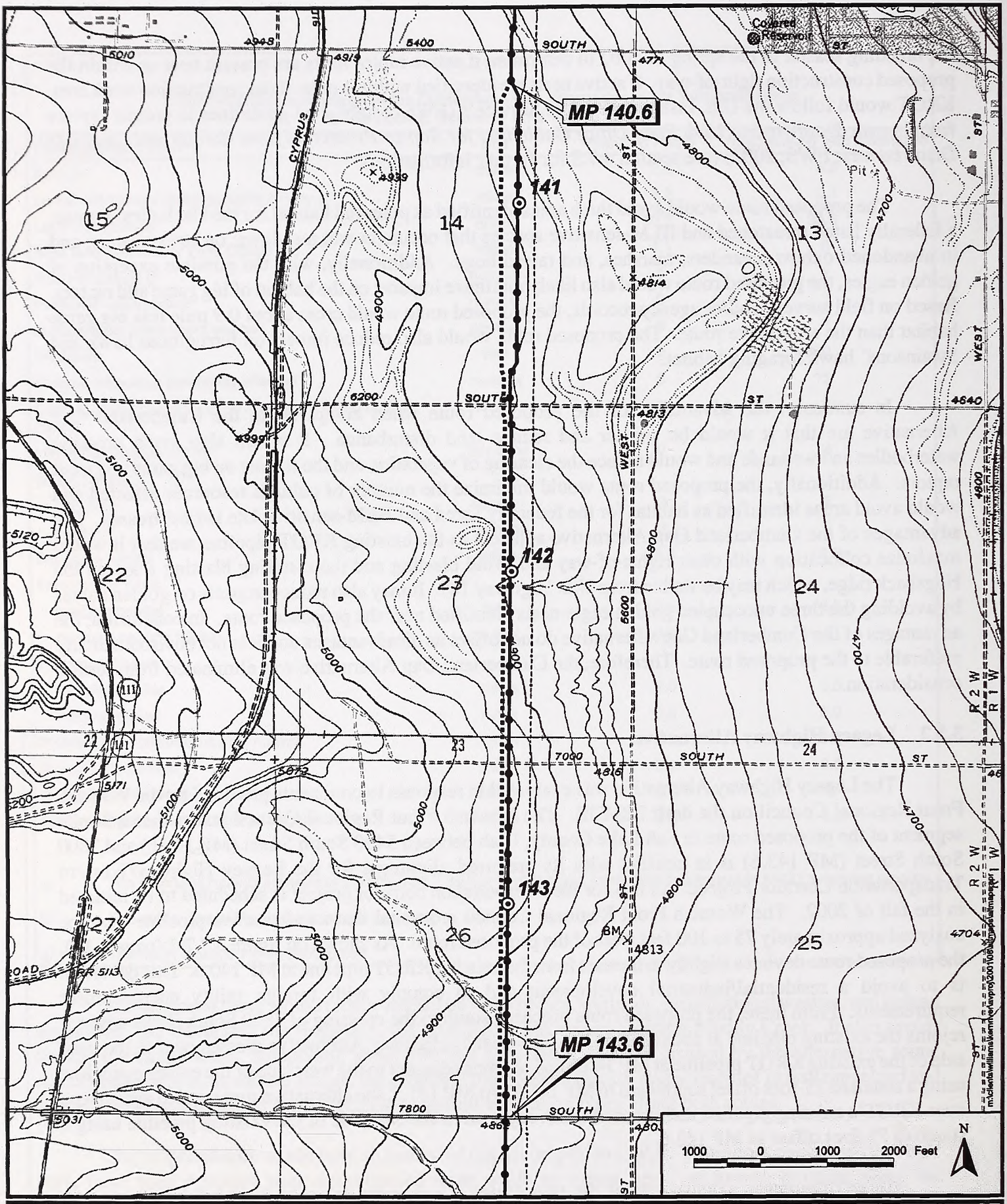
The proposed route would avoid three areas identified as potential habitat for the Ute ladies' tresses, a federally listed threatened and BLM-sensitive species that occurs in wet meadows; on streambanks; and in abandoned oxbow meanders, marshes, and raised bogs. Additionally, with the possible exception of golden eagles, the proposed route would also likely minimize impacts on the habitat of big game and raptors. Based on field surveys and/or agency records, the proposed route would cross about 0.9 mile less big game habitat than the alternative route. The proposed route would also reduce impact on ferruginous hawk and Swainsons' hawk foraging habitat.

In summary, the advantages of the proposed route when compared to the Cumberland Gap Alternative are that it would be shorter and reduce land disturbance. It would also avoid crossing waterbodies and wetlands and would reduce the clearing of vegetation and the impact on big game and most raptors. Additionally, the proposed route would minimize the number of cultural resources affected and would avoid areas identified as habitat for the federally listed and BLM-sensitive Ute ladies' tresses. The advantages of the Cumberland Gap Alternative adjacent to the existing KRGT pipeline are that it would maximize collocation with other rights-of-way and avoid blasting and the resulting blasting scars on the Hogsback ridge, which may be visible from U.S. Highway 189. It may also reduce impacts on golden eagles by avoiding the three unoccupied golden eagle nests identified near the proposed route. In conclusion, the advantages of the Cumberland Gap Alternative do not offset its disadvantages and it is not environmentally preferable to the proposed route. Therefore, the Cumberland Gap Alternative was eliminated from further consideration.

3.3.2 Legacy Highway Alternative

The Legacy Highway Alternative was evaluated in response to comments provided by the Wasatch Front Regional Council on the draft EIS/EIR. The Wasatch Front Regional Council stated that a 3-mile segment of the proposed route in Salt Lake County, Utah between 5400 South Street (MP 140.6) and 7800 South Street (MP 143.6) is in conflict with its preferred alignment for the Legacy Highway/Western Transportation Corridor Project. An EIS for the transportation corridor project is scheduled to be initiated in the fall of 2002. The Wasatch Front Regional Council requested that an alternative pipeline route be analyzed approximately 75 to 100 feet west of the proposed route. As shown on figure 3.3.2-1 (page 3-12), the proposed route deviates slightly to the east from the existing KRGT pipeline at MP 140.6. This deviation is to avoid a residential/industrial development and to comply with foreign utility encroachment requirements. From there, the proposed route proceeds south to the crossing of 7800 South Street where it rejoins the existing pipeline at about MP 143.6. The Legacy Highway Alternative crosses over to the west side of the existing KRGT pipeline at MP 140.6 and remains adjacent to the west side of the existing pipeline using a standard 25-foot offset southward to MP 141.5. At MP 141.5, the alternative route would again cross over KRGT's existing pipeline and proceed south adjacent to the east side of the existing pipeline using a standard 25-foot offset to MP 143.6.

An environmental comparison of the two routes is presented in table 3.3.2-1 (page 3-13) and discussed below.



Proposed Route

Alternative Route

Milepost

Figure 3.3.2-1
Kern River 2003 Expansion Project
Legacy Highway Alternative
MPs 140.6 to 143.6

TABLE 3.3.2-1

Environmental Comparison of the Legacy Highway Alternative to the Proposed Route Salt Lake County, Utah MPs 140.6 to 143.6

Environmental Factor	Unit	Proposed Route	Legacy Highway Alternative
Length	miles	3.0	3.0
Length adjacent to existing rights-of-way a/	miles	3.0	3.0
Land disturbance b/	acres	39.5	41.0
Land use cover type			
Maintained powerline right-of-way	miles	2.0	2.0
Agriculture	miles	1.0	1.0
Road crossings	number	6	6
Wetlands	feet	0	0
Jurisdictional washes	number	2	2
Cultural resources potentially affected	number	0	0
Liquefaction potential	miles	3.0	3.0
Residences within 50 feet of the construction work area	number	5	50

a/ The proposed route is adjacent to a powerline with a 70-foot offset from the existing KRGT pipeline. The Legacy Highway Alternative is adjacent to the existing KRGT pipeline using a standard 25-foot offset.

b/ Includes construction right-of-way and temporary extra workspace.

Both the proposed route and the Legacy Highway Alternative would be 3 miles long and would be adjacent to existing rights-of-way for their entire lengths. The proposed route is adjacent to a PacifiCorp powerline while the alternative is adjacent to the existing pipeline. KRGT proposed the deviation from its pipeline at the request of PacifiCorp, the owner of the powerline utility corridor in this area, and to avoid a developed area. PacifiCorp requested that KRGT place its new pipeline further from its existing pipeline to allow for future expansion of the powerlines.

The proposed route and the Legacy Highway Alternative would disturb similar amounts and types of land and would result in the same number of road crossings. Other environmental factors, including the amount of wetland affected, the number of jurisdictional washes crossed, and the number of cultural resources potentially affected, are the same for both the proposed and alternative routes. Both routes would also cross areas with the potential for liquefaction. The impacts associated with liquefaction and KRGT's proposed mitigation measures are described in section 4.1.4.1. The main difference between the proposed route and the Legacy Highway Alternative is the number of residences located within 50 feet of the construction work area. As discussed above, one of the reasons KRGT incorporated an increased offset from the existing pipeline in this area was to avoid a residential/industrial development. The Legacy Highway Alternative would be located within 50 feet of 45 more residences than the corresponding segment of the proposed route. As discussed in section 4.8.4, residences within 50 feet of the construction work area would be most likely to experience the effects of construction and operation of the project. The proposed route increases the separation between the pipeline and these 45 residences to between 95 and 170 feet.

The purpose of the Legacy Highway Alternative is to leave the utility corridor open for the preferred alignment of the Legacy Highway/Western Transportation Corridor. As described above, the environmental analysis of this alternative compared to the proposed route shows that both routes would have similar types of impacts. Because the proposed route would reduce the construction effects on 45 residences, the Agency Staffs have determined that the proposed route is environmentally preferable.

3.3.3 Mineral Mountains/Pinnacle Pass Alternative

The Mineral Mountains/Pinnacle Pass Alternative on the Fillmore Loop was identified in response to the BLM Cedar City Field Office's request to investigate an alternative route that would avoid the steep slopes and critical mule deer winter range along the proposed route adjacent to the existing KRGT pipeline between MPs 297.3 and 306.0. As shown on figure 3.3.3-1 (page 3-15), the alternative deviates from the proposed pipeline route at MP 297.3, and proceeds northwest and then west and southwest adjacent to the south side of Black Rock Road for about 5.8 miles. After skirting around the north side of Antelope Mountain, the alternative separates from the road right-of-way and proceeds south for about 6.0 miles along the western flank of Antelope Mountain and the northern Mineral Mountains until it rejoins the proposed route south of Pinnacle Pass at MP 306.0.

The corresponding segment of the proposed route remains adjacent to KRGT's existing pipeline and proceeds southwest for about 5.3 miles across predominantly flatlands associated with Cove Creek and its tributaries. It then turns further west and proceeds across the Mineral Mountains at Pinnacle Pass. Once over the pass, it descends the west side of the mountains for about 2.7 miles until it ends at MP 306.0.

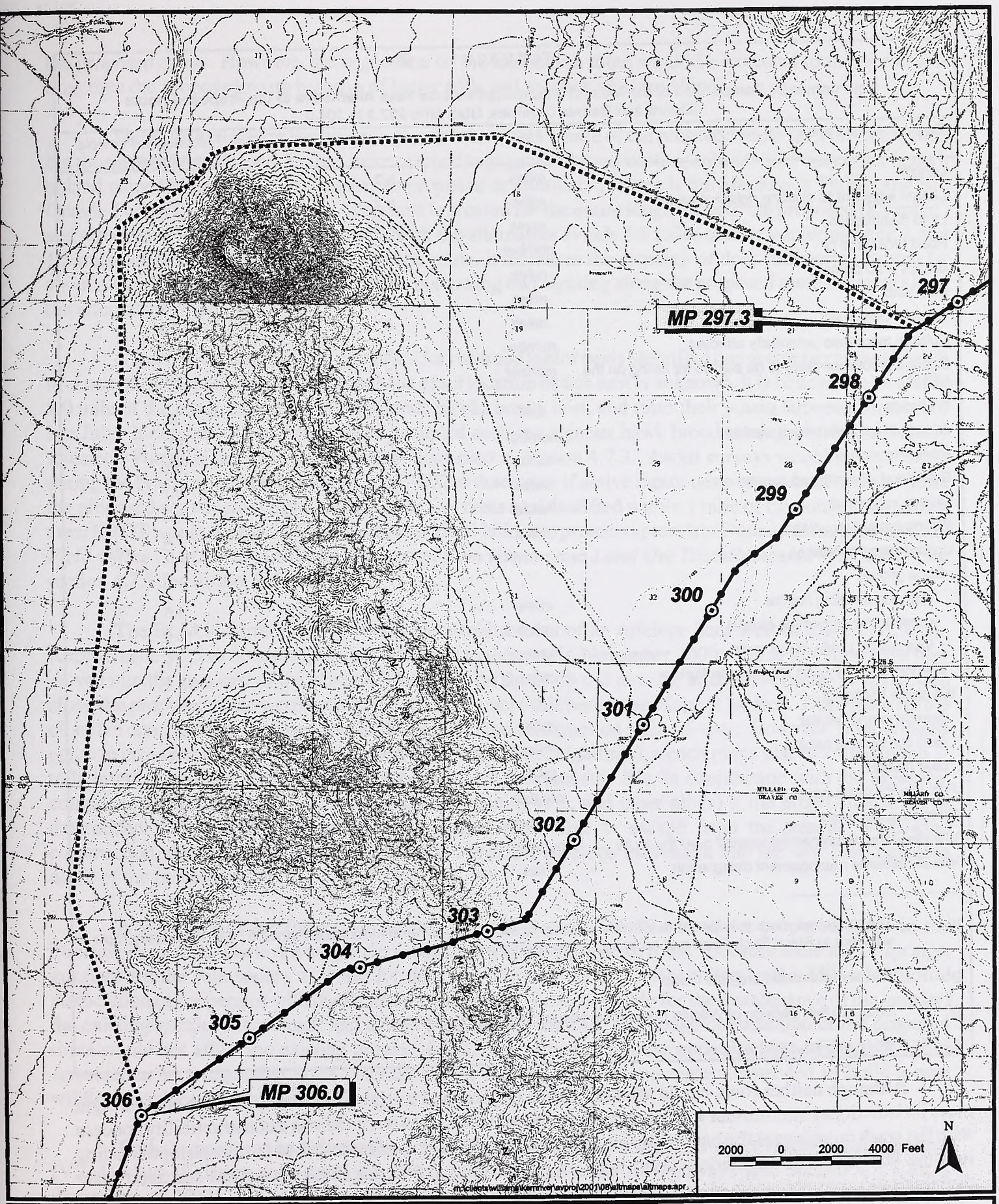
An environmental comparison of the two routes is presented in table 3.3.3-1 (page 3-16) and discussed below.

The Mineral Mountains/Pinnacle Pass Alternative is 4.4 miles longer and would result in about 42.4 acres more land disturbance than the proposed route adjacent to the existing KRGT pipeline. Although the alternative would create about 5.6 miles of new right-of-way in an area currently affected only by a sparse network of unimproved ranch roads, the disturbance associated with the alternative route would occur in an area recently burned by wildfires.

The alternative crosses 10 more roads than the proposed route. However, it poses fewer challenges than the proposed route with regard to other engineering issues. By circumventing the Mineral Mountains, the alternative route avoids steep slopes and traverses mostly flat or gently sloping terrain. The primary engineering challenge for the proposed route would be the crossing of Pinnacle Pass. About 0.5 mile of the route over Pinnacle Pass consists of slopes greater than 20 percent. Another issue that would complicate construction along the proposed route is the washes that would be crossed at the base of each side of the mountains. The depth of the pipeline at these wash locations would need to be increased to prevent scouring and exposure of the pipeline.

While both routes cross Federal lands that are managed by the BLM, the alternative would increase the crossing of Federal lands by about 1.9 miles, and would cross about 0.6 mile of state land. However, the state land is not subject to any special restrictions (Brown, 2001).

Surveys identified cultural resources along both the alternative and proposed routes. The alternative could potentially affect twice the number of cultural resources as the proposed route. However, it would also reduce the number of cultural resources potentially eligible for listing on the NRHP from seven to three. Although the mere presence of a cultural resource along a route does not mean it would necessarily be affected nor preclude possible avoidance measures such as minor reroutes, the density of cultural resources that may be potentially eligible along the proposed route suggests that avoidance of all cultural resources in the vicinity of the proposed route would be more difficult than along the alternative route.



Proposed Route

Alternative Route

Milepost

Figure 3.3.3-1
Kern River 2003 Expansion Project
Mineral Mountains/Pinnacle Pass Alternative
MPs 297.3 to 306.0

TABLE 3.3.3-1

Environmental Comparison of the Mineral Mountains/Pinnacle Pass Alternative to the Proposed Route Millard and Beaver Counties, Utah MPs 297.3 to 306.0

Environmental Factor	Unit	Proposed Route	Mineral Mountains/Pinnacle Pass Alternative
Length	miles	8.7	13.1
Length adjacent to existing rights-of-way a/	miles	8.7	7.5
Land disturbance	acres	88.8	131.2
Road crossings b/	number	11	21
Slopes > 20 percent	miles	0.5	0.0
BLM land	miles	8.6	10.5
State of Utah land	miles	0	0.6
Cultural resources potentially affected	number	9	18
Cultural resources likely to be eligible for listing on the NRHP	number	7	3
Wetlands	feet	0	0
Jurisdictional intermittent washes	number	2	10
Dense sagebrush	miles	5.8	5.0
Grassland w/ scattered sagebrush	miles	0.0	0.7
Grassy rangeland	miles	1.5	6.0
Pinyon-juniper woodland	miles	1.4	1.4
Upland game habitat c/			
Sage grouse			
mapped strutting habitat	miles	0.0	1.6
mapped brood/nesting habitat	miles	0.4	4.9
leks within 1 mile of the route	number	4	1
Merriam's Turkey and Rio Grande Turkey	miles	8.7	13.1
Big game habitat c/			
deer wintering habitat	miles	4.5	0.0
deer summering habitat	miles	3.5	7.1
bear habitat	miles	1.5	0.0
Ferruginous hawk nests d/	number	0	1
Burrowing owl nests	number	1	0
Wildlife water catchment(s) located near the route	number	1	0
Visual resource management designation	class	IV	IV

a/ The proposed route is adjacent to KRGT's existing pipeline. The Mineral Mountains/Pinnacle Pass Alternative route is adjacent to Black Rock Road and an existing fiber optic line.

b/ The roads crossed are field roads.

c/ Source: Utah Division of Wildlife Resources, Natural Heritage Program

d/ The nests identified were active.

Although neither route would affect wetlands or perennial waterbodies, the alternative crosses eight more jurisdictional intermittent washes than the proposed route. However, there is a constructibility concern with the wash crossings at the base of the mountains along the proposed route due to the steep slopes leading into the washes. The vegetation along both routes includes sagebrush (both dense and scattered plant distributions), grassy rangeland, and pinyon-juniper woodlands. The amounts of pinyon-juniper woodlands and sagebrush habitat crossed by the two routes are similar, although about 0.8 mile more dense sagebrush habitat occurs along the proposed route. The greatest difference between the two routes with respect to impact on vegetation would be that the alternative would disturb about 4.5 miles more grassy rangeland than

the proposed route. However, the vegetation on the alternative route would be expected to recover in less time than the proposed route because of better soils and the lack of steep slopes.

There are three more known sage grouse leks within 1 mile of the proposed route than the alternative but the alternative crosses 4.5 miles more mapped sage grouse brood/nesting habitat. The only other known upland game habitat crossed by either the proposed or alternative routes is the Merriam's Turkey and Rio Grande Turkey Common Use Area. This area is crossed for the entire length of both the proposed (8.7 miles) and alternative (13.1 miles) routes. Although the alternative avoids 4.5 miles of deer wintering habitat and 1.5 miles of bear habitat along the proposed route, it increases the crossing of deer summering habitat by about 3.6 miles. Surveys identified a single burrowing owl sighting along the proposed route but none along the alternative route.

A search of state and BLM databases for recorded raptor nests identified one active ferruginous hawk nest near the alternative route. Although the exact location of this nest is unknown, it is believed to be within 1.0 mile of the alternative route. Ferruginous hawks breed, nest, and raise their young between March and late July. If construction occurs near an occupied nest, ferruginous hawk brood rearing could be adversely affected. Potential impacts on raptors are discussed in section 4.7.3. Aerial surveys would be completed during the breeding season in the spring of 2002 to determine if active raptor nests are present near or within the proposed construction right-of-way. If active nests are identified within 1 mile of the construction work area, KRGT would follow the FWS' established guidelines to protect raptors from human disturbances (*Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances*; FWS, 2002) (see section 4.7.3 for further information).

The BLM is currently involved in the establishment of an antelope herd west of Cove Fort, Utah. Approximately 25 to 30 antelope were relocated to the area in November 2000. These antelope have now moved into the area east of the Mineral Mountains on the north end near the alternative route. Construction along the proposed route would take place south of where this herd of antelope is located. During the period of active construction, antelope would likely avoid the construction right-of-way. However, if individuals opted to cross the right-of-way during non-work hours (*i.e.*, nighttime), trench plugs placed at maximum 1-mile intervals along the trench would facilitate such movements. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal movement or escape from the trench. Following construction, the disturbed right-of-way would not affect antelope movement into the new herd unit area north of the project.

A wildlife guzzler (water catchment) is located about 600 feet from the proposed route in the Pinnacle Pass area. There are no guzzlers located along the alternative route. Because there are no springs, guzzlers are the sole source of water for deer and birds in this area. According to the Milford Wildlife Association (a cooperator with the BLM on these waters and responsible for the maintenance of the guzzler) the existing guzzler is too small and dries up during the summer. Although construction of the proposed route would not affect the existing guzzler, KRGT has agreed to reimburse the BLM or Milford Wildlife Association for reasonable costs associated with the construction and materials needed to build a new wildlife guzzler in the area.

Both the proposed and alternative routes would cross BLM-designated visual resource management (VRM) class IV lands and would be visible from various roads or highways (see section 4.8.7 for a discussion of VRM designations). The proposed route would be visible to travelers on Interstate 15, Highway 257, and Black Rock Road. Views from southbound Interstate 15 and Highway 257 would be from distances of approximately 8 to 12 miles away and only for brief periods. Travelers on Interstate 15 would have a 10 to 12 second view of the pipeline at speeds of 65 miles per hour (mph). The views from both Highway 257 and Interstate 15 would be background views with the pipeline not being the dominant visual

feature from either viewpoint. Travelers on Black Rock Road would see the proposed route intermittently to the north and south as the route approaches the road crossing at about MP 297.3. While the proposed route would be visible in these areas, it would be located adjacent to the existing KRGT pipeline and would not create a new visual right-of-way. In contrast, the alternative route would create a new visual right-of-way. The principal vantage point for the alternative route would be from Black Rock Road. A traveler on Black Rock Road would have intermittent views of the alternative route for about a 20-minute period of time traveling at speeds of about 15 to 20 mph. The alternative route would not be visible from Interstate 15 or Highway 257.

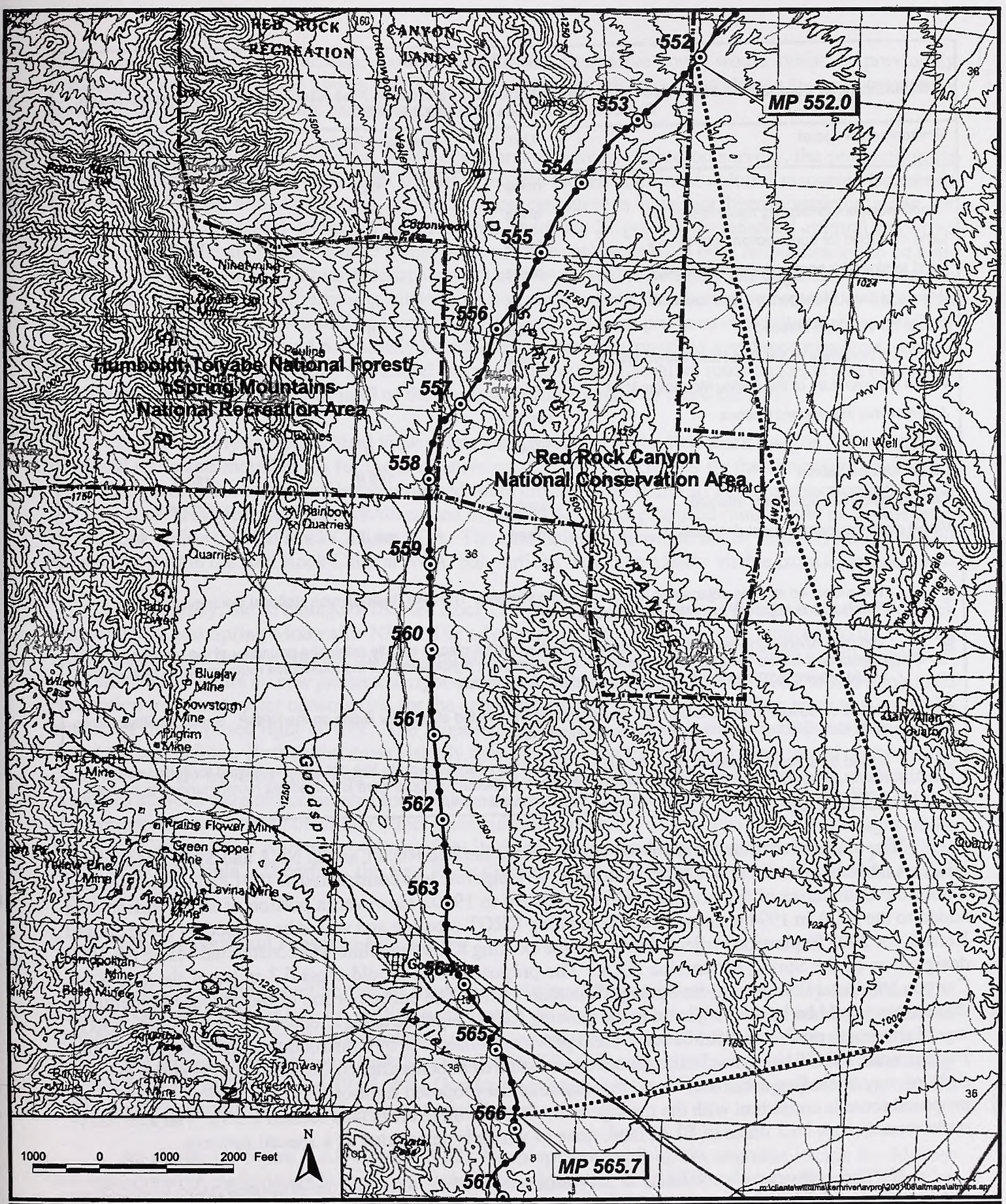
In summary, the advantages of the Mineral Mountains/Pinnacle Pass Alternative are that it avoids the steep terrain of Pinnacle Pass, can be expected to recover quicker, reduces the number of known sage grouse leks near the route, avoids deer wintering habitat and bear habitat, and may reduce impacts on burrowing owls. The advantages of the proposed route adjacent to the existing KRGT pipeline are that it is shorter, reduces land disturbance, maximizes collocation with existing rights-of-way, and would not create a new visual right-of-way. Further, the proposed route reduces the crossing of Federal lands, roads, and washes. It also reduces impacts on mapped sage grouse brood/nesting habitat and deer summering habitat and may reduce impact on ferruginous hawks. Based on the information described above, both routes have several different advantages but neither route provides a clear environmental advantage. The Mineral Mountains/Pinnacle Pass Alternative is clearly a viable alternative route that is being seriously considered by the BLM. However, as previously discussed, one of the evaluation criteria for determining if an alternative is environmentally preferable to the proposed action is that the alternative must provide a significant environmental advantage over the proposed action. Because the Mineral Mountains/Pinnacle Pass Alternative does not present a significant environmental advantage over the proposed route, for the purposes of this document, the Agency Staffs have determined that the proposed route (which is adjacent to the existing pipeline) is the environmentally preferable alternative.

3.3.4 Red Rock Canyon National Conservation Area Alternative

The Red Rock Canyon NCA Alternative on the Dry Lake Loop 2 was identified in response to the BLM's request to investigate a route that would avoid the Red Rock Canyon NCA, which is crossed by the existing KRGT pipeline between MPs 552.1 and 557.4. As shown on figure 3.3.4-1 (page 3-19), the alternative would deviate from the proposed route at MP 552.0 near the southeast boundary of the Red Rock Canyon NCA. From there it proceeds in a southeast direction along the eastern flank of the southern edge of the Bird Spring Range. The alternative route would then turn to the west along the southern flank of the Bird Spring Range until it rejoins the existing KRGT pipeline at MP 565.7. Although the length of KRGT's existing crossing of the Red Rock Canyon NCA is only 5.3 miles, a much longer route alternative is required because of the size and orientation of the Red Rock Canyon NCA and the need to avoid steep slopes associated with the Bird Spring Range Mountains.

An environmental comparison of the two routes is presented in table 3.3.4-1 (page 3-20) and discussed below.

The Red Rock Canyon NCA Alternative is 2.5 miles longer and would result in about 36.4 acres more land disturbance than the corresponding segment of the proposed route. The alternative route would be adjacent to existing rights-of-way for only about 9 percent of its length compared to 100 percent for the corresponding portion of the proposed route. The permanent right-of-way for the proposed pipeline would be placed exactly within the boundary of the permanent right-of-way for the existing KRGT pipeline and would not result in any additional permanent disturbance. The alternative route would create a new right-of-way in a previously undisturbed area that would require a 50-foot-wide permanent right-of-way, encumbering 98.2 acres of land.



Proposed Route
Alternative Route
Special Management Area
Milepost

Figure 3.3.4-1
Kern River 2003 Expansion Project
Red Rock Canyon National Conservation Area Alternative
MPs 552.0 to 565.7

TABLE 3.3.4-1

Environmental Comparison of the Red Rock Canyon National Conservation Area Alternative to the Proposed Route Clark County, Nevada MPs 552.0 to 565.7

Environmental Factor	Unit	Proposed Route	Red Rock Canyon National Conservation Area Alternative
Length	miles	13.7	16.2
Length adjacent to existing rights-of-way a/	miles	13.7	1.4
Land disturbed for construction right-of-way	acres	149.9	186.3
Land retained for permanent right-of-way b/	acres	0.0	98.2
Bureau of Land Management land crossed	miles	12.8	16.2
Forest Service land crossed	miles	0.9	0.0
Within the boundary of the Red Rock Canyon NCA	miles	5.3	0.0
Within the boundary of the Spring Mountains NRA	miles	0.9	0.0
Jurisdictional intermittent washes	number	1	0
Wetlands	feet	0	0
Desert tortoise habitat	acres	149.9	186.3
Cultural resources potentially affected	number	1 c/	1 d/
Visual resource management designation	class	II and III	III

a/ The proposed route is adjacent to KRGT's existing pipeline. The Red Rock Canyon National Conservation Area Alternative is adjacent to an unpaved road.

b/ The permanent right-of-way for the proposed route would be placed exactly within the boundary of the permanent right-of-way for the existing KRGT pipeline. The permanent right-of-way for the alternative route would be new, which would require a 50-foot-wide right-of-way for pipeline operation.

c/ Based on cultural resources surveys, one site is recommended eligible for listing on the NRHP. Seven additional sites were identified but recommended to be non-significant.

d/ Based on a literature search, one site within 1 mile of the alternative route has not been evaluated for listing on the NRHP. Twenty-one additional sites within 1 mile of the alternative route were identified but recommended to be non-significant. Surveys were not conducted for the alternative route.

The alternative route would avoid crossing both the Red Rock Canyon NCA and Spring Mountains NRA. As discussed in section 4.8, the existing KRGT pipeline was constructed in 1991 and was not located within the boundaries of the original NCA established in 1990. However, a portion of an expansion area added to the NCA in 1994 encompassed the existing KRGT pipeline and would be crossed by the proposed Kern River 2003 Expansion Project. Similarly, the existing KRGT pipeline was constructed before the 1993 designation of the Spring Mountains NRA. The proposed route would cross 5.3 miles of the Red Rock Canyon NCA and 0.9 mile of the Spring Mountains NRA. The entire portion of the proposed pipeline in these areas would be located adjacent to the existing KRGT pipeline using a reduced 20-foot offset. KRGT would attempt to minimize disturbance to areas previously disturbed by construction of the existing pipeline. Furthermore, KRGT has agreed to implement restoration treatments after construction for the entire existing right-of-way, including areas that would be outside of the proposed right-of-way (see section 4.5.2.1). The proposed route is consistent with the management plans for these areas (see section 1.5.1). The alternative route would cross 16.2 miles of BLM land, none of which is designated as a special use area.

Neither route crosses wetlands or perennial waterbodies, although the proposed route would cross one jurisdictional intermittent wash. The vegetation along the two routes is similar and consists mainly of Mojave mixed scrub, creosote bursage, and blackbush scrub. Because the proposed route and alternative route cross similar habitats, and based on the 2001 field surveys of the proposed route, the alternative route may cross known habitats for the desert tortoise, wild horses, Yellow two-tone beardtongue, and moderate density cacti and yucca. The alternative route would affect more desert tortoise habitat than the proposed

route. In addition, the disturbance associated with the alternative route would occur in previously undisturbed areas. As stated above, KRGT would attempt to minimize disturbance to areas previously disturbed by construction of the existing pipeline.

Both routes have the potential to affect cultural resources. Based on surveys, the proposed route would potentially affect one significant cultural resource (seven additional cultural resources have been recommended to be non-significant). Cultural resources surveys have not been completed along the alternative route, but based on background research, there are 22 previously recorded cultural resources within 1 mile of the alternative route. Twenty-one of these resources have been recommended to be non-significant. The remaining cultural resource has not been evaluated to determine its eligibility for listing on the NRHP. Should cultural resources surveys be completed along the alternative route, it is likely that additional cultural resources would be identified. Although the mere presence of a cultural resource along a route does not mean it would necessarily be affected nor preclude possible avoidance measures, such as minor reroutes, the greater density of cultural resources along the alternative route suggests that avoidance of all cultural resources in the vicinity of the alternative route would be more difficult.

A visual analysis from critical view points was conducted in the Red Rock Canyon NCA along the proposed route and Interstate 15 for the alternative route. The land crossed by the alternative route has a VRM designation of class III while the proposed route crosses class II and III lands (see section 4.8.7 for a discussion of VRM designations). As discussed in section 4.8.7, the proposed route would be visible from an overlook within the Red Rock Canyon NCA. The alternative route would not be visible from any critical viewpoints within the Red Rock Canyon NCA, but portions would be clearly visible from Interstate 15.

In summary, the advantage of the Red Rock Canyon NCA Alternative is that it avoids the Red Rock Canyon NCA and Spring Mountains NRA. The advantages of the proposed route adjacent to the existing KRGT pipeline are that it is shorter, reduces land disturbance, maximizes collocation with existing rights-of-way, and would require no new permanent right-of-way. Another advantage is that KRGT would implement restoration treatments after construction for the entire existing right-of-way, including areas that would be outside of the proposed right-of-way. The proposed route also reduces the crossing of Federal lands and desert tortoise habitat. Both routes cross visually sensitive areas but the proposed route would not be visible from the heavily traveled Interstate 15. Because of the advantages of the proposed route, full cultural resources surveys were not completed for the alternative route. However, a literature search indicated that the alternative route could potentially affect more cultural resources. In conclusion, the advantages of the Red Rock Canyon NCA Alternative do not offset its disadvantages and it is not environmentally preferable to the proposed route. Therefore, the Red Rock Canyon NCA Alternative was eliminated from further consideration.

3.3.5 Mojave National Preserve Alternative

KRGT's existing pipeline crosses the Mojave National Preserve for approximately 1.8 miles. The Mojave National Preserve is a 1.6 million-acre unit of the National Park System that was established on October 31, 1994 (after the existing pipeline was constructed) under the 1994 Desert Wilderness Protection Act. At the request of the National Park Service (NPS), KRGT incorporated a deviation from the existing pipeline between MPs 590.4 and 593.8 of the Goodsprings Loop that would locate the proposed loop outside of the northern boundary of the Mojave National Preserve.

As shown on figure 3.3.5-1 (page 3-22), the proposed route in this segment avoids the Mojave National Preserve by deviating from the existing KRGT pipeline at MP 590.4 and proceeding northwest for about 0.4 mile until it crosses an access road and several powerlines. After crossing the powerlines, the proposed route turns and proceeds west and then southwest adjacent to the powerline corridor for about 2.7 miles. It then turns, crosses the powerlines, and proceeds south for about 0.3 mile until it rejoins the existing KRGT pipeline at MP 593.8. The Mojave National Preserve Alternative remains adjacent to KRGT's existing pipeline, mostly across the Mojave National Preserve until it ends at about MP 593.8.

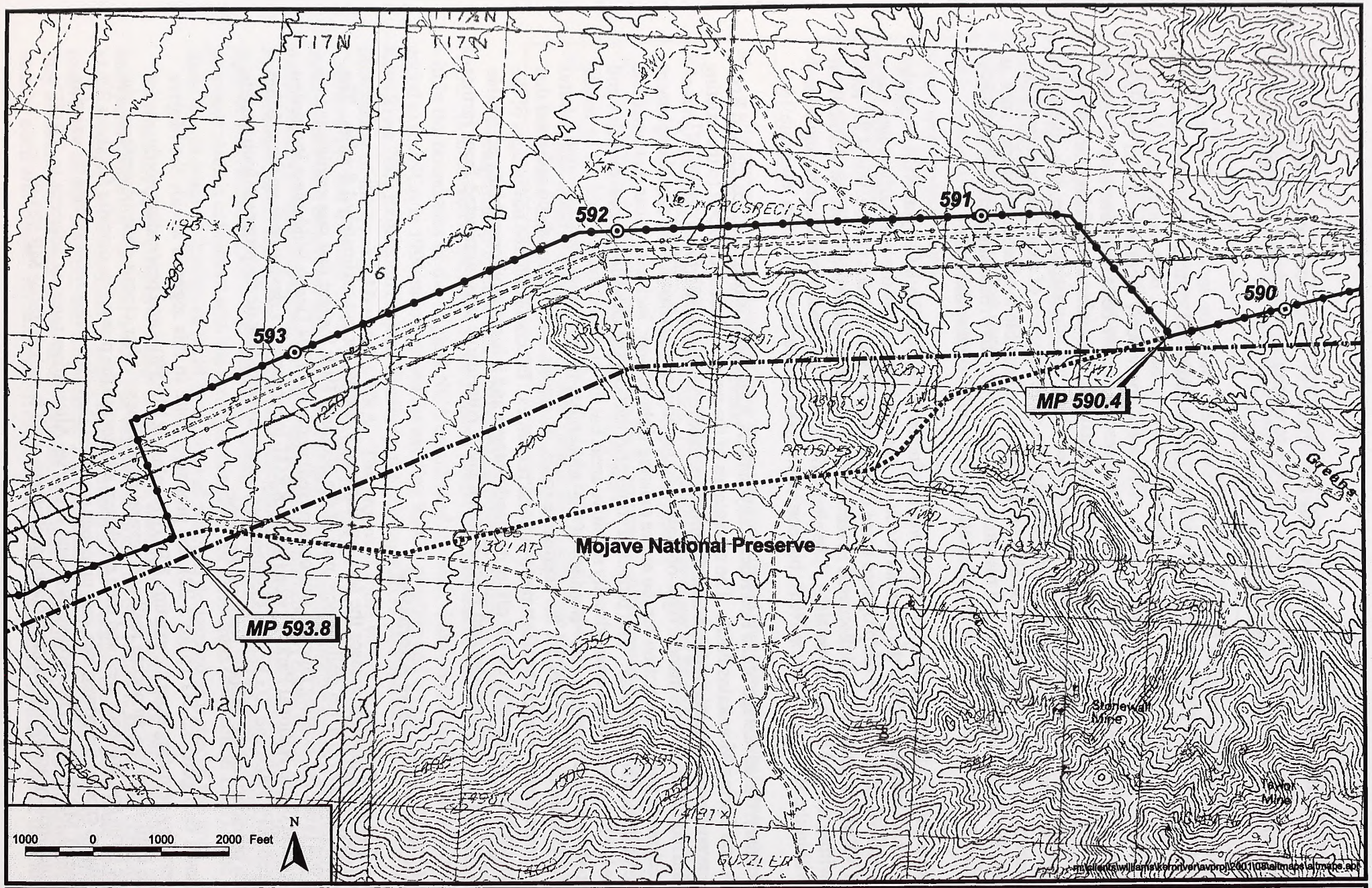


Figure 3.3.5-1
Kern River 2003 Expansion Project
Mojave National Preserve Alternative
MPs 590.4 to 593.8

The major advantage of the proposed route is that it avoids NPS land and the Mojave National Preserve, which satisfies the requirements of the NPS. Because the Mojave National Preserve Alternative crosses the Mojave National Preserve, it is not considered a feasible alternative. Therefore, the Mojave National Preserve Alternative was eliminated from further consideration.

3.3.6 Edwards Air Force Base Alternative

The Edwards Air Force Base (AFB) Alternative on the Daggett Loop was identified to reduce the number of roads and utilities crossed by the existing pipeline. The alternative deviates from the existing KRGT/Mojave Common System pipeline at MP 50.9 and proceeds west for about 17.9 miles across predominantly flatlands until it rejoins the proposed route adjacent to the KRGT/Mojave Common System pipeline right-of-way at MP 69.2 (see figure 3.3.6-1, sheets 1 through 3 (pages 3-24 through 3-26)). For 16.5 miles, the alternative is located on the base property. Except at the highway interchanges for Clay Mine Road and Rosamond Boulevard and the crossing of the Atchison, Topeka, and Santa Fe Railroad where it is next to railroad or road rights-of-way, the alternative is adjacent to the south side of an All American Pipeline [3/] right-of-way, which is south of State Route 58.

The corresponding segment of the proposed route largely avoids the base property by proceeding northwest for about 0.5 mile and crossing in succession the Atchison, Topeka, and Santa Fe Railroad, 20 Mule Team Road, and the existing KRGT/Mojave Common System pipeline. It then turns and proceeds west across flatlands adjacent to the existing pipeline for about 3.6 miles to State Route 58. After crossing to the north side of the highway, it continues west adjacent to the existing pipeline for about 14.0 miles. It then turns, crosses State Route 58 again, and proceeds south adjacent to the existing pipeline for about 0.1 mile until it ends at about MP 69.2.

An environmental comparison of the two routes is presented in table 3.3.6-1 (page 3-27) and discussed below.

Both routes are adjacent to other existing rights-of-way for their entire length. However, the alternative would be 0.3 mile shorter and would disturb 6.1 fewer acres than the proposed route. Because the proposed route would be located adjacent to KRGT's existing pipeline for its entire length, the new permanent right-of-way would be 25 feet wide, encumbering 55.2 acres of land. The alternative route would be adjacent to a foreign pipeline (All American Pipeline) and would require a new 50-foot-wide permanent right-of-way, encumbering 108.5 acres of land.

Neither the alternative nor the proposed route poses any major engineering difficulties, and the terrain along both routes is relatively flat. Both routes include one crossing of the Atchison, Topeka, and Santa Fe Railroad. However, the proposed route would require more road and pipeline crossings than the alternative. These crossings would involve the use of specialized construction techniques, which would slow the progress of construction. Another constructibility issue is that the proposed route would require 12 more miles of "backwards construction" than the alternative. Backwards construction is caused by the asymmetrical design of the sideboom tractors, which are used to lift, move, and lower the pipeline into the trench. When operating in the forward direction (*i.e.,* the operator facing forward), the sideboom and trench are on the left. Because the majority of the proposed pipeline would be located south of the existing pipeline, the natural direction of the construction spread would be to have the working side of the right-of-way (*i.e,* the side of the right-of-way generally further away from the adjacent utility) on the south side of the trench and work from west to east. Because several miles of the route adjacent to the existing pipeline are located north of the existing pipeline, these sections would need to be constructed by operating the sideboom tractors in reverse, or backwards, which is a more difficult and time-consuming process than forward construction.

[3/] The All American Pipeline is a former crude oil pipeline owned by El Paso. El Paso plans to convert the pipeline to be able to transport natural gas. KRGT has no relationship to the pipeline other than as a possible interconnect to provide natural gas.

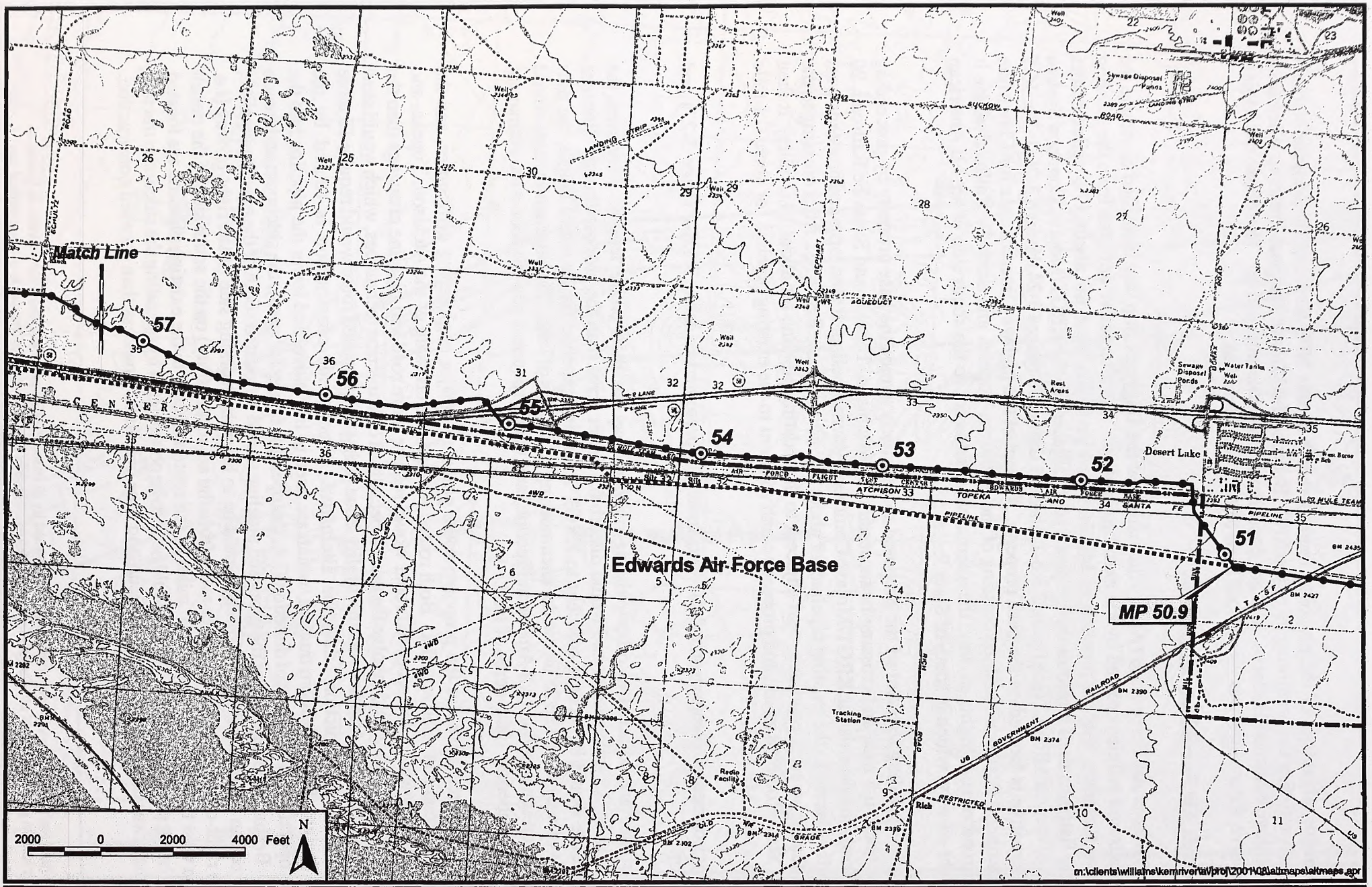
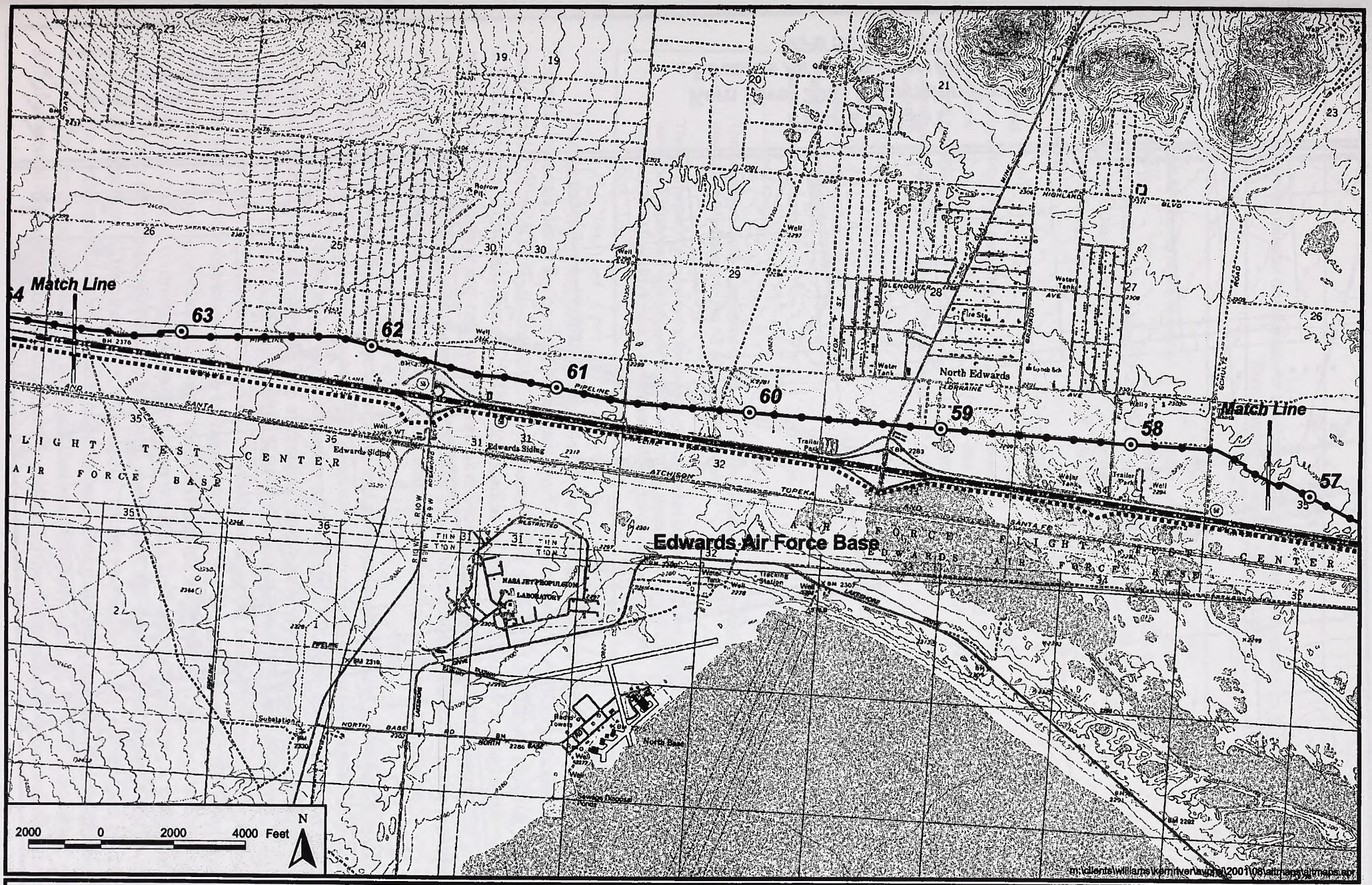


Figure 3.3.6-1
Kern River 2003 Expansion Project
Edwards Air Force Base Alternative
MPs 50.9 to 69.2

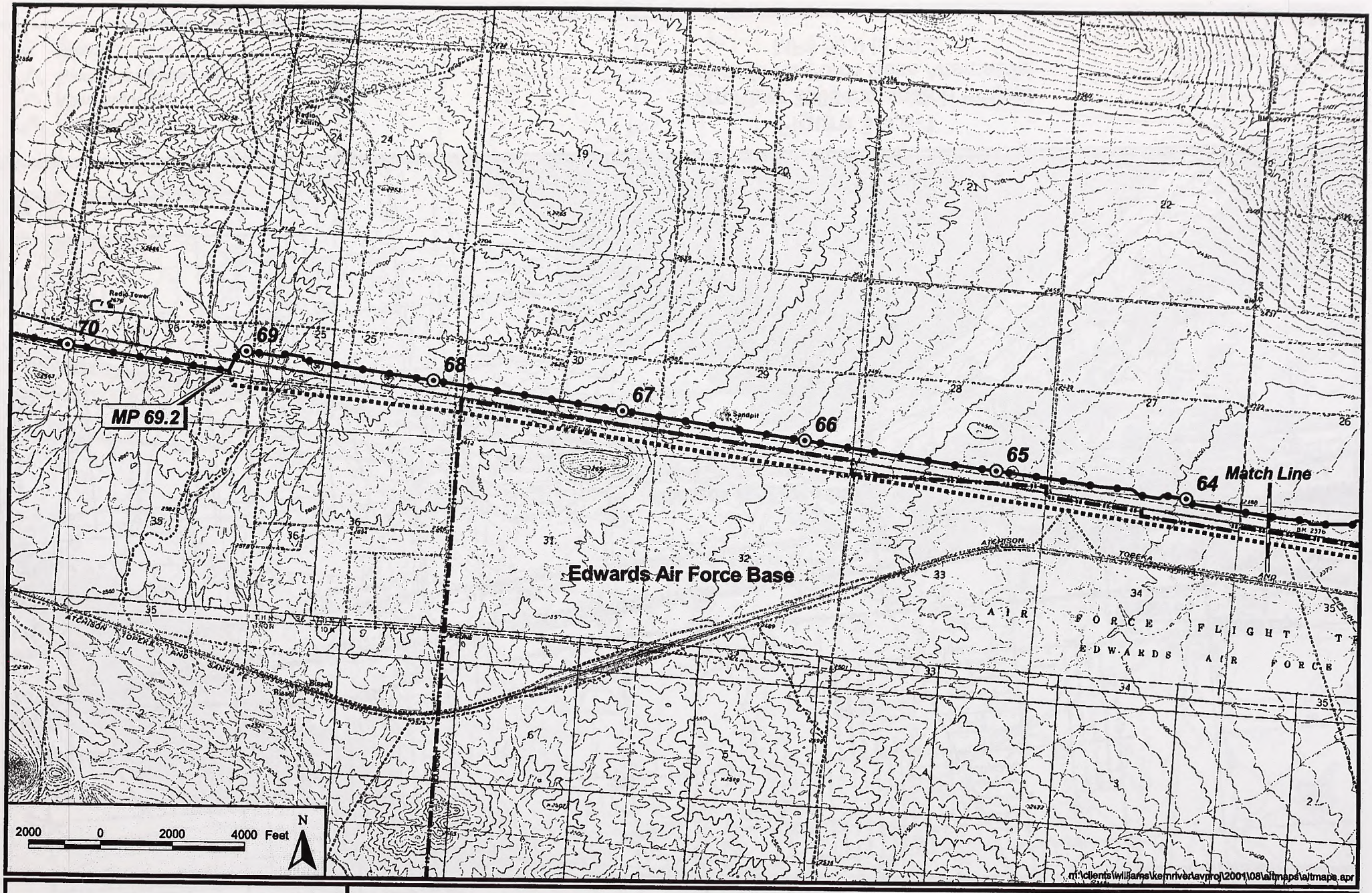
Sheet 1 of 3



Proposed Route
Alternative Route
Special Management Area
Milepost

Figure 3.3.6-1
Kern River 2003 Expansion Project
Edwards Air Force Base Alternative
MPs 50.9 to 69.2

Sheet 2 of 3



Proposed Route
Alternative Route
Special Management Area
Milepost

Figure 3.3.6-1
Kern River 2003 Expansion Project
Edwards Air Force Base Alternative
MPs 50.9 to 69.2

Sheet 3 of 3

TABLE 3.3.6-1

Environmental Comparison of the Edwards Air Force Base Alternative to the Proposed Route Kern County, California MPs 50.9 to 69.2

Environmental Factor	Unit	Proposed Route	Edwards Air Force Base Alternative
Length	miles	18.2	17.9
Length adjacent to existing rights-of-way a/	miles	18.2	17.9
Land disturbance	acres	236.4	230.5
Land retained for permanent right-of-way b/	acres	55.2	108.5
BLM land (California Desert District)	miles	0.1	0.0
Edwards Air Force Base land	miles	0.2	16.5
Road crossings			
paved	number	9	2
unpaved	number	15	16
Jurisdictional intermittent washes	number	0	1
Wetlands	feet	0	0
Cultural resources potentially affected	number	1	17
Cultural resources likely to be eligible for listing on the NRHP	number	0	3
Desert tortoise	number	0	0
Burrowing owl	number	0	0
Mojave creosote bush scrub	miles	10.1	4.9
Joshua tree woodlands	miles	0.0	1.0
Desert saltbrush scrub	miles	7.9	11.6

a/ The proposed route is adjacent to the existing KRGT/Mojave Common System pipeline. The Edwards Air Force Base Alternative is adjacent to the All American Pipeline.

b/ The permanent right-of-way for the proposed route would overlap the existing KRGT pipeline right-of-way and would be 25 feet wide. Because the permanent right-of-way for the alternative route would be adjacent to a foreign pipeline (All American Pipeline), KRGT would require a new 50-foot-wide right-of-way for operation.

Despite the engineering disadvantages of increased length, more road and utility crossings, and higher construction costs, there are operational advantages to the proposed route. Construction along the proposed route would allow KRGT to collocate its proposed MLV at MP 53.5 with an existing MLV along the KRGT/Mojave Common System. The collocation of these MLVs at a single site would simplify maintenance and emergency response as well as reduce visual impact. Construction of the proposed route would also reduce the number of rectifiers required to provide cathodic protection to the pipeline and would enhance the operational efficiency of pipeline maintenance and monitoring operations.

The land ownership along the alternative and proposed routes differs with respect to the amount and jurisdiction of the Federal land crossed. The proposed route crosses about 0.1 mile of land managed by the BLM and 0.2 mile of land under the jurisdiction of Edwards AFB. The remainder (and majority) of the proposed route is privately owned. The alternative, conversely, avoids crossing BLM land but is located almost entirely on Edwards AFB property. KRGT met with representatives of Edwards AFB at an open house sponsored by KRGT on June 6, 2001. At this meeting the base representatives expressed concern about the alternative's increased length on base property. The Department of the Air Force prefers a route adjacent to the existing pipeline for several reasons (Edwards AFB, 2001). The Department of the Air Force believes the proposed route would provide the most safety to base personnel since it would result in fewer non-Air Force personnel entering the base and would limit the disruption of inbound traffic into the base during construction. The alternative, conversely, would encroach on the undeveloped buffer areas that protect the northern and eastern boundaries of the base. One particular concern is that the alternative crosses an area on the eastern portion of the base that was formerly used as part of a bombing range. The Environmental Management office of the base is concerned that construction workers building the alternative

could encounter ordnance or other contaminants associated with past military training activities. The Environmental Management office also expressed concern about the proximity of the alternative to the Atchison, Topeka, and Santa Fe Railroad and the potential for a derailed train to damage the pipeline. A discussion of safety issues associated with the proposed route near Edwards AFB is presented in section 4.12.

Cultural resources surveys indicate that the alternative route could potentially affect 17 cultural resources and that 3 of these sites are potentially eligible for listing on the NRHP. The proposed route could affect one cultural resource that was recommended as not eligible for listing on the NRHP. Although the mere presence of a cultural resource along a route does not mean it would necessarily be affected nor preclude possible avoidance measures such as minor reroutes, the density of cultural resources along the alternative route suggests that avoidance of all cultural resources in the vicinity of the alternative route would be more difficult.

Neither route crosses wetlands or perennial waterbodies, although the alternative would cross one jurisdictional intermittent wash. Neither the burrowing owl nor the desert tortoise was identified in field surveys and database searches along each route. The vegetation along the two routes consists mainly of desert saltbush scrub and Mojave creosote bush scrub; however, the relative prevalence of these two vegetation types along the routes is reversed. The alternative crosses less than half the amount of Mojave creosote bush scrub and nearly 47 percent more desert saltbush scrub as the proposed route. The alternative also crosses about 1.0 mile of Joshua tree woodlands, which are entirely avoided by the proposed route.

In summary, the advantages of the Edwards AFB Alternative are that it is shorter, would disturb less land, and would be easier to construct. The alternative route also crosses fewer roads and utilities and would disturb less vegetation. The major advantage of the proposed route is its reduced crossing of Edwards AFB property. Other advantages of the proposed route are the long-term operational benefits, which include collocation of MLVs, reduced right-of-way maintenance and monitoring, and reduced cathodic protection requirements. The proposed route would also minimize impacts on cultural resources, reduce impact on desert saltbush scrub, and avoid Joshua tree woodlands. In conclusion, the advantages of the Edwards AFB Alternative do not offset its disadvantages and it is not environmentally preferable to the proposed route. Therefore, the Edwards AFB Alternative was eliminated from further consideration.

3.3.7 Minor Route Deviations

During the development of the proposed route, KRGT incorporated several offsets that were greater than 25 feet from the existing pipeline as well as minor route deviations (*i.e.,* greater than 200 feet) from its existing pipeline, the KRGT/Mojave Common System pipeline, or another adjacent utility for one or more of the following reasons: to avoid difficult (*e.g.,* steep or wet) terrain; increase the distance of the pipeline from residences; improve safety; minimize impacts on wetlands; or address difficult engineering situations. Table C-1 (page C-1 through C-15) in appendix C identifies the location and length of each of these route adjustments and provides KRGT's reason for developing them. The areas where minor route deviations create a new right-of-way and KRGT's reason for adopting them are presented in table 3.3.7-1 (page 3-29). The locations of these minor route deviations are shown on the maps in appendix B.

TABLE 3.3.7-1

Minor Route Deviations Where New Right-of-Way is Created by the Kern River 2003 Expansion Project

State/Facility/ Beginning Milepost	Ending Milepost	Segment Length (miles) a/	Reason for Minor Route Deviation
WYOMING			
Muddy Creek Loop			
13.5	13.8	0.3	To avoid a bend in Muddy Creek, thus allowing for a better alignment for the crossing. Additionally, the deviation avoids conflicts with the existing Northwest Pipeline.
25.2	25.3	0.1	To avoid a spring, a well, and a powerline.
42.4	42.9	0.5	To avoid a difficult engineering situation that requires putting severe bends in the proposed pipeline.
UTAH			
Coyote Creek Loop 1			
85.9	86.8	0.9	To accommodate the HDD of the Weber River and Interstate 80.
87.7	87.8	0.1	To accommodate the HDD of the Weber River and to avoid several irrigation outlets that cross under Interstate 80 flowing from the west side of the interstate.
Coyote Creek Loop 2			
126.9 b/	127.3	0.4	To reduce impacts on wetlands.
130.9	131.0	0.1	To avoid a railroad spur, drainage ditches, an asphalt parking lot, and shallow groundwater.
Salt Lake Loop			
162.0	162.5	0.5	To avoid a gravel pit mine and a proposed substation.
CALIFORNIA			
Goodsprings Loop			
626.2	627.4	1.2	To minimize blasting and avoid severe side slopes.
637.0	638.0	1.0	To minimize blasting and avoid severe side slopes.
641.7	642.6	0.9	To minimize blasting and avoid severe side slopes.
Daggett Loop			
16.9	17.8	0.9	To reduce the length of the route and bends in the pipe. The existing KRGT/Mojave Common System pipeline was routed north and west around an agricultural field that is no longer in production. The proposed route deviation is a straight line between MPs 16.9 and 17.8.

a/ Mileposts are based on the as-built mileposts for the original KRGT pipeline. Because atypical offsets, route deviations, and route alternatives were incorporated into the proposed route, the length cannot always be determined from the difference between beginning and ending mileposts.

b/ The deviation from KRGT's existing pipeline begins at MP 125.5. However, between MPs 125.5 and 126.9 the pipeline would be adjacent to existing powerlines and would not create a new right-of-way.

The collocation of facilities is generally preferred by land management agencies, land use planners, and other regulatory agencies and has several inherent engineering and environmental advantages. Perhaps the most important of the environmental advantages is that new land disturbance is minimized. By overlapping the construction right-of-way with other previously disturbed existing rights-of-way, the amount of new land disturbance can be reduced significantly. This is particularly important in arid environments where revegetation is slow and evidence of construction often persists for years. Because of these advantages, alternatives that deviate from the existing right-of-way are driven by issues such as where remaining adjacent to the existing right-of-way is impracticable for engineering reasons or would result in more environmental impact. These advantages also explain why this EIS/EIR does not address alternatives that have been suggested in comments received on the project that merely transfer impacts from one or more property owners or communities to another. For these reasons, the increased offsets and minor route

deviations proposed by KRGT were reviewed by the Agency Staffs and determined to be warranted with the possible exception of the deviation between MPs 16.9 and 17.8 of the Daggett Loop.

In this location, the existing KRGT/Mojave Common System pipeline is routed north and west around an agricultural field. Because this field is no longer in production, KRGT proposes to deviate from its existing right-of-way and route the proposed pipeline across the field in a straight line between MPs 16.9 and 17.8. This deviation would reduce the length of pipe required and eliminate severe bends in the pipe. An alternative route adjacent to the existing KRGT/Mojave Common System pipeline was evaluated. The proposed route and the alternative route adjacent to the existing pipeline are shown on figure B-9 (Daggett Loop, sheet 7 of 26 in appendix B).

Both the proposed route and the alternative route would affect the same landowner and cross similar habitat and vegetation types. Neither route would cross wetlands or waterbodies or affect any known cultural resources or special status species. While the proposed route would reduce the length of the pipeline by 0.2 mile, eliminate the need for severe pipe bends, and reduce land disturbance during construction, it would create a second right-of-way on the same landowner's property and encumber more land for the permanent right-of-way (5.2 acres versus 3.4 acres). In the draft EIS/EIR, it was stated that without information to the contrary, the Agency Staffs assumed that the landowner's preference would be to maximize collocation of facilities on his/her property and minimize permanent land encumbrance. Based on this assumption and because of the minimal differences in impacts between the routes, in the draft EIS/EIR the alternative route was selected as the environmentally preferable alternative. Since issuance of the draft EIS/EIR, KRGT has provided information signifying the landowner prefers KRGT's proposed route (*i.e.,* the landowner has voluntarily signed an easement agreement for the proposed route). Therefore, because the proposed route would reduce land disturbance and eliminate severe pipe bends, this segment of the proposed route is considered environmentally preferable to the alternative.

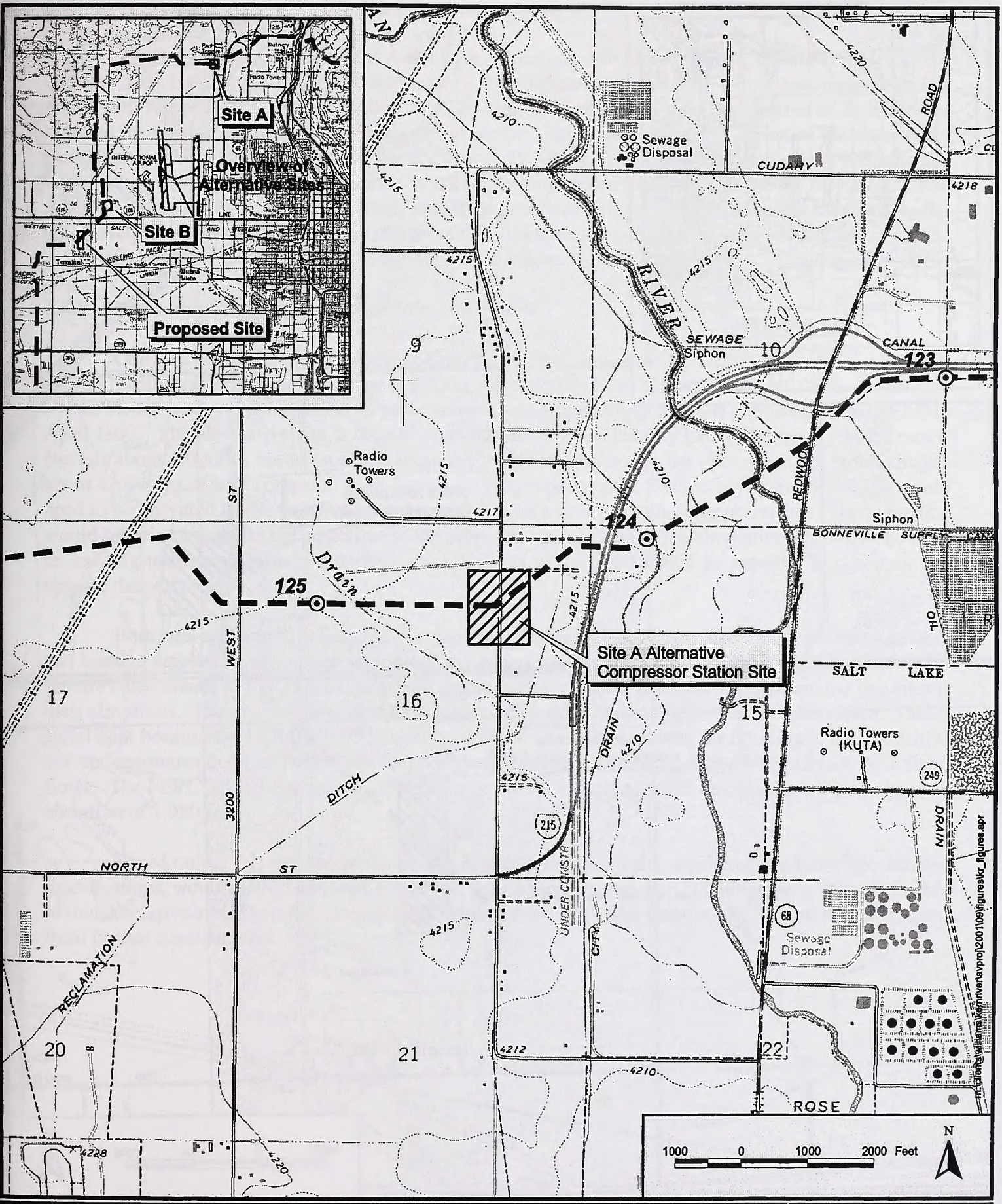
3.4 ABOVEGROUND FACILITY SITE ALTERNATIVES

Several alternative locations for the proposed compressor stations were evaluated as part of KRGT's siting process. More than one feasible location was identified for the Salt Lake and Dry Lake Compressor Stations. Descriptions of these locations are presented below. Because none of the alternative locations identified for the Coyote Creek Compressor Station are feasible, they were eliminated from further consideration.

3.4.1 Salt Lake Compressor Station Site Alternatives

In addition to the proposed site, two potential alternative sites were identified for the Salt Lake Compressor Station. Both of the sites are located in Salt Lake County, Utah. Each site was evaluated to determine if it might be environmentally preferable to the proposed site. A description and brief environmental analysis of each site compared to the proposed site is presented below. The locations of these sites are shown on figure 3.4.1-1, sheets 1 through 2 (pages 3-31 through 3-32).

Site A Alternative - The Site A Alternative is located at MP 124.5 at the beginning of the Coyote Creek Loop 2 and about 7.5 miles northeast of the proposed site. The alternative site is situated due north of the Salt Lake City Airport, near the intersection of KRGT's existing pipeline and 2200 West Street. It is similar in size to the proposed site and also similar in that it is located on nearly flat terrain in the vicinity of existing industrial facilities. No powerline would be required. This is not a significant advantage because the powerline to the proposed site would be only 100 feet long and installed underground. A significant disadvantage is that a wetland covers much of the site. Additionally, due to its location, the compressor buildings would be in the direct flight path of the main north-south runway at the airport, which could conflict with airport operations and potentially threaten public safety. Because the alternative offers no clear environmental advantages and has some drawbacks compared to the proposed site, the Site A Alternative was eliminated from further consideration.



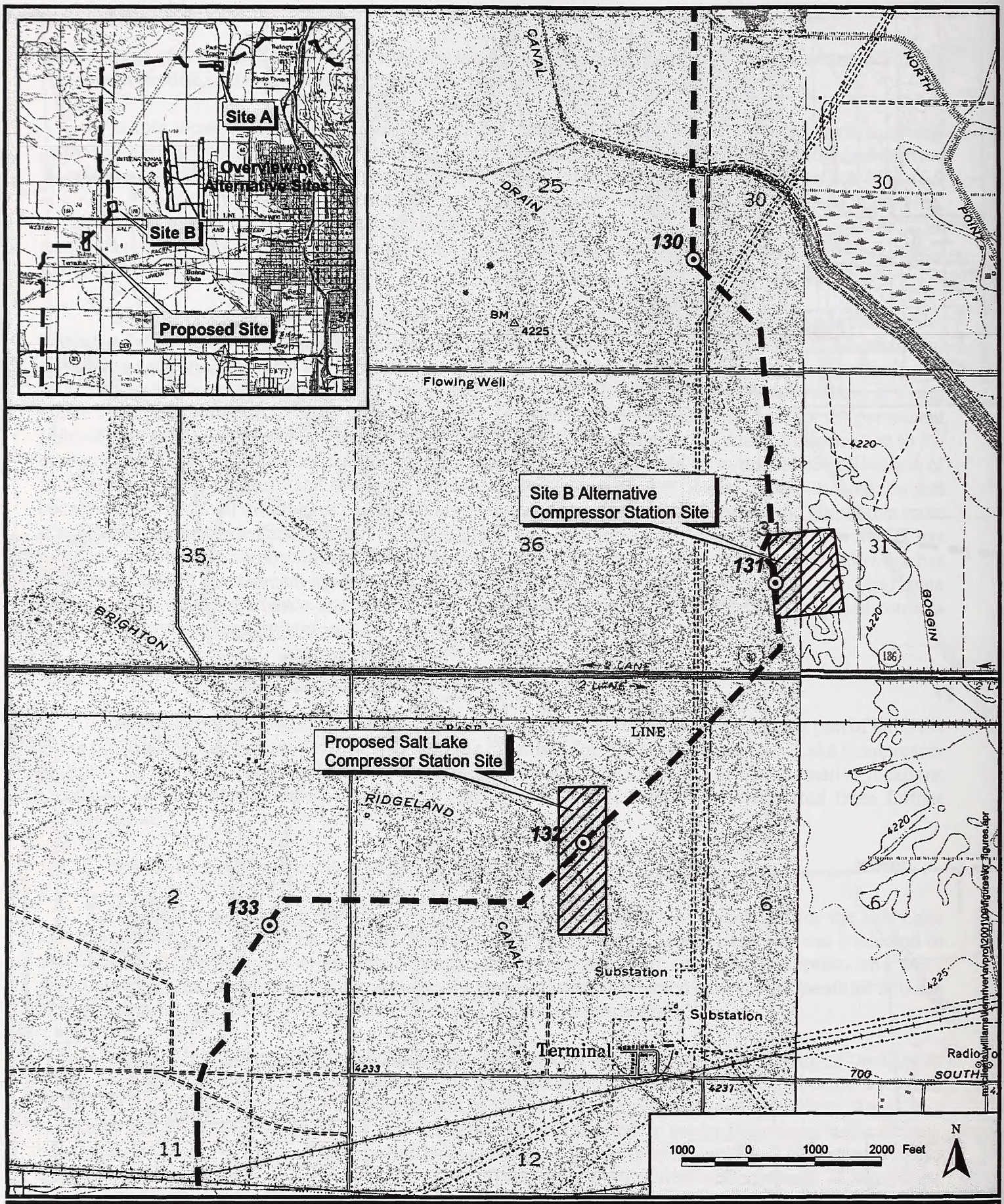
Proposed Route

Milepost

Compressor Station

Figure 3.4.1-1
Kern River 2003 Expansion Project
Salt Lake Compressor Station Site Alternatives
Salt Lake County, Utah

Sheet 1 of 2



Proposed Route
Milepost
Compressor Station

Figure 3.4.1-1
Kern River 2003 Expansion Project
Salt Lake Compressor Station Site Alternatives
Salt Lake County, Utah
Sheet 2 of 2

Site B Alternative - The Site B Alternative is located north of State Route 186 at MP 131.0 on the Coyote Creek Loop 2 about 1.0 mile northeast of the proposed site. The site would encompass two lots within a developed commercial subdivision. The two lots comprise a total of 15 acres of land and are bisected by a canal. The canal and small size of the two lots would restrict the layout of the compressor station, particularly if setbacks are necessary to comply with local zoning and would likely preclude any future compressor station expansions. A 0.2-mile-long powerline would need to be constructed. Additionally, placing a compressor station in a subdivision would increase the potential for offsite noise and the need for extensive noise abatement mitigation. For these reasons, the Site B Alternative is inferior to the proposed site and was eliminated from further consideration.

3.4.2 Dry Lake Compressor Station Site Alternative

One alternative site for the Dry Lake Compressor Station was evaluated (see figure 3.4.2-1 (page 3-34)). This site was originally identified in a filing submitted by KRGT to the FERC in 1992 under Docket No. CP92-198 and was evaluated in an environmental assessment (EA) that was published by the FERC in April 1993. The alternative site is located at about MP 496.0 in the Dry Creek Valley of Clark County, Nevada about 4.0 miles northeast of the proposed site. Construction at the alternative site would disturb about 42.6 acres of land compared to 23.3 acres for the proposed site. Electric power for the facility would need to be provided by Nevada Power and would require a new 0.6-mile-long powerline. The powerline would be twice as long as the powerline to the proposed site. Access to the alternative site would be from an existing unimproved road. Extensive modifications to this road would be required to construct and operate the compressor station.

Both sites are located in flat to gently sloping upland rangelands dominated by Mojave creosote bush and bursage vegetation. Both sites are located on Federal lands managed by the BLM and both sites would require amendments to KRGT's existing land grants from the BLM. A difference between the two sites is their elevations. The proposed site is at an elevation more than 70 feet higher than the alternative. This is significant because the FERC's 1993 EA was concerned about the potential for flooding at the alternative site and recommended that KRGT conduct additional hydraulic studies to mitigate anticipated peak flood flows. The FERC's 1993 EA also found that the compressor station should be constructed at or above an elevation of 1,980 feet.

Based on the fact that the proposed site is above the floodplain, would require fewer access road modifications, would disturb less land, and would need a shorter powerline, it is environmentally preferable to the alternative site. Therefore, the alternative site for the Dry Lake Compressor Station was eliminated from further consideration.

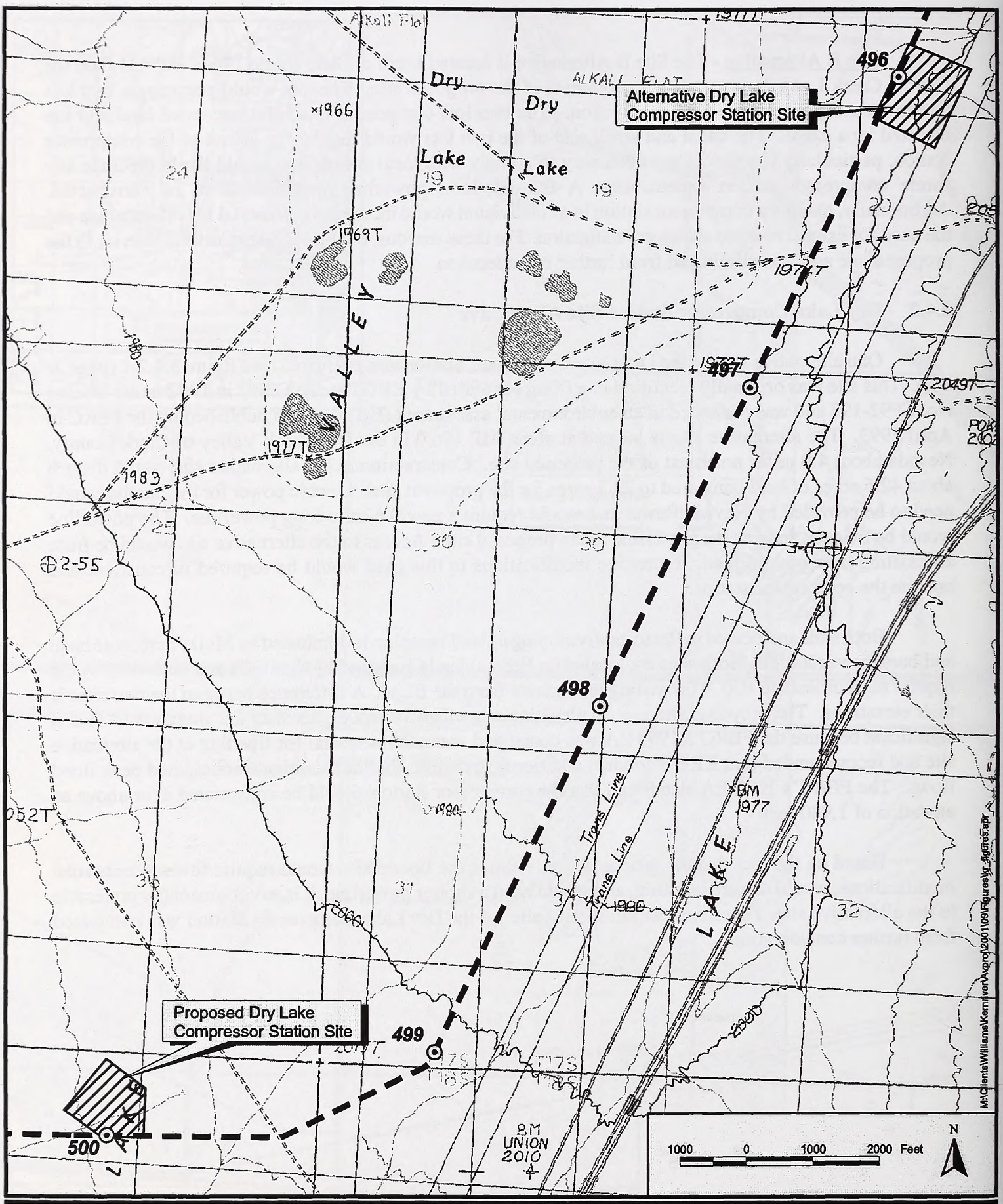


Figure 3.4.2-1
Kern River 2003 Expansion Project
Dry Lake Compressor Station Site Alternative
Clark County, Nevada

ENVIRONMENTAL ANALYSIS

4.0 ENVIRONMENTAL ANALYSIS

This section describes the affected environment as it currently exists and discusses the environmental consequences of the proposed project. The discussion is organized by the following major resource topics: geology; soils; water resources; wetlands; vegetation; wildlife and aquatic resources; special status species; land use, transportation, recreation and special interest areas, and visual resources; socioeconomics; cultural resources; air quality and noise; reliability and safety; cumulative impacts; and growth-inducing impacts.

To comply with cooperating agency requirements, the following "critical elements of the human environment" are addressed within these major resource sections in accordance with BLM Manual guidance (H-1790-1): air quality, areas of critical environmental concern (ACECs), cultural resources, Native American religious concerns, prime or unique farmlands, floodplains, threatened and endangered species, hazardous or solid wastes, drinking and groundwater quality, wetlands and riparian zones, Wild and Scenic Rivers, wilderness areas, environmental justice, health and safety risks to children, and invasive, non-native species. These critical elements are based on requirements specified in statute, regulation, or executive order.

The environmental consequences of constructing and operating the Kern River 2003 Expansion Project would vary in duration and significance. Four levels of impact duration were considered: temporary, short term, long term, and permanent. Temporary impact generally occurs during construction with the resource returning to preconstruction condition almost immediately afterward. Short-term impact could continue for up to 3 years following construction. Impact was considered long term if the resource would require more than 3 years to recover. A permanent impact could occur as a result of any activity that modifies a resource to the extent that it would not return to preconstruction conditions during the life of the project, such as with the construction of a compressor station. KRGT has prepared specific plans that include measures to mitigate for potential impacts. These plans include:

- Blasting Plan;
- UECRM Plan;
- WWCM Procedures;
- Paleontological Resource Mitigation Plan (PRM Plan);
- Noxious Weed Plan;
- Site-specific Reclamation Plans;
- Spill Plan;
- Groundwater Monitoring Plan;
- Drilling Mud Release Contingency Plan; and
- Wildfire Protection Plan

The specific criteria used to determine the significance of an impact are presented at the beginning of each major resource section. General impact is discussed for each resource; site-specific impact is only discussed by exception (*i.e.,* where it differs in a particular area from the general description of impact). The discussions of site-specific impact are included within the subsections of the resource sections.

Unless otherwise noted, all identified impacts are considered to be potentially significant adverse impacts before applying KRGT's proposed mitigation. If any impacts remain significant (*i.e.,* continue to exceed the significance criteria) after KRGT implements its proposed mitigation measures, the FERC and CSLC staff developed additional mitigation in an effort to reduce any significant impact to a less than significant levels. These recommended mitigation measures appear offset with bold type in the text. The staffs of the FERC and the CSLC will recommend to their respective Commissions that these additional mitigation measures be included as specific conditions to any approvals issued by the FERC and the CSLC for the Kern River 2003 Expansion Project.

The conclusions in this EIS/EIR are based on the analysis of the environmental impact and the following assumptions:

- KRGT would comply with all applicable laws and regulations;
- the proposed facilities would be constructed as described in section 2.0 of this EIS/EIR; and
- KRGT would implement the mitigation measures included in its applications and supplemental submittals to the FERC and the CSLC.

4.1 GEOLOGY

Significance Criteria

Adverse impact on geologic, mineral, or paleontological resources would be considered significant and would require additional mitigation if:

- construction activities or the siting of facilities would worsen existing unfavorable geologic conditions;
- project construction or operation would preclude or disrupt the development of mineral resources;
- geologic hazards could cause a rupture or failure of the pipeline or cause damage to related facilities that would present a significant threat to public safety; or
- project construction would result in damage or loss of vertebrate or invertebrate fossils that are considered important by paleontologists and land management agency staff.

4.1.1 Geologic Setting

The Kern River 2003 Expansion Project pipeline facilities would cross four major physiographic provinces: the Wyoming Basin, the Middle Rocky Mountains, the Basin and Range, and the Mojave Desert. The physiography, geology, seismicity, stability, and mineral resources of these physiographic provinces are discussed below. Table 4.1-1 (page 4-4) summarizes geologic conditions along the pipeline route by state, physiographic province, and facility.

Wyoming

The proposed facilities in Wyoming are located within the Wyoming Basin and Middle Rocky Mountains physiographic provinces. Along the pipeline route, the Wyoming Basin physiographic province is characterized by resistant sandstone, shale, and limestone bedrock layers that have been folded and eroded to form low linear ridges. Alluvium and colluvium typically overlie the bedrock. The topography varies from dissected to rolling with low to moderate relief. Starting at MP 60.0 and going south and west, the route crosses a transition zone from the Wyoming Basin physiographic province into the Middle Rocky Mountains physiographic province. Low, rounded, shale hills and short, dissected drainages dominate the transition zone. Local relief is less than 150 feet along this portion of the pipeline route.

Utah

From the Wyoming/Utah state line (MP 63.0) to about MP 70.0, the pipeline route crosses the transition zone between the Wyoming Basin and the Middle Rocky Mountains physiographic provinces. The majority of the proposed facilities in Utah are located within the Middle Rocky Mountains and the Basin and Range physiographic provinces. For the most part, the pipeline route is confined to the footslopes of the mountains, except where it is necessary to cross the intervening ranges. KRGT's proposed route generally follows topographic lows or breaks to avoid high mountain crossings and steeper slopes.

TABLE 4.1-1

Geologic Conditions Along the Kern River 2003 Expansion Project Pipeline Route

State/ Physiographic Province	Facility	Mileposts a/	Geology	Topography/Typical Elevation (feet above sea level)	Locations of Shallow Bedrock b/ (mileposts)
WYOMING					
Wyoming Basin	Opal Loop	0.0-6.3	Eocene sedimentary rocks; Quaternary alluvium.	Low relief, locally steep banks. Elevation range 5,800 to 6,800.	0.0-6.0
	Muddy Creek Loop	0.0-60.1	Eocene to upper Cretaceous sedimentary rocks; Quaternary alluvium.	Low relief, locally steep banks. Elevation range 6,600 to 7,900.	7.2-59.3
Middle Rocky Mountains	Coyote Creek Loop 1, Coyote Creek Compressor Station, Anschutz Lateral	60.1-63.0	Oligocene to lower Cretaceous sedimentary and volcanic rocks; Quaternary alluvium.	Moderate relief, steep slopes, rugged terrain. Elevation range 7,300 to 7,500.	60.1-63.0
UTAH					
Middle Rocky Mountains	Coyote Creek Loop 1	63.0-96.4	Oligocene to lower Cretaceous sedimentary and volcanic rocks; Quaternary alluvium.	High to moderate relief, steep slopes, rugged terrain. Elevation range 5,800 to 7,300.	63.0-94.9
Basin and Range	Coyote Creek Loop 2	124.5-132.0	Oligocene and Mississippian sedimentary and volcanic rocks; Quaternary lacustrine sediments and alluvium.	Low relief, slopes flat and stable. Elevation range 4,210 to 4,230.	124.5-132.0
	Salt Lake Loop, Salt Lake Compressor Station	132.0-191.6	Oligocene and Mississippian sedimentary and volcanic rocks; Quaternary lacustrine sediments and alluvium.	Low relief, local steep slopes. Slopes generally flat and stable. Elevation range 4,210 to 5,300.	132.0-190.5
	Elberta Loop	191.6-276.7	Pliocene to Miocene, Oligocene, Carboniferous, Ordovician sedimentary and volcanic rocks; Quaternary lacustrine sediments and alluvium.	Low to moderate relief, local steep slopes. Elevation range 4,900 to 6,400.	194.5-208.7 214.6-221.1 226.1-235.9 245.4-252.4
	Fillmore Loop	276.7-406.5	Pliocene to Paleocene, Cretaceous to Triassic sedimentary and volcanic rocks; Quaternary alluvium.	Low to moderate relief. Elevation range 4,200 to 6,200.	287.3-290.3 302.2-304.3 335.1-343.0 379.3-379.5 382.5-384.7 388.9-400.4 393.6-406.5
	Veyo Loop	406.5-432.8	Miocene to Pliocene, Cretaceous to Triassic sedimentary and volcanic rocks; Quaternary alluvium.	Low to moderate relief. Elevation range 2,700 to 4,600.	406.5-432.8
NEVADA					
Basin and Range	Veyo Loop	432.8-500.1	Permian to Early Proterozoic sedimentary, igneous, and metamorphic rocks; Quaternary alluvium.	Low to moderate relief. Elevation range 1,550 to 2,700.	432.8-450.0 458.1-472.8

TABLE 4.1-1 (cont'd)

Geologic Conditions Along the Kern River 2003 Expansion Project Pipeline Route

State/ Physiographic Province	Facility	Mileposts a/	Geology	Topography/Typical Elevation (feet above sea level)	Locations of Shallow Bedrock b/ (mileposts)
	Dry Lake Loops 1 and 2, Dry Lake Compressor Station	500.1-517.5 543.6-565.9	Pliocene to Carboniferous sedimentary rocks; Quaternary alluvium.	Low to moderate relief. Elevation range 2,030 to 2,700. (Loop 1) and 3,000 to 4,400 (Loop 2).	508.2-510.0 544.2-546.1 547.1-547.8 553.3-555.1 555.4-556.3 556.5-563.1 566.2-567.7
Mojave Desert	Goodsprings Loop	565.9-579.4	Pleistocene to Paleocene, Cretaceous to Triassic, Carboniferous, Cambrian to Late Proterozoic sedimentary, volcanic, and plutonic rocks; Quaternary alluvium.	Low to moderate relief, gentle rolling to flat slopes. Elevation range 2,950 to 3,400.	571.7-571.8 578.6-579.1
CALIFORNIA					
Mojave Desert	Goodsprings Loop	579.4-681.9	Pleistocene to Paleocene, Cretaceous to Triassic, Carboniferous, Cambrian to Late Proterozoic sedimentary, volcanic, and plutonic rocks; Quaternary alluvium.	Low to high relief, gentle rolling to flat slopes. Elevation range 850 to 4,000.	587.3-590.2 590.7-591.4 594.4-594.6 611.3-615.5 617.1-618.2 619.6-621.7 626.3-626.8 627.2-627.9 636.1-637.3 641.9-642.5 664.8-669.0 676.8-681.9
	Daggett Loop	0.0-82.4	Pleistocene to Miocene, Cretaceous sedimentary and, plutonic rocks; Quaternary alluvium.	Low to moderate relief, locally steep; generally gentle to flat slopes. Elevation range 2,100 to 3,060.	19.3-31.4 37.8-39.7 65.3-70.1

a/ The areas between MPs 96.4 and 124.5 and MPs 517.5 and 543.6 would not be looped by the proposed project.

b/ Milepost range represents general areas of shallow bedrock (< 7 feet) and does not represent actual linear extent. Blasting would likely occur within portions of the milepost range.

Within the Middle Rocky Mountains physiographic province, the pipeline route crosses the Wasatch Plateau and Wasatch Front sections. The topography in this area is rugged and varies from highly dissected with low mountains to highly dissected with high mountains. Recent alluvial deposits and sedimentary and volcanic bedrock formations underlie the area. Steep slopes, high groundwater tables, and rock outcrops are common features, and local relief exceeds 2,000 feet in some areas. To avoid the most rugged terrain and associated construction and stability concerns, KRGT elected not to loop the existing pipeline between MPs 96.4 and 124.5.

The Basin and Range physiographic province is characterized by a series of north to south trending mountains and valleys. The entire region has been subjected to tectonic extension that thinned and cracked the earth's crust and, as it was being pulled apart, created faults. Along these roughly north to south trending faults, mountains were uplifted and valleys down-dropped, producing the distinctive alternating pattern of linear mountain ranges and valleys of the province. Gentle slopes and lacustrine sediments are associated with the valley floors. Bedrock consists of various sedimentary and volcanic bedrock formations that comprise the steep, rugged mountain highs and mountain lows, with moderately steep to gentle-sloping alluvial sand and gravel fans forming the transition zone between the mountains and valleys.

Nevada

The majority of the proposed facilities in Nevada are located within the Basin and Range physiographic province. Generally, older sedimentary and volcanic rocks are crossed within the Basin and Range province in Nevada as compared to the younger rock formations found in Utah.

South and west of MP 565.9 (Goodsprings Loop), the proposed facilities are located in the Mojave Desert physiographic province, an arid region characterized by discrete ranges of rugged mountain ranges flanked by alluvial fans and playa lake basins. The underlying bedrock includes sedimentary, plutonic, metamorphic, and volcanic formations.

California

The Mojave Desert physiographic province continues into California from Nevada to the terminus of the Daggett Loop. The characteristics of the physiographic province in California are the same as those described above for Nevada.

4.1.2 General Impact and Mitigation

Construction and operation of the proposed facilities would not materially alter the geologic conditions of the project area. Effects from construction could include disturbances to the natural topography along the right-of-way and at aboveground facilities due to grading and trenching activities. Over most of the project area, natural topographic slope and contours would be temporarily altered by the small-scale grading of the construction right-of-way that is necessary to provide a level and safe work surface for equipment. After completion of construction, KRGT would restore topographic contours and drainage conditions as closely as feasible to their preconstruction condition.

The Kern River 2003 Expansion Project would cross a variety of physiographic and geologic terrains that would require a wide range of construction techniques as described in section 2.3. The depth of the trench that would be necessary to install the pipeline is about 7 feet. At this depth, soft bedrock typically can be excavated with conventional construction equipment. Where hard bedrock is encountered, blasting would be required to complete the excavation. As shown in table 4.1-1 (page 4-4), the pipeline route crosses multiple areas of shallow bedrock where bedrock is likely to be encountered during trenching and grading. KRGT

would conduct blasting for grade or trench excavation only after all other reasonable means of excavation have been used and are unsuccessful in achieving the required results. If blasting is not controlled properly, it can cause damage to existing structures and pipelines, wells, and springs. Temporary effects of blasting can include hazards posed by uncontrolled fly-rock and nuisances caused by noise, increased dust, and venting of gases following blasts.

KRGT has prepared a Blasting Plan (see appendix H) to minimize the effects of blasting and ensure safety during blasting operations. The plan provides guidelines, requirements, and specifications for the use and storage of blasting materials and for the safety of personnel and nearby facilities. All blasting-related operations would comply with Federal, state, and local regulations and permit conditions and would be conducted by or under the direct supervision of experienced personnel legally licensed and certified to perform such activity in the jurisdiction where blasting occurs.

To avoid injury to personnel and damage to structures or other features like water wells and the existing pipeline, KRGT's Blasting Plan stipulates that the blasting contractor must prepare site-specific blasting plans. Among other requirements, these plans would identify the distance and orientation to the nearest structure (both aboveground and underground) and the procedures to be used for storing, handling, transporting, loading, and firing explosives. The site-specific blasting plans must be reviewed by the company engineer, and the company inspector's approval must be received before each blast.

KRGT's Blasting Plan also stipulates the following:

- KRGT would not store explosives on Federal land without prior written permission from the land management agency; copies of this permission would be posted on each magazine;
- KRGT would give at least 72 hours advance notice of blasting activities to the land management agency, railroads, highway departments, and local communities; occupants of nearby residences, buildings, and businesses; and local farmers;
- KRGT would erect and maintain warning signs at all approaches to the blast areas and flaggers would be stationed on all roadways passing within 1,000 feet of blasting activities;
- KRGT would not prime or fuse explosives until just before use;
- KRGT would conduct blasting during daylight hours and would monitor blasting activities with three-axis seismographs to ensure that safe vibration levels are not exceeded. Limits of vibration measured as peak particle velocity would not exceed 4 inches per second adjacent to an underground pipeline and 2 inches per second for any aboveground structure (including water wells); and
- if an aboveground structure or water well is damaged by blasting, KRGT would compensate the owner.

To ensure that potential impacts associated with blasting are minimized through skillful operations and the use of site-specific plans, **the Agency Staffs recommend the following measure:**

- **<u>Before commencement of any blasting</u>, KRGT shall submit to the FERC and the CSLC (for the portion of the project in California) for approval:**

a. a copy of the license of the person(s) conducting or supervising the blasting operations and evidence that the person is certified to perform such activity in the jurisdiction where blasting occurs; and

b. a copy of the contractor-prepared site-specific blasting plans. The site-specific plans shall include a contingency plan that includes safe methods and procedures to identify any misfired detonations and to proceed with further work after misfires.

KRGT's Blasting Plan and the additional recommendation of the Agency Staffs provide adequate measures and procedures to reduce the potential impacts associated with blasting to less than significant levels.

4.1.3 Mineral Resources

Various fuel and non-fuel mineral commodities/resources have historically been mined and processed in Wyoming, Utah, Nevada, and California. Within these four states fuel commodities include crude oil, natural gas, and natural gas liquids. In addition, coal is mined in Wyoming and Utah, and uranium mines and uranium reserve areas are located in Wyoming, Utah, and Nevada. Typical non-fuel mineral resources in the four-state area include construction aggregate, portland cement, bentonite, borates, ornamental stone, shale, gypsum, salines, and gemstones, in addition to base and precious metals such as copper, gold, and silver.

In California, the Division of Mines and Geology (CDMG) separates land areas into four categories referred to as Mineral Resources Zones (MRZs). Lands classified as MRZ-1 have little likelihood for presence of significant mineral resources. Lands classified as MRZ-2 have significant measured economic or subeconomic mineral resources. Lands classified as MRZ-3 have areas of known mineral resources of undetermined significance. Lands are classified as MRZ-4 if information neither indicates nor disparages the possibility of significant mineral resources. Of the classifications, MRZ-2 areas are the most significant. In total, about 2 miles of the Goodsprings Loop and 1 mile of the Daggett Loop would cross MRZ-2 areas between MPs 590.0 to 592.0 and MPs 7.5 and 8.5, respectively.

No known active mineral areas are crossed by KRGT's proposed route; however, a total of 16 mineral resource areas (*e.g.*, oil and gas wells, sand, gravel, raw materials, aggregate) have been identified within 300 feet of the proposed route (see table 4.1.3-1 (page 4-9)).

4.1.3.1 General Impact and Mitigation

The construction and operation of a pipeline near or over mineral resources could affect existing and future production at active or currently inactive mineral resource areas by restricting activities within the pipeline right-of-way. In general, potential significant effects include diminished mineral land value, loss of mineral land access, and loss of revenues generated by future mineral production. However, analysis indicates that nearly all of KRGT's pipeline route is adjacent to existing pipelines or other utilities that have already precluded further mineral development. Additionally, impacts on future mineral development would be negligible and would not constitute a significant loss of a mineral resource or mineral availability because of the narrow nature of the right-of-way relative to the expanse of areas with mineral resource potential (Waiwood, 2001). For example, the two MRZ-2 areas in California that would be crossed by the proposed pipeline are already crossed by the existing pipeline. The additional 25-foot-wide permanent right-of-way required for the proposed project would not significantly preclude or disrupt the development of mineral resources in these areas. In the event any conflicts between the pipeline and other mineral resource operations

are identified, KRGT would compensate the owners of these resources for potential losses. As a result, impacts of the project on mineral resources would be less than significant.

TABLE 4.1.3-1

Mineral Resources Within 300 Feet of the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Mineral Resource	Status	Distance (feet) and Direction From Pipeline Centerline
WYOMING				
Muddy Creek Loop	40.6	Gas Well	Inactive	33 Southeast
UTAH				
Coyote Creek Loop 1	71.8	Oil Well	Active	149 Southeast
Elberta Loop	195.9	Gravel Pit	Inactive	300 Northwest
	247.7	Gravel pit	Inactive	100 Northwest
	253.7	Borrow pit	Inactive	200 Southeast
	263.2	Gravel pit	Inactive	<50 Northwest
NEVADA				
Veyo Loop	474.6	Sand and gravel	Inactive	41 Southeast
Dry Lake Loop 2	545.4	Raw materials, aggregate	Inactive	38 Northwest
	545.5	Raw materials, aggregate	Inactive	214 Northwest
	545.5	Raw materials, aggregate	Inactive	296 Northwest
	545.8	Raw materials, aggregate	Inactive	24 Northwest
	547.4	Raw materials, aggregate	Inactive	173 Southeast
	547.6	Raw materials, aggregate	Inactive	182 Northwest
	547.6	Raw materials, aggregate	Inactive	213 Northwest
CALIFORNIA				
Goodsprings Loop	590.0 - 592.0	Gold - Mineral Resource Zone	Inactive	Crossed
	681.0	Borrow pit	Inactive	0
Daggett Loop	7.5 - 8.5	Sand and Gravel - Mineral Resource Zone	Inactive	Crossed
	66.5	Sand pit	Inactive	225 North

The pipeline route crosses various gathering and transmission pipelines (foreign lines) associated with oil and gas production areas located between MPs 0.0 and 80.0 of the Muddy Creek Loop and Coyote Creek Loop 1. Construction of the project could cause damage or disruption to these foreign lines. To avoid damage or disruption to any foreign lines crossed by the proposed pipeline, KRGT would:

- contact and provide the necessary advance notice (no less than 72 hours) to one-call utility location programs before construction;
- continually probe the depth of cover over foreign line(s) during trench excavation and hand excavate the final 2 feet; and
- install the pipeline with a normal vertical separation from foreign pipelines of 2 feet. In no case would the pipeline be installed with less than 1 foot of separation from a foreign pipeline.

KRGT's implementation of these measures would reduce the potential for damage and disruption to foreign lines crossed by the proposed pipeline to less than significant levels.

4.1.4 Geologic Hazards

Geologic hazards are natural physical conditions that can, when active, result in damage to the land and structures or injury to people. Such hazards typically include seismicity (*i.e.*, active faults, earthquakes/ ground shaking, and soil liquefaction), slope stability (landslides), subsidence, flash floods and debris flows, volcanism, and avalanches. The alignment, design, construction, and mitigation for potential geologic hazards of the original KRGT and KRGT/Mojave Common System pipelines were based on a number of geotechnical reports and investigations performed by Sergent, Hauskins & Beckwith (SHB) and Woodward-Clyde/D.J. Nyman & Associates (Woodward-Clyde). Since the start of operation there have been no instances of damage resulting from geologic hazards located along the existing KRGT pipeline or the KRGT/Mojave Common System pipeline. Because approximately 93 percent of the proposed pipeline route follows existing KRGT/Mojave pipeline facilities, the referenced previous geohazard evaluations and reports were reviewed and supplemented with current information and field surveys for the siting and design of the proposed facilities. To address specific concerns expressed by the Agency Staffs regarding potential geologic hazards, KRGT conducted geohazard evaluations based on current engineering guidelines for design along portions of the pipeline route in California and at the proposed Salt Lake Compressor Station site.

Identification and avoidance of unstable areas/geologic hazards was a major siting and routing criterion used during 2001 field surveys. Table 4.1.4-1 (page 4-11) lists the potential geologic hazards identified along the pipeline route. These potential geologic hazards and KRGT's proposed mitigation measures are discussed below.

> Note: Because the impacts associated with geologic hazards are site-specific, no discussion of the general impacts of geologic hazards is included.

4.1.4.1 Seismic Hazards

Much of the project route is located within areas of past seismic activity. The Intermountain Seismic Belt (ISB) is a zone of earthquake activity that runs north to south through the intermountain west from northwestern Montana, through Wyoming, Idaho, Utah, and southern Nevada/northern Arizona. The ISB is not as seismically active as the southern California region, but there is still a high level of earthquake activity along its entire length. Potential seismic hazards include active faults, earthquakes/ground shaking, and soil liquefaction.

KRGT would construct and test project facilities to meet Federal standards outlined in the DOT's regulations in Title 49 CFR Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*. Section 4.12.1 contains a detailed discussion of these DOT regulations. The risk of damage resulting from seismic hazards would be lessened by KRGT's commitment to compliance with DOT regulations and to designing the pipeline and aboveground structures to withstand the predicted levels of ground shaking and ground deformation. This conclusion is supported by O'Rourke and Palmer's 1996 study of earthquake performance data for steel transmission lines and distribution supply lines operated by Southern California Gas Company over a 61-year period. This study found that post-1945 arc-welded transmission pipelines in good repair have never experienced a break or leak during a southern California earthquake. This study also found that this type of piping is vulnerable to only very large and abrupt ground displacement (*e.g.*, severe landslides) and is highly resistant to traveling ground wave effects and moderate amounts of permanent deformation.

TABLE 4.1.4-1

Potential Geologic Hazards Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Mileposts	Potential Geologic Hazards	Comments
WYOMING			
Muddy Creek Loop	45.4	Slope instability	
UTAH			
Coyote Creek Loop 1	65.0-73.0	Slope instability	Chalk Creek/Thousand Peaks Landslide Area
Coyote Creek Loop 2	124.5-132.0	Ground shaking, soil liquefaction/ground failure	PGA 25 percent gravity a/
	130.0-132.0	Soil liquefaction/ground failure	
	130.0-132.0	Surface fault rupture	West Valley Fault Zone - Granger Fault
Salt Lake Loop, Salt Lake Compressor Station	132.0	Surface fault rupture at Salt Lake Compressor Station	West Valley Fault Zone - Granger Fault
	132.0-156.0	Soil liquefaction/ground failure	
	132.0-160.0	Ground shaking	PGA 20 to 25 percent gravity a/
Elberta Loop	220.0-236.0	Soil liquefaction	
	238.0-244.0	Ground subsidence	Scipio Valley
	230.0-276.7	Flash flooding	
	240.0-275.0	Volcanism	
Fillmore Loop	276.7-406.5	Flash flooding	
	277.0	Surface fault rupture	Travertine Fault Zone
	297.0	Slope instability	Pinnacle Pass
	316.5	Surface fault rupture	Milford Fault Zone
	348.7	Ground subsidence	
	377.9, 379.0, 379.8	Surface fault rupture	Antelope Mountain Faults
	365.0-380.0	Slope instability	Pine Valley Mountains
Veyo Loop	406.5-432.8	Flash flooding	
NEVADA			
Veyo Loop	432.8-455.4	Flash flooding	
	476.5-477.5	Soil liquefaction	Muddy River
Dry Lake Loop 1	500.1-517.5	Flash flooding	
	510.5-517.5	Ground subsidence	Las Vegas Valley
Dry Lake Loop 2, Dry Lake Compressor Station	560.0-565.9	Volcanism	
Goodsprings Loop	565.9-579.4	Flash flooding	
	565.9-570.0	Volcanism	
CALIFORNIA			
Goodsprings Loop	579.4-681.9	Flash flooding, locally occurring rockfalls, debris flows	
	665.0-681.9	Ground shaking	PGA 20 to 25 percent gravity a/
	674.8	Surface fault rupture	Calico Subsidiary
	675.3, 675.8		Calico Fault b/
	676.7	Soil liquefaction	Mojave River
Daggett Loop	0.0-82.4	Flash flooding, locally occurring rockfalls, debris flows	
	0.0-45.0	Ground shaking	PGA 20 to 25 percent gravity a/
	0.0-15.0	Subsidence	Daggett - Barstow area
	13.0	Surface fault rupture	Lenwood Fault b/
	18.0	Soil liquefaction	Mojave River
	58.0-64.0	Subsidence	Northwest of Rogers Lake

a/ Peak Ground Acceleration (PGA) with a 10 percent probability of exceedance in 50 years (USGS).

b/ California Alquist-Priolo Earthquake Fault Zoning Act Fault.

KRGT has also committed to design all project facilities to meet or exceed the latest edition of the Uniform Building Code (UBC), International Building Code (IBC), and recognized industry standards under the direction of certified professional engineers. However, the UBC, IBC, and DOT (Title 49 CFR Part 192) requirements do not necessarily address all seismic design criteria required in California, particularly at fault crossings and liquefaction potential zones.

In California, the CSLC requires the incorporation of current seismological engineering standards such as the *Guidelines for the Design of Buried Steel Pipe* (American Lifeline Alliance), *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems* (American Society of Civil Engineers), and other recognized industry standards for seismic-resistant design at all fault crossings and liquefaction potential zones in California. The CSLC also requires all engineered structures, including pipeline alignment sheets, buildings and other structures, profile drawings wherever necessary, and other appurtenances and associated facilities in California, to be designed, signed, and sealed by California-registered professionals certified to perform such activities in the jurisdiction where the facilities would be located.

Faults

Extensive and thorough geologic research was conducted along the proposed pipeline alignment during the design studies of KRGT's existing pipeline in 1990, including aerial reconnaissance under low sun-angle illumination. Over 120 faults were investigated by SHB and Woodward-Clyde. The purpose of these investigations was to identify the potentially active faults that would require design treatment and implementation of specific mitigation measures during construction. KRGT's original design studies included interviews with geologists employed by the USGS, the Utah Geological Survey (UGS), the Nevada Bureau of Mines and Geology (NBMG), and the CDMG.

Since the original construction, significant studies on Quaternary faults have been published. The most notable of these were Hecker's 1993 summary of Quaternary faults in Utah and Jennings' 1994 summary of Quaternary faults in California. Additionally, Siddharthan and others (1993) conducted a study that required summary-type information on Quaternary faults in Nevada. These three projects were in progress during the KRGT design studies in 1990.

Fault review for the Kern River 2003 Expansion Project included communications with key geologists employed by the USGS (Michael Machette), the UGS (Gary Christenson), the NBMG (Craig dePolo), and the CDMG (Jerry Treiman). These geologists were asked for information about fault evaluation studies that have taken place since the updated summaries were prepared in the early 1990s. Current DOT class locations were also reviewed to determine if changes in class locations would affect the 1990 selection of Quaternary faults that required design treatment. Examination of the faults crossed by the project reveals that population class changes will not change the classification of faults developed in 1990. Figure 4.1.4-1 (page 4-13) depicts Quaternary age faults in the project area.

New information on Quaternary faults relevant to the Kern River 2003 Expansion Project has been developed for the Las Vegas Valley (Slemmons *et al.*, 2001). The pipeline route would cross a projection of the Las Vegas shear zone at approximately MP 514.0. During design and construction of the existing pipeline in 1990 to 1991, the most recent activity on the Las Vegas shear zone was considered to be pre-Quaternary (older than 1.8 million years old). New data suggest possible Quaternary activity.

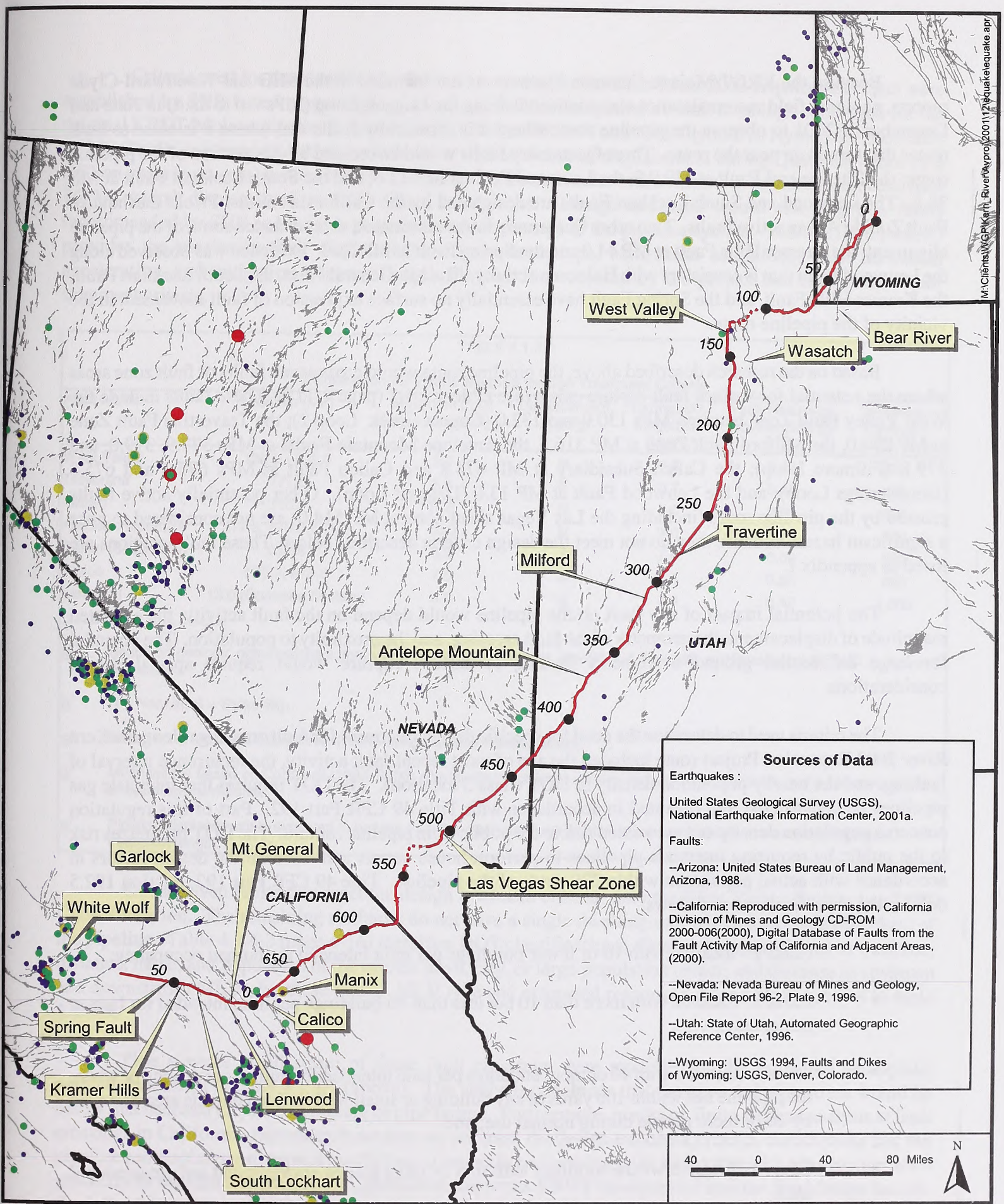


Figure 4.1.4-1
Kern River 2003 Expansion Project
Faults and Earthquakes Near the Pipeline Route

Because the KRGT/Mojave Common System was not included in the SHB and Woodward-Clyde reports, geologic field reconnaissance was conducted along the Daggett Loop (MPs 0.0 to 82.4) in June and December of 2001 to observe the pipeline route where it is crossed by faults and where it is close to fault traces that terminate near the route. Three Quaternary faults would be crossed by this portion of the pipeline route: the Mt. General Fault at MP 9.8, the Lenwood Fault at MP 13.0, and the South Lockhart Fault at MP 36.6. The Lenwood and South Lockhart Faults are designated by the California Alquist-Priolo Earthquake Fault Zoning Act as active faults. Two other Quaternary faults terminate a short distance south of the pipeline alignment: the Kramer Hills Fault at MP 44.0 and the Spring Fault at MP 51.0. Evidence was observed along the Lenwood Fault that is consistent with Holocene activity. The Mt. General Fault, the South Lockhart Fault, the Kramer Hills Fault, and the Spring Fault have essentially no surface expression of fault movement in the vicinity of the pipeline route.

Based on the research described above, the pipeline route would cross seven faults or fault zone areas where the potential for surface fault rupture exists (see table 4.1.4-1 (page 4-11)). These faults include the West Valley Fault Zone between MPs 130.0 and 132.0 (Coyote Creek Loop 2); the Travertine Fault Zone at MP 277.0, the Milford Fault Zone at MP 316.5, the Antelope Mountain Faults at MPs 377.9, 379.0, and 379.8 (Fillmore Loop); the Calico Subsidiary at MP 674.8 and Calico Fault at MPs 675.3 and 675.8 (Goodsprings Loop); and the Lenwood Fault at MP 13.0 (Daggett Loop). Other potentially active faults crossed by the pipeline route (including the Las Vegas shear zone at MP 514.0) are not considered to pose a significant hazard because they do not meet the design criteria described below. These fault locations are listed in appendix I.

The potential impact of any fault on the pipeline would depend on the fault activity, the expected magnitude of displacement, the geometry of the fault crossing, and the proximity to population. The potential for large differential ground movements leading to surface rupture would require special design considerations.

The criteria used to determine the need for specific design treatment for fault crossings along the Kern River 2003 Expansion Project route included the age of most recent fault activity, the recurrence interval of faulting, and the nearby population density (a DOT Class 3 location). The DOT requires that interstate gas pipelines be constructed and operated in accordance with Title 49 CFR Part 192. Part of this regulation concerns population density and associated risk to the public from pipeline rupture. The DOT minimizes risk to the public by requiring interstate pipelines to perform house counts and increase the design factors in accordance with actual population within 220 yards of the pipeline. Title 49 CFR Part 192, Section 192.5 defines the classifications as follows:

- Class 1 - location with 10 or fewer buildings per mile intended for human occupancy;
- Class 2 - location with more than 10 but less than 46 buildings per mile intended for human occupancy;
- Class 3 - location with 46 or more buildings per mile intended for human occupancy or where the pipeline lies within 100 yards of any building or small well-defined outside area occupied by 20 or more people during normal use; and
- Class 4 - location where buildings with four or more stories aboveground are prevalent per mile.

In addition, Title 49 CFR Part 192 has provisions for pipeline system modifications when there is a change in a class location.

Criteria used for the identification of fault treatment for the Kern River 2003 Expansion Project were established by SHB based on geologic research and field investigation of fault crossings conducted for the original KRGT/Mojave pipeline facilities (SHB, 1990a, 1990b; Woodward-Clyde/D.J. Nyman & Associates, 1991). Faults requiring treatment include those with evidence of displacement during Quaternary time (1.8 million years to present) located in DOT Class 3 locations and faults with evidence of repeated Holocene (last 10,000 years) displacement in DOT Class 2 locations. Design treatment would also apply to faults recommended by SHB as having a potential to cause damage to the pipeline system. Table 4.1.4-2 (below) provides the maximum fault displacement, displacement type, earthquake magnitude, peak horizontal acceleration, and mitigation treatment length for each fault crossed by the project that meets these fault treatment criteria.

TABLE 4.1.4-2

Information for Faults Meeting Design Treatment Criteria

Fault Name	Location (MP)	Maximum Fault Displacement (ft) a/	Displacement Type b/	Earthquake Magnitude (Mw) c/	Peak Horizontal Acceleration (g) d/	Mitigation Treatment Length (ft) e/
West Valley	130.0 - 132.0	3.0	N	6.6	0.48	600
Travertine	277.0	5.0	N	6.7	0.48	800
Milford	316.5	10.0	N	7.0	0.50	800
Antelope Mountain	377.9, 379.0, 379.8	10.0	N	7.0	0.50	800
Calico (Subsidiary)	674.8	3.3	S	7.0	0.50	800
Calico	675.3, 675.8	7.0	S	7.1	0.50	800
Lenwood	13.0 (Common System)	4.6	S	6.9	0.49	1,300

a/ Based on geologic observations summarized in reports by Sergent, Hauskins & Beckwith and Woodward-Clyde/D.J. Nyman & Associates.

b/ N = Normal; S = Strike Slip.

c/ Based on Wells and Coppersmith (1994) using maximum displacement.

d/ Mean values based on Campbell (1997, 2000) alluvial site conditions, surface distance of 0 kilometer, and 4-kilometer depth to seismogenic rupture.

e/ Pipeline displacement is expected to be less than the maximum fault displacement and distributed over the mitigation treatment length.

Of the seven faults that meet the design treatment criteria, only the West Valley Fault is in a DOT Class 3 location. The remaining six faults do not have a single dwelling unit within 220 yards (660 feet) of the pipeline. Table 4.1.4-3 (page 4-16) identifies DOT classifications; distance to nearest home or business; distance, name, and population of the nearest town, city, or large population center; and distance to upstream and downstream MLVs for these faults. MLV type and estimated response time are also provided in table 4.1.4-3.

Pipe stresses at all seven of these fault crossings were modeled for the estimated earthquake magnitudes shown in table 4.1.4-2 (above). The analysis concludes that the expected pipe stress would be below that necessary to cause a rupture or pipe failure. Furthermore, results of finite element analysis at fault crossings in California, including those that did not meet the design treatment criteria, demonstrate that the pipeline has displacement capacity sufficient to maintain pressure integrity without special construction ditch geometry or backfill (AMEC, 2002). Mitigation measures KRGT incorporated into the final design include the following:

- orient the pipe at the fault crossing to produce tension in the pipe material in lieu of compression;

TABLE 4.1.4-3

Locations of Homes, Businesses, Town or Cities, and Mainline Valves Relative to Faults Requiring Design Treatment

Fault Name	Location (MP)	DOT Class	Distance to Nearest Home or Business (feet)	Distance to Nearest Town or City (miles)	Name of Town or City	Population of Town or City	Distance to Upstream Valve Setting (miles)	Distance to Downstream Valve Setting (miles)	Estimated Response Time (hours) a/
West Valley	130.0-132.0	3 b/	<500	in Salt Lake City	Salt Lake City	181,743	1.6 d/	2.1 d/	≤0.5
Travertine	277.0	1	>1,320 c/	4.5	Kanosh, UT	386	0.3 d/	18.5	≤0.5
Milford	316.5	1	>1,320 c/	4.9	Milford	<500	3.1	16.5	≤1.5
Antelope Mountain	377.9	1	1150	1.6	Newcastle, UT	435	9.1 d/	3.8	≤1.5
Antelope Mountain	379.0	1	1500	0.7	Newcastle, UT	435	10.2	2.7	≤1.5
Antelope Mountain	379.8	1	750	0.5	Newcastle, UT	435	11.0	1.9	≤1.5
Calico Subsidiary	674.8	1	>1,320 c/	3.6	Yermo, CA	<1000	8.3 d/	7.1 d/	≤2.5
Calico	675.3	1	>1,320 c/	3.2	Yermo, CA	<1000	8.8 d/	6.6 d/	≤2.5
Calico	675.8	1	>1,320 c/	2.7	Yermo, CA	<1000	9.3 d/	6.1 d/	≤2.5
Lenwood	13.0	1	2,500	0.47	Barstow, CA	23,164	13.0 d/	3.3 d/	≤1.0

a/ Response time for field personnel to get to site.

b/ Class 3 between MPs 130.3 and 131.4. The remaining area is Class 1.

c/ No homes or businesses are apparent on pipeline aerial photography or quadrangle maps.

d/ Indicates automated valve. Valve would close when line pressure reaches 600 psig or less; or when remotely closed by KRGT's Gas Control Centers.

- provide a substantial unanchored length of pipe across the fault;
- create ditch geometries (deeper or wider dependent on fault type and orientation) to minimize forces on the pipe;
- place medium dense sandy backfill around the pipe at the fault crossing;
- use heavy-wall pipe at the fault crossing;
- avoid pipe wall-thickness transitions near fault traces;
- use a certified engineering geologist to observe the construction excavation in the vicinity of the fault crossings to verify that the design assumptions are valid and the treatments are centered in the correct locations; and
- equip the MLVs located upstream and downstream of the faults with actuators.

To ensure that potential impacts associated with earthquakes are minimized, **the Agency Staffs recommend the following measure:**

- **KRGT shall incorporate the following measure into its pipeline operations and maintenance procedures. Following an earthquake within the parameters shown in the table below, KRGT operations personnel shall inspect all parts of the pipeline alignment that fall within the specified distance of the earthquake epicenter for evidence of permanent ground deformation (*e.g.*, cracks or displacements). If surface fault rupture is reported or observed, the pipeline alignment within at least 1,000 feet of the rupture shall be inspected. KRGT shall submit reports of its findings to the FERC and the CSLC.**

Earthquake Magnitude (Richter scale)	Epicentral Distance (miles)
6	5
6.5	10
7	15
7.5	20

The spacing for all MLVs on the KRGT system and the KRGT/Mojave Common System meets the requirements of Title 49 CFR Part 192, Section 192.179. Some of the existing MLVs near the faults are automated; others must be operated manually. Automation is limited in many places on KRGT's system due to the remoteness of the MLVs (radio signal cannot access certain MLVs due to mountain ranges and other obstructions to radio signals). All automated MLVs would close when the pipeline pressure is less than 600 psig or when remotely operated by KRGT's Gas Control Centers located in Salt Lake City, Utah for the KRGT system and Colorado Springs, Colorado for the KRGT/Mojave Common System. Closure times can be as quick as 3 to 4 minutes (see section 4.12.1). Both the upstream and downstream MLVs would be automated at the West Valley, Calico Subsidiary, Calico, and Lenwood Faults.

KRGT has submitted a Geohazard Assessment report [1/] certified by a California-registered Engineering Geologist and a Civil Engineer in which a detailed finite element analysis of all the fault

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1/ This report is too voluminous to include in this EIS/EIR. It is available for viewing on the project Internet web site (http://www.kernriver2003.com).

crossings was performed as per the industry guidelines titled *Guidelines for the Design of Buried Steel Pipe.* Additional information pertaining to the design treatment of the pipeline across the Calico, Calico subsidiary, and Lenwood Faults was also submitted. All information - including results of the finite element analysis of the fault crossings, pipeline design information, class location of these faults, operational conditions of the pipeline, and the automatic shutdown valves that are located upstream and downstream of the fault crossings - was subsequently evaluated using the guidelines and criteria provided by the *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems* and the *Guidelines for the Design of Buried Steel Pipe* and other industry standards (draft format). The results of this evaluation indicate that KRGT's proposed design and operational mitigation measures, in conjunction with the Agency Staffs' recommended mitigation measure, would be adequate to minimize the potential impacts associated with fault crossings to less than significant levels.

Even if the pipeline is designed to the highest available engineering standards, the possibility of pipeline rupture as a result of fault displacement during an earthquake cannot be entirely eliminated. The American Society of Mechanical Engineers (ASME) is in the process of preparing a document titled *Managing System Integrity of Gas Pipelines* (ASME, 2001). Although the document is still in draft status, it does provide a means of estimating the potential impact zone of a gas pipeline rupture. Based on this information, the potential impact area radius for a 36-inch-diameter pipeline operating at 1,200 psig would be approximately 860 feet; the potential impact radius area for a 42-inch pipeline would be approximately 1,000 feet. [2/]

KRGT's proposed mitigation measures at fault crossings are designed to protect the pipeline from rupturing should a large seismic event occur. Implementation of KRGT's design standards, selection criteria for fault treatment, and KRGT's proposed and the Agency Staffs' recommended mitigation measure at fault crossings would reduce the potential hazards associated with fault crossings to less than significant levels.

Earthquakes/Ground Shaking

Figure 4.1.4-1 (page 4-13) depicts reported earthquakes in the project area that have occurred since 1900 that were equal to or greater than magnitude 4.0.

Potentially damaging earthquakes have occurred in every county in Wyoming with the majority of the past seismic activity located in west-central and northwestern areas of the state within the ISB. Historic damaging earthquakes in the west-central area of the state include the magnitude 5.8 Grover Wyoming earthquake on June 12, 1930 that occurred in western Lincoln County, and the magnitude 5.9 Draney Peak Idaho earthquake on February 3, 1994. Both epicenters were approximately 60 miles northwest of the pipeline. The largest earthquake in the project area in Wyoming/northern Utah was the magnitude 6.3 Bear Lake earthquake of 1884 located in southeastern Idaho, approximately 40 miles northwest of the pipeline route.

Earthquakes can occur virtually everywhere in Utah, but most, including larger-magnitude earthquakes, occur in the ISB. In Utah, the ISB coincides with the boundary between the Basin and Range physiographic province to the west and the Middle Rocky Mountains and Colorado Plateau physiographic provinces to the east. The proposed pipeline route in Utah lies within the eastern portion of the Basin and Range physiographic province. The Basin and Range physiographic province is slowly being stretched or extended in an east to west direction between the Wasatch Range in Utah and the Sierra Nevada Range in California. Extension causes blocks of the earth's crust to move either up or down along faults, resulting in a mountain range-basin-mountain range topographic sequence. Utah's most active stretching, and resulting

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[2/] The refined radius of impact for natural gas is calculated using the formula $r = .69 * d \sqrt{p}$ where r is the radius of the impact circle in feet, p is the pipeline segment's MAOP in psig and d is the outside diameter of the pipeline in inches. Note: 0.69* is the factor for natural gas. It employs a critical heat flux of 5,000 Btu/hr-ft^2.

stress, is along the eastern edge of the Basin and Range physiographic province, where 16 earthquakes of magnitude 5.5 or greater have occurred between 1850 and 1995 (UGS, 1997).

Nevada is located within the Basin and Range physiographic province, one of the most seismically active regions in the United States. Strong and major earthquakes (magnitude 6.0 or greater) have occurred in the northern and west-central portions of the state approximately 300 miles northwest of the pipeline in the general vicinity of Fallon, Nevada. Since 1852, three earthquakes greater than magnitude 5.0 have been recorded in the project area (southern Lincoln and Clark Counties). The maximum recorded magnitude of these three earthquakes was a magnitude of 5.1 (University of Nevada-Reno, 2001).

The Mojave Desert and San Joaquin Valley in southern California historically have exhibited moderate to high seismicity. Faults in this region are potentially capable of generating large-magnitude earthquakes and associated strong ground motions. The Manix Fault earthquake of April 10, 1947 that occurred about 25 miles east of Barstow registered a magnitude of 6.5 and is one of the largest earthquakes ever recorded within the Mojave Block. The magnitude 5.3 Calico earthquake occurred along the northern end of the Calico Fault about 12 miles east-northeast of Barstow on March 18, 1997.

The Garlock Fault Zone is one of the most obvious geologic features in southern California, clearly marking the northern boundary of the area known as the Mojave Block, as well as the southern ends of the Sierra Nevada and the valleys of the westernmost Basin and Range physiographic province. Although no earthquake has produced surface rupture on the Garlock Fault in historic times, there have been a few sizable earthquakes recorded along the Garlock Fault Zone. The most recent was a magnitude 5.7 earthquake near the town of Mojave on July 11, 1992. This earthquake is believed to have been triggered by the Landers earthquake, which occurred 2 weeks earlier. At least one section of the Garlock Fault has shown movement by creep in recent years. Although the proposed pipeline route would not cross the Garlock Fault Zone, the fault contributes to the region's potential seismic activity.

On July 21, 1952, the magnitude 7.7 Kern County earthquake on the White Wolf Fault caused strong to very strong ground-shaking in the San Joaquin Valley. The White Wolf Fault is located north of the Garlock Fault Zone. Although not crossed by the proposed pipeline route, the existing Kern Front Meter Station is located about 37 miles northwest of the White Wolf Fault.

To quantify seismic hazards in any given region, the USGS has developed national maps of earthquake shaking hazards. Under the National Seismic Hazard Mapping Project, seismic hazard maps were updated in 1996. These maps are used to assess probabilistic seismicity and provide information used to create and update design provisions of building codes in the United States. The codes provide design standards for buildings, bridges, highways, and utilities such as natural gas pipelines. Values on these seismic hazard maps are expressed as a percentage of the acceleration of gravity, which is 32 feet per second per second, and represent the change in velocity of ground movement; the higher the value, the greater the potential hazard.

As shown on figure 4.1.4-2 (page 4-20), the project area in Wyoming, Utah, Nevada, and California has a peak acceleration (levels of horizontal shaking) range from 9 to 30 percent gravity, with a 1 in 10 chance of being exceeded in 50 years. With the exception of the Salt Lake City area and the western portions of the pipeline route in California, peak acceleration values are typically less than 10 percent gravity. A comparison with the Seismic Shaking Hazard Map of California (CDMG, 1999a) indicates peak acceleration values for California are greater than those obtained from the USGS map. For the western two-thirds of the pipeline route in California, peak ground acceleration values range from 20 to 30 percent and 30 to 40 percent gravity as compared to the 15 to 20 percent and the 20 to 30 percent gravity values shown on figure 4.1.4-2.

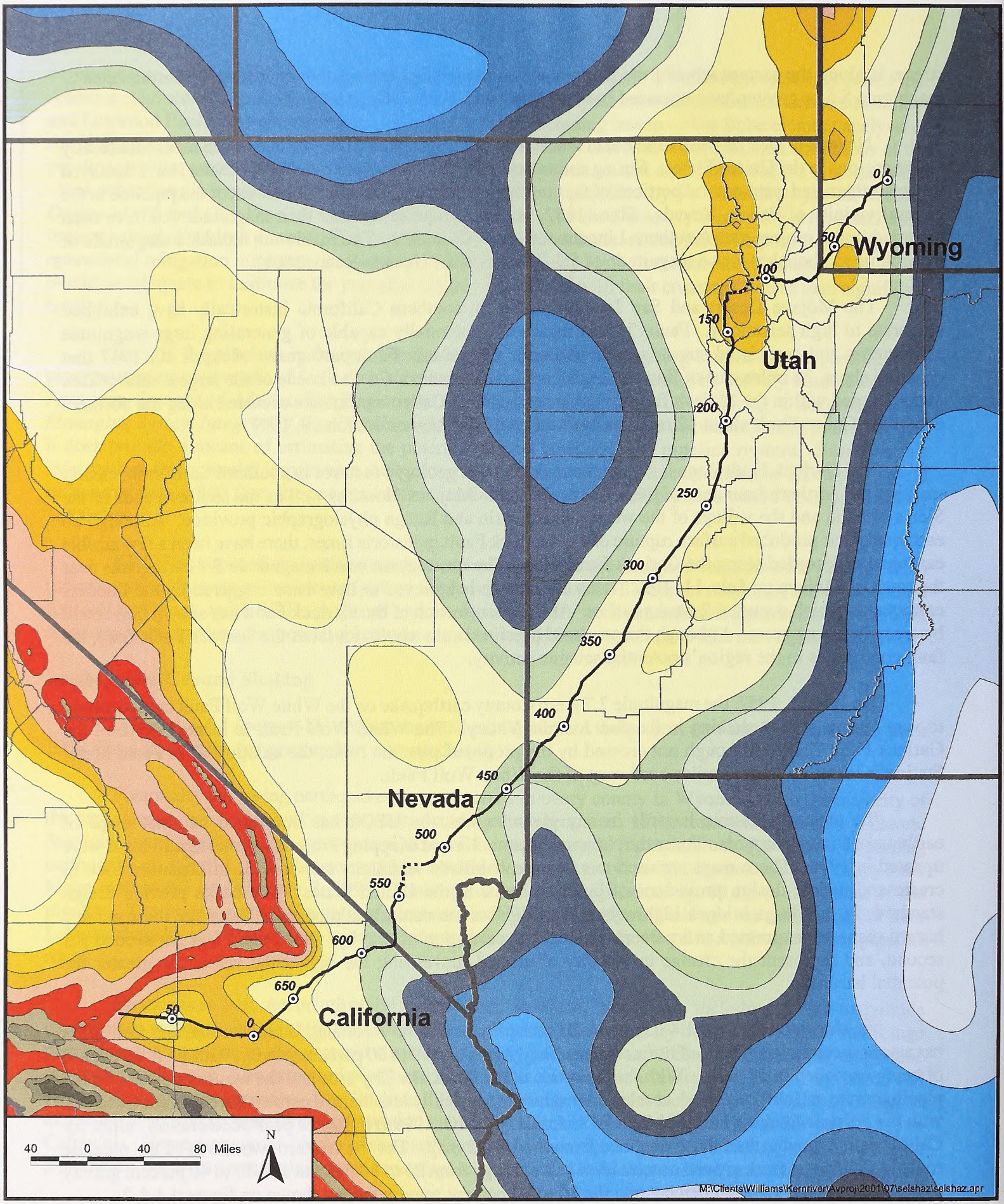

Figure 4.1.4-2
Kern River 2003 Expansion Project
Seismic Hazard Map

Ground shaking resulting from earthquakes is a potential hazard to the pipeline facilities, especially in the northern parts of Utah and in California, primarily along the Daggett Loop. Several faults crossed by the pipeline route, and other active faults within the vicinity of the project area, have the potential of generating earthquakes that could cause strong ground motions. Damage to buried pipelines is most often caused by the differential movements of geologic material as opposed to shaking itself. Aboveground structures would more likely be damaged by ground shaking.

The potential axial and bending stresses on the pipeline that would result from significant ground shaking (*i.e.*, seismic wave propagation) were calculated. Results show the maximum combined stresses related to wave propagation are well within the allowable stress levels of the pipeline, which means the pipeline would remain elastic and meet the strain criteria for normal operation during earthquake shaking where permanent ground displacement (*e.g.*, fault rupture) does not occur (AMEC, 2002).

KRGT's commitment to meet or exceed the proper design standards described above for project facilities in seismically active areas and its measures to mitigate for surface fault rupture/displacement hazards would reduce the potential effects of ground shaking associated with earthquakes to less than significant levels.

Soil Liquefaction

Secondary seismic effects triggered by strong ground shaking are often more serious than the shaking itself. Soil liquefaction is a phenomenon in which saturated, cohesionless soils temporarily lose their strength and liquefy when subjected to dynamic forces such as intense and prolonged ground shaking. Soil liquefaction typically occurs when the water table is less than 50 feet below the ground surface and the soils are predominantly unconsolidated. The potential for soil liquefaction increases as the groundwater approaches the surface. For soil liquefaction to occur, a relatively shallow water table; rapid, strong ground motions; and susceptible soils must all be present.

Soil liquefaction can affect a pipeline by causing lateral spreading, flow failures, loss of bearing strength, and flotation. Lateral spreading, which involves the horizontal movement of competent surficial soils due to the liquefaction of an underlying deposit, is a potential hazard to pipeline integrity. Lateral spreads normally develop on very gentle slopes and involve displacements ranging from 3 to 6 feet. Flow failures are a greater potential hazard associated with liquefaction. They generally occur in saturated, loose sands with ground slopes ranging between 10 and 20 degrees and can involve large amounts of material that could bend and weaken a pipeline along slopes. Given the linear extent and ductility of modern pipelines, little impact is likely to result from loss of bearing strength or flotation.

Soil liquefaction analysis and design recommendations were conducted along the majority of the pipeline route by SHB as part of the original KRGT project. Additional site-specific testing and analysis were conducted between March and May 2002 at selected areas along the California portion of the pipeline route (AMEC, 2002). [3/] Based on the results of these analyses, four areas along the pipeline route were identified as susceptible to soil liquefaction. These are in Utah in the Salt Lake Valley between MPs 124.5 and 156.0 along the Coyote Creek Loop 2 and the Salt Lake Loop, including the proposed Salt Lake Compressor Station site at MP 132.0; in various valleys along the Elberta Loop between MPs 220.0 and 236.0, including the Sevier River floodplain (MP 224.3); in Nevada, adjacent to the Muddy River along the Veyo Loop between MPs 476.5 and 477.5; and in California along the Mojave River near MP 676.7 of the Goodsprings Loop east of Barstow, and again near MP 18.0 of the Daggett Loop west of Barstow (see table 4.1.4-1 (page 4-11)).

3/ This report is too voluminous to include in this EIS/EIR. It is available for viewing on the project Internet web site (http://www.kernriver2003.com).

Mitigation measures for soil liquefaction hazards are similar to those discussed above for use at active fault crossings; however, the nature of the ground-surface displacements in liquefaction tends to be of smaller magnitude and dispersed over a wider area. Consequently, acceptable strain in pipe material can generally be sustained without actually implementing the full complement of special mitigation measures that are available. This is the case for liquefaction-prone areas along the pipeline route where soil liquefaction analysis determined the potential ground movement would not exceed allowable levels with standard wall pipe and native soil backfill (KRGT, 2002; SHB, 1990c; AMEC, 2002). Therefore, the potential for liquefaction-induced ground failure along the proposed pipeline route is not considered a significant hazard.

4.1.4.2 Slope Stability

Potential slope failure hazards occur in a number of areas along the proposed pipeline route (see table 4.1.4-1 (page 4-11)). The best mitigation for landslide hazards is to avoid landslide-prone areas. As part of the original pipeline project, detailed slope stability evaluations along the pipeline route were conducted (SHB, 1990d, 1990e). These evaluations included an engineering geological reconnaissance along the alignment, tabulation of reaches where slope gradient equaled or exceeded 20 percent, and preparation of design memoranda. These studies, along with current operation and maintenance data from the operating pipeline system, were reviewed and compared during siting of the proposed loops to avoid or minimize construction in areas of potential geologic/slope stability hazards.

In areas of slope instability, construction and operation of pipeline facilities could cause landslides. Construction activities may affect soil structure, bulk density, and subsurface water flows that could adversely affect slope stability. A change in groundwater movement due to cuts and fills for road and pipeline construction, or pipeline trenching and backfilling on steep slopes, can affect soil moisture content. This change in soil moisture content potentially can change the percent of soil saturation and cause landslides and debris flows. Excessive precipitation, seismic shaking, construction grading, and other natural or human-related causes are all potential factors in triggering landslides. Significant landslides, rockfalls, and debris flows have the potential to damage pipeline facilities.

KRGT has routed 93 percent of the proposed pipeline adjacent to the existing KRGT pipeline and the KRGT/Mojave Common System pipeline in existing well-established and stable corridors. Slope stability concerns in high-hazard areas of the Wasatch Mountains (MPs 96.4 and 121.0) were eliminated by KRGT's decision not to loop that portion of its system. KRGT has also proposed route deviations along three segments of the pipeline route to avoid construction in areas with difficult topography with a potential for slope failure (see table C-1 (pages C-1 through C-15) in appendix C). These include:

- MPs 76.1 to 76.3 - Coyote Creek Loop 1 (Wyoming). A minor route deviation is proposed in this area to avoid a steep side slope;
- MPs 164.8 to 165.0 - Salt Lake Loop (Utah). A minor route deviation is proposed at this location due to the existing severe side slope; and
- MPs 626.2 to 642.6 - Goodsprings Loop (California). Three minor route deviations are proposed in this area to avoid rocky mountain terrain and severe side slopes.

In Utah, the Pinnacle Pass area near MP 297.0 is very steep. In this location, the proposed pipeline would be installed within 25 feet of the existing pipeline, which is located in relatively moderate terrain, and therefore no special mitigation for slope failure is needed. Slope instability has been observed along the western slopes of the Pine Valley Mountains near MPs 365.0 to 380.0 (Fillmore Loop); however, the proposed route would skirt these mountains and thus avoid the areas that are susceptible to landslides.

Substantial portions of the pipeline route in California would cross terrain of relatively gentle slopes and low relief. Less than 1 percent of the slopes crossed along the Goodsprings Loop are greater than 20 percent. The steepest slopes are located along the north end of the Clark Mountains. Field reconnaissance conducted in March 2002 confirmed landslide deposits were absent from this area (AMEC, 2002), and previous studies did not identify landslide deposits in positions where they would pose a threat to the pipeline (SHB, 1990d). Although no landslide deposits were identified, KRGT proposes the three minor route deviations between MPs 626.2 and 642.6 described above to avoid steep side slopes. The SHB reports did not evaluate the portion of the pipeline route along the Daggett Loop. Evaluation along this portion of the pipeline route was conducted before construction of the KRGT/Mojave Common System. Slope stability evaluations performed at that time concluded that slopes of less than 5 degrees from horizontal (about 9 percent) are characteristic of most of the Daggett Loop (KRGT, 2001). Some slopes greater than 5 degrees exist east of Barstow. Geotechnical reconnaissance performed in 2001 observed these slopes as stable with little potential for instability (KRGT, 2001). The arid regional conditions (less than 12 inches of normal annual precipitation) mean that relatively little water is available that could facilitate instability in areas of high relief. Therefore, the potential for slope instability is not considered significant along the pipeline route in California.

As discussed, KRGT has sited the pipeline route to avoid landslide-prone areas wherever possible and has avoided areas of slope instability for the vast majority of the pipeline route. In areas that cannot be avoided, the potential for slope instability would be mitigated by KRGT's implementation of the temporary and permanent erosion control and restoration practices in its UECRM Plan, WWCM Procedures, and site-specific recommendations from SHB. These include:

- installation of slope breakers and sediment barriers across the right-of-way; and
- installation of ditch plugs (trench breakers) at vertical intervals of 100 feet or less for slope gradients of 20 percent or more near MP 45.5 of the Muddy Creek Loop and between MPs 65.0 and 73.0 of the Coyote Creek Loop 1.

In addition to the above measures, to prevent or minimize potential hazards associated with construction-induced slope instability within California, KRGT would retain a California-certified Engineering Geologist to oversee construction activities (*e.g.*, excavation) in areas of potentially unstable ground as well as oversee the attempts to locate traces of Quaternary faults during excavation.

Although the implementation of KRGT's proposed mitigation would not eliminate the possibility of landslides at every landslide-prone area that would be crossed by the pipeline, slope instability has not been associated with the existing facilities and the landslide-prone areas are typically remote. Consequently, a failure of the pipeline would not present a significant threat to public safety. Therefore, the potential impact of slope instability hazards on the pipeline facilities would be less than significant.

4.1.4.3 Subsidence

Subsidence, which is the loss of surface elevation due to the removal of subsurface support, is one of the most diverse forms of ground failure, ranging from small or local collapses to broad regional lowering of the earth's surface. Causes of subsidence can include dissolution in limestone aquifers (karst topography), first-time wetting of moisture-deficient low-density soils (hydrocompaction), past and present underground mining, and withdrawal of fluids (groundwater, petroleum, geothermal). Subsidence due to karst topography or underground mining activities is not anticipated. Additionally, there have been no instances of subsidence along the pipeline route since construction of the original KRGT pipeline and the KRGT/Mojave Common System. However, some areas in the vicinity of the project have the potential for subsidence resulting from

hydrocompaction and have experienced subsidence due to excessive groundwater withdrawal (see table 4.1.4-1 (page 4-11)).

Hydrocompaction, sometimes referred to as collapsing soil or near-surface subsidence, results from the settling of the ground surface in response to wetting of moisture-sensitive soils and could occur along the pipeline route. Hydrocompaction is caused by the consolidation of dry, loosely compacted, low-density sediments with high void ratios and high dry strength. Should these soils become wet by processes such as long-term ponding of water, irrigation, or broken water lines, settlement of the ground surface of up to 10 percent of the total thickness of the susceptible sediments could result. Holocene alluvial fans and many Quaternary fans in the Basin and Range physiographic province are potentially susceptible to some degree of soil collapse if they become fully saturated.

Ground failure assessments conducted by SHB determined that the maximum potential settlement due to collapsing soils along the pipeline route is not expected to be greater than 6 feet (vertical) with stresses spread over hundreds of feet (horizontal). Consequently, subsidence from hydrocompaction is not anticipated to adversely affect the pipeline (SHB, 1990f, 1990g). However, to further reduce the potential for hydrocompaction KRGT would:

- restore natural drainage patterns that intersect the right-of-way to prevent ponding over the trenchline; and
- conduct post-construction surveillance and monitoring of areas susceptible to collapse-induced settlement to identify areas where pipeline maintenance would be necessary to relieve stresses on the pipe.

Therefore, potential impacts of hydrocompaction on the pipeline facilities would be less than significant.

Subsidence due to excessive groundwater withdrawal could occur along the route in the Escalante Desert near Milford, Utah, and in the Las Vegas Valley and Dry Valley in Nevada (SHB, 1990f, 1990g). The potential for subsidence due to groundwater withdrawal also exists in the western Mojave Desert. Groundwater withdrawal-induced subsidence occurs in response to a change from saturated to unsaturated conditions in unconsolidated sediments. This type of subsidence is most prominent in areas underlain by thick deposits of unconsolidated alluvial deposits. Deposits consisting of mainly clay and silt-sized particles are susceptible to subsidence of greater magnitude than deposits consisting of sand and gravel-sized particles. The large withdrawal of groundwater from the generally unconsolidated alluvial sediments underlying Las Vegas has resulted in local surface subsidence of as much as 6 feet since the 1930s. In the western Mojave Dessert, future groundwater withdrawal to support the expansion of farmland (especially alfalfa farming) could lead to ground subsidence along the pipeline route.

Groundwater resources along the pipeline alignment between Daggett and Mojave fall under the direction or involvement of five groups. The USGS maintains the National Water Information Service (USGS, 2001b). The California Department of Water Resources (CDWR) coordinates with the other groups and maintains the California Water Plan (CDWR, 1998). The Antelope Valley-East Kern Water Agency supplies municipal, industrial, and agricultural clients in the Antelope Valley with water from the State Water Project. The Mojave Water Agency is the municipal and irrigation water supply operator in the area around Barstow and Daggett. The Mojave Basin Water Master compiles groundwater withdrawal data for the Mojave Basin. Of these groups, the CDWR forecasts estimates of urban and agricultural growth and, based on the forecasts, makes projections of groundwater withdrawal for urban, environmental, and agricultural use.

The pipeline route lies within the South Lahontan Hydrologic Region, which encompasses the Antelope Valley and Barstow and extends north and east to the California-Nevada Border (CDWR, 1998). Most of the population and agricultural centers within this region lie within the Antelope Valley-Barstow area;

therefore, projections for the South Lahontan Hydrologic Region are considered applicable to the area along the pipeline route between Daggett and Mojave. In the South Lahontan Hydrologic Region, the CDWR projects the irrigated acreage of alfalfa to shrink from 34,000 to 24,000 acres and the total irrigated acreage to shrink from 61,000 to 45,000 acres from 1995 to 2020. Consequently, the CDWR predicts that total applied agricultural water use will drop from 332,000 acre-feet to 257,000 acre-feet from 1995 to 2020 in the South Lahontan area. However, population is forecasted to triple from 713,000 to 2,019,000 with total applied urban water use growing from 238,000 acre-feet to 619,000 acre-feet by the year 2020. Based on these projections, the CDWR predicts that the annual overdraft (the additional extraction from a groundwater basin over a long period of time that exceeds the annual perennial yield or recharge) for the South Lahontan Hydrologic Region will remain steady at 89,000 acre-feet between 1995 and 2020.

Given the projected decrease in groundwater withdrawal due to agricultural uses (specifically alfalfa), the subsidence potential associated with future groundwater withdrawal to support future expansion of farmland is considered to be minor. However, groundwater for urban and environmental uses is expected to increase and a steady overdraft is predicted by the CDWR in the coming years. With this overdraft, groundwater levels will continue to decrease and some associated subsidence can be expected.

Because of the relation of subsidence to lowering of the water table, subsidence occurs over a broad area and is expected to continue slowly. Subsidence rates were estimated for five benchmarks in the Lancaster, California area about 25 miles south of MP 78.0, where subsidence is well documented. Subsidence rates averaged between 0.1 and 0.3 feet per year between 1955 and 1992 (Ikehara and Phillips, 1994). Analysis indicates that there are fewer water wells and generally thinner unconsolidated deposits along the pipeline route as compared to the Lancaster area; therefore, the maximum subsidence rates along the pipeline route should be less than those in the Lancaster area The expected magnitude of potential subsidence distributed over broad areas does not appear to be sufficient to damage the pipeline in the western Mojave Desert (Keaton, 2001). To verify this, tension and compression strains were calculated using finite element stress analyses (AMEC, 2002). Results indicate that the pipeline could tolerate up to 5 feet of subsidence and remain within the elastic range of strain. Larger amounts of subsidence could be tolerated without risk to pressure integrity of the pipeline.

Based on the documented subsidence rates in the western Mojave Desert, the amount of subsidence likely to occur along the pipeline route during a 50-year design life probably is less than 5 feet (AMEC, 2002). However, groundwater pumping rates may increase in response to future development, which could increase the potential for subsidence. Therefore, an operational treatment would be appropriate to address potential subsidence concerns, rather than a design treatment (AMEC, 2002). As a result, KRGT would check for evidence of subsidence during routine pipeline operations overflights and other maintenance activities along the entire pipeline route. Repairs would be made as necessary.

To ensure that potential impacts associated with subsidence in California are minimized in the future, **the Agency Staffs recommend the following measure:**

- **KRGT shall conduct a reassessment of the subsidence hazard in California after every 15 years of operation. Regions of subsidence that approach 5 feet shall be identified and the pipeline condition and performance shall be evaluated. KRGT shall submit a report of its evaluation to the CSLC and appropriate action shall be taken based on the CSLC's findings.**

Implementation of KRGT's proposed operational treatment and the additional recommendation of the Agency Staffs would reduce the potential impacts on the pipeline associated with subsidence due to excessive groundwater withdrawal to less than significant levels.

4.1.4.4 Flash Floods and Debris Flows

All ephemeral drainages in the Basin and Range and Middle Rocky Mountains physiographic provinces are susceptible to flash flooding during heavy rain events, and could be subject to debris flows. Debris flows may be generated when hillside colluvium or landslide material becomes rapidly saturated with water and flows into a channel. Intense rainfall, rapid snowmelt, and high levels of groundwater flowing through fractured bedrock can trigger the movement. Such areas are typically limited to drainages, which originate in unconsolidated sediments or landslide deposits. Flash flooding or debris flows along the pipeline could create a rupture if long, unsupported sections of the pipeline become exposed. KRGT would install the pipeline at least 5 feet below the natural bottoms of susceptible drainages and channels, greatly reducing the potential for pipeline exposure. In addition, based on current operational and maintenance information along the existing KRGT pipeline (*i.e.,* flash flooding or debris flows have not compromised the existing KRGT pipeline), the potential hazards of flash flooding and debris flows on the pipeline facilities are low. As a result, impacts associated with flash flooding or debris flows would be less than significant.

4.1.4.5 Volcanism

Hazards associated with volcanic activity include eruptions, lava flows, glowing avalanches, ash flows, volcanic mudflows (lahars), tephra falls, and emission of volcanic gases, some of which could jeopardize the integrity of the pipeline and/or aboveground facilities.

The pipeline route would pass near two areas of volcanic activity. These are the rhyolite and basaltic centers within the Basin and Range physiographic province between Pavant Butte and Black Rock Volcano along the Elberta Loop between MPs 240.0 and 275.0, and the Cima Volcanic Field in the Mojave Desert along the Dry Lake Loop 2 and the Goodsprings Loop between MPs 560.0 and 570.0. Minor dissection of flows and cones in both areas suggests that the latest activity was in the late Pleistocene or early Holocene (about 10,000 years ago). Consequently, the potential impact of volcanic hazards on the pipeline facilities would be less than significant.

4.1.4.6 Avalanches

Avalanches could jeopardize the integrity of the pipeline and/or aboveground facilities. The higher ridges and mountain slopes of the Middle Rocky Mountains are frequently subject to avalanches. Avalanches consist mainly of snow; however, they also incorporate rocks and vegetation. Ridgelines are generally free from avalanche hazards; therefore, facilities located on ridges should not be exposed to avalanche risks and buried facilities are somewhat protected from avalanche processes. Avalanche hazard evaluations conducted for the existing KRGT pipeline before construction concluded that significant avalanche hazards do not exist (SHB, 1990h). The proposed pipeline route would not cross high ridges or slopes susceptible to significant avalanche hazards or areas where an avalanche would present a significant threat to public safety. Consequently, potential avalanche hazards along the pipeline route would be less than significant.

4.1.4.7 Aboveground Facilities

The proposed Salt Lake Compressor Station site at MP 132.0 is located within the West Valley Fault Zone and within an area of high soil liquefaction potential. Several active Quaternary faults capable of surface rupture have been mapped in the vicinity of the site. According to natural hazard maps used by the Salt Lake County Department of Public Works - Planning and Development Services Division, the site is located within a "Liquefaction Potential Special Study Area" and very near or partially within a "Surface Fault Rupture Special Study Area" for the Granger Fault within the West Valley Fault Zone (Special Studies Areas, 1995). A site evaluation was conducted by URS Corporation in November 2001 to provide an understanding of the potential seismic hazards on and near the site. Soil borings and an engineering analysis were performed to evaluate the potential for the underlying soils to liquefy during a seismic event. Potentially liquefiable soils

consisting of relatively thin layers of loose sand were encountered in some areas of the site at depths ranging from 15 to 25 feet below ground surface (bgs). The consequences of liquefaction of the loose sandy layers would likely be post-liquefaction settlement of less than 1 to 2 inches. Lateral spreading or downslope movement is not expected at the site (URS, 2002).

The site is located immediately north of the Granger Fault, a trace of the West Valley Fault Zone. Shallow trenching was conducted at the site as part of a surface fault rupture hazard evaluation. No evidence of faulting or fault-related deformation was observed in any of the sediments exposed in the trench excavation (URS, 2002). Nonetheless, excavations during construction of the compressor station would be inspected for evidence of fault traces. If such evidence is discovered, a qualified engineering geologist would evaluate the potential impact on the proposed structures and develop means to mitigate the risk posed by fault rupture.

Final design approval and construction would comply with the Salt Lake County Natural Hazards Ordinance, Chapter 19.75 of the Counties Zoning Ordinance, local building permits, and current building codes for seismic design. By doing so, potential impacts would be less than significant.

No potential geologic hazards have been identified at either the Coyote Creek or Dry Lake Compressor Station sites.

4.1.5 Paleontological Resources

The proposed pipeline would cross various formations that are known or have the potential to contain significant paleontological resources. While most geologic formations have the potential to contain fossils, those containing vertebrate fossils are considered to be the most significant. Vertebrate fossils tend to be rare and fragmentary, and thus have greater scientific importance than the more common invertebrate and plant fossils.

As a condition of the FERC Certificate for its original pipeline, KRGT evaluated and surveyed paleontological resources along the pipeline route. Areas that were determined to have a high paleontological sensitivity were monitored during construction. Similar work was performed during construction of the KRGT/Mojave Common System pipeline. The locations and results of these monitoring efforts are provided in appendix J.

4.1.5.1 General Impact and Mitigation

Paleontological resources could be affected by construction of the pipeline and associated aboveground facilities, as well as by the resulting increased public access to these resources. Without mitigation, ground disturbance during construction could cause significant impact on paleontological resources. The FLPMA of 1976 and NEPA mandate the protection of significant paleontological resources on federally owned or controlled lands. The CEQA also requires the protection of paleontological resources in California. Direct physical modifications of paleontological resources could occur during project construction by activities such as grading or trenching. Indirect impact on fossil beds could result from erosion caused by slope regrading, vegetation clearing, and unauthorized collection. Avoidance is the most effective mitigation method to protect significant fossil localities. If avoidance is not possible, scientific excavation to recover fossil materials would reduce the impact to an acceptable level.

To mitigate potential impacts on paleontological resources, KRGT has developed a PRM Plan for the Kern River 2003 Expansion Project (see appendix K). In accordance with the PRM Plan, KRGT would conduct preconstruction surveys in areas where the proposed pipeline alignment deviates from the existing right-of-way in areas of high paleontological sensitivity. During construction, KRGT would monitor sedimentary units where previous field surveys identified scientifically significant fossils along the pipeline route and all areas that have a high paleontological sensitivity where trenching would be conducted outside

the previously disturbed construction right-of-way (table 4.1.5-1 (page 4-29)). Specific mitigation measures in the PRM Plan include:

- obtaining a permit for the monitoring and recovery of paleontological specimens on property managed by the BLM or other Federal land management agencies (on private lands, KRGT would notify the agency/entity having jurisdiction over paleontological resources (*e.g.*, permitting and archiving in each state) before construction and obtain necessary permits);

- monitoring sedimentary units where previous and new field surveys identified scientifically significant fossils along the proposed pipeline route and for those route deviations or alternatives in areas of high paleontological sensitivity identified in table 4.1.5-1 (page 4-29). An approved, qualified paleontological monitor would be present during ground-disturbing activities. Disturbed areas would be checked immediately after brushing and trenching, and before the pipe is installed and the trench is backfilled. The paleontologist would also be present to monitor when fossils or fossiliferous sediments are encountered during ground-disturbing activities. The monitor would identify the diagnostic elements of any fossils and be equipped to preserve unearthed fossils. The monitor would have the authority to temporarily divert construction equipment in the event significant paleontological resources are discovered;

- educating workers about the potential discovery and importance of paleontological resources and spot-checks by paleontologists in non-monitored areas;

- notification of the paleontologist in the event of a find in a non-monitored area;

- determination and verification of the paleontological sensitivity of additional workspace areas before ground disturbance;

- preparation, identification, preservation, and curation of recovered fossils; and

- preparation of reports to document findings.

All phases of mitigation would be conducted under the direct supervision of a qualified paleontologist and in accordance with applicable permits. Recovered fossils would be prepared to the point of identification and preserved for curation at a museum or as set forth in the repository agreement.

To assist the CSLC's third-party monitors with implementation of the MMP, KRGT would provide copies of all paleontological permits to the CSLC before construction in California.

Upon completion of excavation and grading activities, a final monitoring report would be prepared by KRGT that would include a summary of field observations, recoveries, and an itemization of all specimens collected. Within 90 days of the completion of construction of the pipeline and associated facilities, KRGT would provide copies of the final paleontological resources monitoring report to the FERC, the CSLC (for lands in California), and the BLM and other appropriate Federal land management agencies.

Implementation of the measures in KRGT's PRM Plan and these additional measures would reduce the potential impact of the project on paleontological resources to less than significant levels.

TABLE 4.1.5-1

Areas to be Monitored for Paleontological Resources During Construction of the Kern River 2003 Expansion Project

State/Facility	Mileposts	Adjacent to Existing KRGT/Mojave Pipeline Corridor	Description	Disturbed by Previous Construction/ Surveyed
WYOMING				
Opal Loop				
	0.0-6.3	Yes	Significant fossils discovered during 1991 construction.	Disturbed Surveyed
Muddy Creek Loop				
	14.0-16.6	No	Deviation from the existing KRGT pipeline to avoid cultural resources.	Not Disturbed, Not Surveyed
UTAH				
Salt Lake Loop				
	162.0- 162.5	No	Deviation from the existing KRGT pipeline to avoid a gravel pit mine.	Not Disturbed, Not Surveyed
NEVADA				
Veyo Loop				
	471.6-471.9	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
	472.0-472.4	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
	474.6-476.2	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
	477.6-478.7	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
	479.7-480.1	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
Dry Lake Loop 2				
	543.6-545.3	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
CALIFORNIA				
Goodsprings Loop				
	624.5-625.4	Yes	Significant fossils discovered during 1991 survey.	Disturbed, Surveyed
	652.0-652.0	Yes	Significant fossils discovered during 1991 survey.	Disturbed, Surveyed
	658.3-660.1	Yes	Significant fossils discovered during 1991 survey.	Disturbed, Surveyed
	665.6-670.0	Yes	Significant fossils discovered during 1991 survey.	Disturbed, Surveyed
	674.3-676.3	Yes	Significant fossils discovered during 1991 survey.	Disturbed, Surveyed
	677.9-678.3	Yes	Significant fossils discovered during 1991 survey.	Disturbed, Surveyed
Daggett Loop				
	15.9-16.6	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
	19.2-28.8	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
	42.2-43.0	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed
	59.6-59.6	Yes	Significant fossils discovered during 1991 construction.	Disturbed, Surveyed

4.2 SOILS

Significance Criteria

Adverse impact on soils would be considered significant and would require additional mitigation if project construction or operation would:

- increase erosion rates or reduce soil productivity by compaction or soil mixing to a level that would prevent successful rehabilitation and eventual reestablishment of vegetative cover to the recommended or preconstruction composition and density;
- reduce agricultural productivity for longer than 3 years because of soil mixing, structural damage, or compaction; or
- increase exposure of human or ecological receptors to potentially hazardous levels of chemicals or explosives due to the disturbance of contaminated soils or to the discharge or disposal into soils of hazardous materials.

4.2.1 Methodology and Description of Soils

The soils crossed by the Kern River 2003 Expansion Project pipeline facilities were analyzed using the State Soil Geographic (STATSGO) database; U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) county soil surveys; and soil association information presented in the Mojave-Kern River-El Dorado Natural Gas Pipelines Projects, Final EIR (Chambers Group, Inc., 1987).

The STATSGO database was developed by the NRCS for use in regional, multi-state, river basin, state, and multi-county resource planning. STATSGO spatial data are compiled by combining geologically and topographically related soil series found in county soil surveys into larger map units called Map Unit Identifiers (MUIDs). The STATSGO database provides information on soil limitations or the vulnerability of a soil to development impacts.

Wyoming

In Wyoming, the pipeline route crosses 8 MUIDs comprising 86 soil components. The soils crossed consist of silty clays, clay loams, silty clay loams, silt loams, loamy clays, fine sandy loams, loams, and sandy loams. Most of the soils along the pipeline route support rangeland and wildlife habitat due to the generally arid climate, often steep terrain, and often low permeability of soils.

Utah

In Utah, the pipeline route crosses 44 MUIDs comprising 311 soil components. The soils crossed are diverse and include clays, clay loams, silty loams, fine loams, silty clay loams, gravelly clay loams, fine sandy loams, very gravelly sandy loams, gravelly loams, very gravelly silty loams, stony loams, very gravelly loams, and very cobbly loams. Badland and rocky outcrops are common along the southern portion of the route. Most soils along the pipeline route in Utah support rangeland and wildlife habitat because they are shallow, sloping, or poorly drained. Some soils, particularly in the Salt Lake area, are more fertile and are used for agriculture.

Nevada

In Nevada, the pipeline route crosses 12 MUIDs comprising 102 soil components. The soils crossed are diverse and consist of silty clays, clayey alluviums, silty clay loams, loams, fine sandy loams, sandy loams, gravelly loams, very gravelly sandy loams, extremely gravelly fine sandy loams, very stony fine sandy loams, and very cobbly fine sandy loams. Areas of badland and rockland occur mostly along the northern portion of the route while many soils along the southern portion of the route are covered by a gravelly desert pavement. The soils primarily support rangeland and wildlife habitat because they are generally coarse-textured and dry.

California

In California, the pipeline route crosses 18 MUIDs comprising 226 soil components. The soils crossed consist of clays, loams, sandy loams, gravelly sand loams, loamy sands, gravelly loamy sands, and gravelly sands. Many of the soils along the route in California are covered with a gravelly desert pavement. Many of the soils are limited by wind erosion, drought, and shallow bedrock and primarily support rangeland and wildlife habitat.

4.2.2 Soil Limitations

4.2.2.1 Pipeline Facilities

The soils, including prime farmland soils, along the pipeline route were evaluated according to major limitations that could affect construction or increase the potential for soil impact. The soil limitations evaluated were high water erosion potential, high wind erosion potential, soil compaction, shallow bedrock or rocky soils, droughty soils, and areas of poor revegetation potential. Each soil component was evaluated for these characteristics, then the total percentage of each MUID with these characteristics was summarized. These percentages, along with the length of pipeline route in each MUID, were used to estimate the acreage of soils with limitations that would be crossed by the pipeline. Table 4.2.2-1 (page 4-32) summarizes soil limitations along the pipeline route. The nature and prevalence of each limitation are discussed below.

Erosion Potential

Erosion is the natural detachment and movement of soils, and leads to loss of soil productivity and changes in composition. The erosion potential of soil is determined by several characteristics, including soil texture, surface roughness, vegetative cover, slope length, percent slope, management practices, and rainfall. Water erosion occurs primarily on loose, bare soils located on moderate to steep slopes when subjected to storm events. Wind-induced erosion often occurs on dry, fine-textured soil where vegetative cover is sparse and strong winds are prevalent. Based on the soil limitations analysis, pipeline construction would disturb about 2,723.6 acres of soils that are highly susceptible to water erosion and 1,230.7 acres of soils that are highly susceptible to wind erosion. The majority of soils along the route that are prone to water erosion occur in Utah (about 55 percent), and to a lesser extent in Wyoming (about 18 percent). About 84 percent of the soils prone to wind erosion occur in California.

TABLE 4.2.2-1

Soil Limitations Along the Kern River 2003 Expansion Project Pipeline Route (in acres) a/

State/Facility	Water Erosion	Wind Erosion	Soil Compaction	Large Stones	Areas of Shallow Bedrock	Droughty Soils	Areas of Poor Revegetation Potential	Prime Farmland	Total Acres
WYOMING									
Opal Loop	25.2	29.0	0.0	12.1	0.0	16.3	61.6	0.0	144.2
Muddy Creek Loop	443.9	21.4	0.0	425.1	58.5	41.3	240.7	0.0	1,230.9
Coyote Creek Loop 1 b/	31.4	0.0	0.0	15.7	19.6	0.0	6.4	0.0	73.1
Wyoming Subtotal	500.5	50.4	0.0	452.9	78.1	57.6	308.7	0.0	1,448.2
UTAH									
Coyote Creek Loop 1	190.5	0.0	0.0	302.5	105.0	2.8	54.0	45.3	700.1
Coyote Creek Loop 2	0.0	0.0	0.0	38.6	38.6	0.0	9.6	57.8	144.6
Salt Lake Loop	125.3	1.4	0.0	338.4	121.8	0.0	204.6	418.9	1,210.4
Elberta Loop	448.3	5.3	0.0	663.8	216.2	5.7	569.2	127.1	2,035.6
Fillmore Loop	610.5	101.4	0.0	590.7	277.0	192.7	674.1	39.2	2,485.6
Veyo Loop	127.4	5.5	0.0	196.3	134.0	1.7	320.8	5.2	790.9
Utah Subtotal	1,502.0	113.6	0.0	2,130.3	892.6	202.9	1,832.3	693.5	7,367.2
NEVADA									
Veyo Loop	109.8	28.0	79.0	49.5	53.9	34.3	968.2	0.0	1,322.7
Dry Lake Loop 1	40.3	1.9	14.4	26.0	21.1	23.8	214.6	0.0	342.1
Dry Lake Loop 2	131.1	2.6	45.6	89.1	103.1	31.2	288.0	0.0	690.7
Goodsprings Loop	46.4	4.4	30.3	21.9	7.4	30.3	196.8	0.0	337.5
Nevada Subtotal	327.6	36.9	169.3	186.5	185.5	119.6	1,667.6	0.0	2,693.0
CALIFORNIA									
Goodsprings Loop	289.0	509.6	0.5	35.9	186.0	119.7	1,066.6	0.0	2,207.3
Daggett Loop	104.5	520.2	7.1	9.7	85.8	109.5	660.7	0.0	1,497.5
California Subtotal	393.5	1,029.8	7.6	45.6	271.8	229.2	1,727.3	0.0	3,704.8
Project Total c/	2,723.6	1,230.7	176.9	2,815.3	1,428.0	609.3	5,535.9	693.5	15,213.2

a/ Acres were estimated by determining the percentage of each limitation within a MUID, multiplied by the length of pipeline route in each MUID.

b/ The portion of the Coyote Creek Loop 1 in Wyoming includes soils crossed by the Anschutz Lateral.

c/ Acres of soil limitations may overlap and therefore do not equate to total acres of disturbance for the project.

Soil Compaction

Compaction is usually a problem associated with fine-textured and/or organic rich soils with a high moisture content. The soils most prone to compaction are generally somewhat poorly drained to very poorly drained and often hydric. Compaction can reduce porosity, infiltration, and aeration of the soil, all of which are important to root health and plant growth. Compaction on sloping land can also significantly decrease the water infiltration potential and increase the potential for sheet and rill erosion along a construction right-of-way. About 176.9 acres of soils (or 1 percent of the disturbed acreage) that are highly prone to compaction would be disturbed by pipeline construction. Nearly all of these soils (about 96 percent) occur in Nevada.

Large Stones and Shallow Soils

Stony soils are identified as soils that have either a cobbly, stony, bouldery, gravelly, shaly, or slaty modifier to their textural class, or have greater than 5 percent (weight basis) of stones larger than 3 inches in the surface layer. Shallow soils are identified as soils where more resistant or hard bedrock occurs at depths of less than 7 feet. Construction through these soils sometimes requires blasting and often results in excess rock being brought to the surface of the right-of-way. Of the two characteristics, stony soils are nearly twice as prevalent as shallow bedrock along the pipeline route. Pipeline construction would disturb about 2,815.3 acres of stony soils and about 1,428.0 acres of shallow bedrock soils. Most of these soils (about 76 percent of stony soils and 63 percent of shallow bedrock soils) occur in Utah.

Droughty Soils

Droughty soils have a surface texture of sandy loam or coarser and are moderately well to excessively drained. Consequently, droughty soils are susceptible to soil moisture deficiency within the plant root zone and can be difficult to revegetate. Pipeline construction would disturb about 609.3 acres of droughty soils. The majority of these soils occur in California (about 38 percent) and Utah (about 33 percent).

Poor Revegetation Potential

Soils with poor revegetation potential include soils that are droughty, prone to water and wind erosion, or have some other major limitation such as pH or salinity. These conditions affect the revegetation potential of a soil by limiting the choice of revegetation species to those that are adapted to these conditions. Extra efforts and time are necessary to restore these areas to preconstruction conditions. Soils with poor revegetation potential are identified in the STATSGO database as having a poor to very poor potential to support wildlife habitat and rangeland. Poor revegetation potential is the most prevalent soil limitation along the pipeline route. About 5,535.9 acres of soils with this limitation would be disturbed. The majority of these soils occur in Utah (about 33 percent), California (about 31 percent), and Nevada (about 30 percent).

Prime Farmland Soils

Prime farmland, as determined by the Secretary of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Prime farmland soils can include either actively cultivated land or land that is currently not cultivated, but is readily available for cultivation. These properties make impacts on prime farmland soil of particular concern. Pipeline construction would temporarily disturb about 693.5 acres of prime farmland soils, all of which occur in Utah, primarily along the Salt Lake and Elberta Loops.

4.2.2.2 Aboveground Facilities

More than 5 acres of soils would be disturbed at each of the new and modified compressor stations. Except for the 4 acres required at the Veyo Compressor Station, the modifications at the existing compressor stations would occur within the fenceline of the existing facilities and would not require additional land. The

five meter station modifications would not require additional land, and soil disturbances at these meter station sites would be minimal. Table 4.2.2-2 (page 4-35) lists the soil characteristics and limitations for the new and existing compressor station sites. No prime farmland would be affected by any of the proposed aboveground facilities.

4.2.3 General Impact and Mitigation

4.2.3.1 Pipeline Facilities

Construction activities can result in a number of different soil or soil-related impacts including increased erosion, compaction, reduced fertility, poor revegetation, and the introduction of noxious weeds. KRGT would minimize the potential for these impacts by implementing the mitigation measures contained in its UECRM Plan (see appendix E) and by adhering to its site-specific Reclamation Plans and Noxious Weed Plan (see sections 4.5.2 and 4.5.4). [4/] A discussion of each of these potential impacts and the measures KRGT proposes to employ to minimize adverse soil effects is presented below.

Pipeline construction activities such as clearing, grading, trench excavation, backfilling, and the movement of construction equipment along the right-of-way would impact soil resources. Erosion is a continuing, natural process that can be accelerated by human activities. Clearing, grading, and the movement of equipment on the right-of-way would remove the protective vegetative cover and expose soils to the effects of wind, rain, and runoff. The effects would accelerate the erosion process and, without adequate protection, could result in discharges of sediment to wetlands and waterbodies and could lower soil fertility. Although all soils would be prone to erosion to some degree, factors that would influence the rate of erosion include soil texture and structure, the length and percent of slope, vegetative cover, and rainfall or wind intensity. The most erosion-prone soils are generally bare or sparsely vegetated, non-cohesive, fine textured, and situated on moderate to steep slopes. Soils more resistant to erosion include those that are well vegetated, well structured with high percolation rates, and located on flat to nearly level terrain.

Erosion control measures proposed for the Kern River 2003 Expansion Project are detailed in both KRGT's UECRM Plan and its site-specific Reclamation Plans. To summarize, during construction KRGT would install and maintain various erosion control measures. These include temporary slope breakers on slopes and temporary sediment barriers such as straw bales or silt fence across the right-of-way during construction at the base of slopes, adjacent to waterbodies, wetlands, and roadways, and along the edge of the right-of-way as necessary to prevent sediment from flowing off the right-of-way. KRGT would install erosion control netting on waterbody banks, very steep slopes, and in drainages that may be susceptible to erosion. To protect topsoil from wind erosion, KRGT would apply water and/or a water-based non-toxic, organic tackifier to the topsoil piles in all areas identified as highly susceptible to wind erosion (see table 4.2.2-1 (page 4-32)) and in other areas where soil conditions warrant. Sections 4.3.2.11 and 4.7.2 provide additional discussion on the use of these measures and the potential impact on surface waters and the desert tortoise, respectively.

KRGT would implement reclamation efforts to enhance revegetation and address soils with poor revegetation potential. These efforts would include topsoil segregation, recontouring, applying erosion control mulch on slopes, respreading cut vegetation or preserved rock mulch, imprinting the surface of the right-of-way, installing permanent slope breakers, and seeding with species adaptable to the climate (see section 4.5.2.1). These measures would also reduce soil loss through wind erosion. Implementation of the measures described in KRGT's UECRM Plan and site-specific Reclamation Plans and its proposed measures to protect topsoil from wind erosion would reduce erosion impacts to less than significant levels.

[4/] With the exception of the California Reclamation Plan (see appendix V), these plans are too voluminous to include in this EIS/EIR. These plans are discussed in this EIS/EIR and are available for viewing in their entirety on the project Internet web site (http://www.kernriver2003.com).

TABLE 4.2.2-2

Soil Characteristics and Limitations for Aboveground Facility Sites

State/Facility	Soil Association	Soil Units	New Sites (acres) Const.	New Sites (acres) Oper.	Existing Sites (acres) a/	Major Soil Limitations
WYOMING						
Muddy Creek Compressor Station	Haterton-Teagulf-Westvaco	Haterton loam	0.0	0.0	3.0	Erosion potential–low to moderate; Shallow to bedrock; Poor revegetation potential
		Teagulf sandy loam	0.0	0.0	4.0	Erosion potential–low to moderate
		Westvaco clay loam	0.0	0.0	3.0	Erosion potential–low to moderate; Moderate to strongly saline-alkaline; Poor revegetation potential
Subtotal			0.0	0.0	10.0	
Coyote Creek Compressor Station	Blazon-Richman-Pinelli	Blazon clay loam	11.0	10.9	0.0	Erosion potential–moderate to high; Shallow to bedrock; Poor revegetation potential
		Richman fine loam	11.0	11.0	0.0	Erosion potential–moderate to high
		Pinelli loam	9.0	9.0	0.0	Erosion potential–low to moderate
Subtotal			31.0	30.9	0.0	
UTAH						
Salt Lake Compressor Station	Saltair-Jordan - Lasil	Decker loam	13.0	13.0	0.0	Erosion potential–moderate; Moderate to strongly saline-alkaline; Poor revegetation potential
		Lasil silt loam	14.5	14.5	0.0	Saline–alkaline
		Terminal silt loam	4.5	4.5	0.0	Shallow to bedrock; Strongly saline-alkaline; Poor revegetation potential
Subtotal			32.0	32.0	0.0	
Elberta Compressor Station	Genola-Linoyer-Medburn	Genola silt loam	0.0	0.0	10.0	Moderate to strongly saline-alkaline
Subtotal			0.0	0.0	10.0	
Fillmore Compressor Station	Rypod-Boxelder-Ebbs	Rypod loam, cobbly loam	0.0	0.0	3.0	Stoniness; Erosion potential–low to moderate
		Boxelder loam	0.0	0.0	3.0	Poor revegetation potential
		Ebbs fine loam	0.0	0.0	4.0	
Subtotal			0.0	0.0	10.0	
Veyo Compressor Station	Curhollow-Pasture-Rockland	Magotsu very cobbly loam	0.0	0.0	8.0	Erosion potential–moderate; Stoniness
		Pastura gravelly loam	0.0	0.0	6.0	Erosion potential–low to moderate; Stoniness
Subtotal			0.0	0.0	14.0 b/	
NEVADA						
Dry Lake Compressor Station	Bard-Colorock-Tonopah	Bard gravelly sandy loam	23.3	22.9	0.0	Shallow to bedrock
Subtotal			23.3	22.9	0.0	
Goodsprings Compressor Station	Weiser-Dalian	Weiser cobbly, sandy loam	0.0	0.0	10.0	Erosion potential – moderate to high
Subtotal			0.0	0.0	10.0	
CALIFORNIA						
Daggett Compressor Station	Cajon-Manet	Cajon gravelly loamy sand	0.0	0.0	2.0	Erosion potential–low to moderate; Stoniness
Subtotal			0.0	0.0	2.0	
Project Total			86.3	85.8	56.0	

a/ Approximate acres of soil disturbance within the total aboveground facility boundary.

b/ A total of 4 acres of temporary disturbance would occur outside of the existing facility boundary.

Construction equipment operating and traveling on the construction right-of-way, especially during wet periods and on poorly drained soils, can compact the soil. Soil compaction can also result from the storage of heavy spoil piles on certain types of soil for extended periods of time. Soil compaction destroys soil structure, reduces pore space and the moisture holding capacity of the soil, and increases runoff potential. If unmitigated, compaction results in soils with a reduced revegetation potential and an increased erosion hazard. The degree of compaction depends on the moisture content and texture of the soil. Wet soils with fine clay textures are the most susceptible to compaction.

KRGT addresses compaction in its UECRM Plan, WWCM Procedures, and site-specific Reclamation Plans. To summarize, KRGT would minimize compaction by adjusting construction schedules to avoid compaction-prone areas during short-term weather events. Rutting and compaction would be avoided or minimized by operating heavy construction equipment on timber mats across minor tributaries, adjacent wetlands, and other areas as deemed necessary during construction. It would be the responsibility of the EI, in conjunction with the agencies' compliance monitor, to assess the potential for compaction given the soil type, hydrologic conditions, and current and predicted weather events. After construction, KRGT would test disturbed soils for compaction using a cone penetrometer or other appropriate device in comparison with adjacent undisturbed soils. Should compaction occur, soils would be plowed with a paratill, paraplow, or other deep tillage device to alleviate compaction. The implementation of KRGT's UECRM Plan, WWCM Procedures, and site-specific Reclamation Plans would reduce impacts associated with compaction to less than significant levels.

In addition to erosion and compaction, construction activities such as grading, trenching, and backfilling can cause mixing of soil horizons. Mixing of topsoil with subsoil, particularly in agricultural lands, leaves less productive soil in the root zone, which lowers soil fertility and the ability of disturbed areas to revegetate successfully. Another result of soil mixing and disturbance can be a change in appearance of the surface of disturbed soils when viewed in comparison with the adjacent undisturbed soils. The visual contrast would be especially evident in areas where a desert varnish is present on rock/desert pavement. Visual impact and mitigation are discussed in section 4.8.7.

To reduce the mixing of soil horizons on its construction right-of-way, KRGT would segregate topsoil in accordance with its UECRM Plan and site-specific Reclamation Plans. Topsoil segregation helps preserve the superior chemical and physical properties of the topsoil and protects the native seed source. Soil crust propagules, which enhance the recovery of biological crusts in desert areas, are also preserved during topsoil segregation. At a minimum, KRGT would segregate topsoil in all annually cultivated or rotated agricultural lands, hay fields, and residential areas. KRGT would also segregate topsoil in those other lands where the landowner requests that it occur. To ensure that all landowners affected by the project are aware of their right to request topsoil segregation, KRGT sent letters to all landowners requesting that they notify KRGT of their desire to have this treatment performed on their land.

In general, topsoil segregation is accomplished by separating the topsoil from the subsoil during trenching operations and replacing them in the proper order during backfilling and final grading. In deep soils, KRGT would segregate at least 12 inches of topsoil. Where shallow soils (with topsoil less than 12 inches deep), or soils with stony subsoil are encountered, KRGT would make every effort to segregate the entire topsoil layer. KRGT would segregate topsoil using one of the following methods: from either the full work area (full right-of-way method), from the trench and subsoil storage area (trench plus spoilside method), or from the trench and working side (trench plus working side method). The determination of where each topsoil segregation method would be used would be finalized before construction and included in the COM Plan for the BLM, private landowner agreements, and other applicable permits. To date, KRGT estimates that: 1) full right-of-way topsoil stripping would occur on about 16 percent of the route, typically in areas such as agricultural land; 2) topsoil would be segregated using the trench plus spoilside method on about 36.4 percent

of the route, typically in upland rangeland areas; and 3) topsoil would be segregated using the trench plus working side method on BLM lands in California (about 14.6 percent of the route). The topsoil on the remaining properties (primarily privately owned land) would be segregated, or not, in accordance with the request of each landowner and as negotiated in the right-of-way easement.

Topsoil would be stockpiled separately from subsoil and the two stockpiles would be replaced in the proper order during backfilling and final grading. The draft EIS/EIR stated that in California, the topsoil material would be covered by the trench spoil to protect it from wind erosion until it could be used in reclamation. The statement should have clarified that this method was only proposed to be used on BLM lands in California and not for the entire portion of the route in California. Originally, the BLM California State Office requested this specific topsoil segregation method to protect the topsoil from wind erosion. However, subsequent to the draft EIS/EIR, KRGT provided additional measures that it proposes to use to protect topsoil from wind erosion. Specifically, KRGT would apply water and/or a non-toxic, organic tackifier on the segregated topsoil piles to prevent the loss of the materials through wind erosion. The BLM in California has agreed that implementation of this measure would be sufficient to reduce the potential impacts associated with wind erosion. As a result, where topsoil segregation would occur, the topsoil and subsoil would be stockpiled separately along the entire pipeline route, including on BLM lands in California. Topsoil segregation treatments for rangeland and native habitats are described in more detail in section 4.5.2.1; KRGT's UECRM Plan addresses topsoil segregation in residential and agricultural lands.

It would be the responsibility of the EI and the Chief Inspector to ensure contractor compliance with the topsoil segregation requirements of all permits and approvals. Other controls would include oversight by the FERC, the BLM, the FS, the CSLC, other regulatory agencies, and third-party compliance monitors representing the agencies. Implementing topsoil segregation as described in KRGT's UECRM Plan and site-specific Reclamation Plans would reduce the impact of soil mixing to a less than significant level.

Trenching, ripping, or blasting of stony or shallow bedrock soils can bring stones or rock fragments to the surface, which could interfere with agricultural practices and hinder restoration of the right-of-way. In all actively cultivated or rotated cropland and improved pastures, KRGT would minimize these impacts by segregating topsoil and removing (picking) excess rock from the top 12 inches of soil so that the size, density, and distribution of rock on the right-of-way is similar to adjacent undisturbed areas. On rangelands, KRGT anticipates rocks may be disposed of along the right-of-way by scattering them in a natural pattern, as permitted by the landowner or land management agency. If caliche is found in the subsoil, small pieces would be buried on the right-of-way with at least 24 inches of cover while larger pieces of caliche may be disposed of in an appropriate landfill. Implementation of these measures would reduce the impact of excess rock being brought to the surface to less than significant levels.

Construction can facilitate the establishment of noxious or invasive weeds where none or few existed. The clearing of existing perennial vegetation provides an opportunity for weed species to invade the right-of-way, and the movement of equipment along the right-of-way could transport weed seed and plant parts from one location to another (see section 4.5). The seriousness of these effects would depend on the prevalence of weeds in the area of the pipeline route, the type of weed and its method of reproduction and dispersal, the loss of potential natural barriers such as a diversity of vegetation, and the weed's effect on current or future land use. To minimize and control the spread of noxious weeds, KRGT would implement its Noxious Weed Plan and its site-specific Reclamation Plans (see section 4.5.2). Implementation of KRGT's Noxious Weed Plan and site-specific Reclamation Plans would reduce the impacts on soil resulting from noxious weeds to less than significant levels.

Contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment could also have an impact on soils. This potential impact is expected to be minor, however, because of the typically

low frequency, volume, and extent of spills or leaks on pipeline construction projects. Implementation of KRGT's Spill Plan (see section 4.3.1.1) would reduce the impacts of soil contamination from spills or leaks to less than significant levels.

A comment was received during the scoping process expressing concern about the impact of the project on biological soil crusts. Biological soil crusts, also known as cryptogamic, cryptobiotic, microbiotic, or microphytic soil crusts, occur on undisturbed soils in arid or semi-arid regions. They are the result of complex communities of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria that form crusts that protect the soils from erosion. The crusts function as a living mulch that aids in moisture retention and nitrogen fixation and hinder annual weed growth. Biological soil crusts would be expected to be found along the pipeline right-of-way on undisturbed, fine-textured soils within native desert habitats. Biological soil crusts are sensitive to soil disturbance and slow to recover. The project would result in a long-term impact on these soil crusts on the pipeline right-of-way. However, recovery of the biological crusts would be enhanced by KRGT's implementation of topsoil segregation, which would preserve soil crust propagules, and by imprinting, which would aid in stabilizing the soil and promote water collection and infiltration.

4.2.3.2 Aboveground Facilities

Impacts and mitigation associated with the new aboveground facilities and corresponding powerlines would be similar to those described for construction of the pipeline facilities; however, impacts at these locations would be permanent. Mitigation measures implemented in these locations would be limited to erosion control measures as described in KRGT's UECRM Plan and its site-specific Reclamation Plans. Soil impacts for aboveground facilities, although not fully mitigated, would not be considered significant due to the relatively small amount of soils affected.

4.3 WATER RESOURCES

Significance Criteria

Adverse impact on groundwater would be considered significant and would require additional mitigation if project construction or operation would:

- alter the flow of groundwater to local springs or wetland areas;
- interrupt or degrade groundwater used for private or municipal purposes; or
- result in either short- or long-term violation of Federal, tribal, or state agency numerical water quality standards or water quality objectives.

Adverse impact on surface waters would be considered significant and would require additional mitigation if project construction or operation would:

- result in either short- or long-term violation of Federal, tribal, or state agency numerical water quality standards or water quality objectives;
- alter channel bed armoring so it results in short- or long-term erosion;
- cause the resuspension of contaminated bottom sediments that would degrade the quality of water downstream;
- result in sedimentation that adversely affects the operation of irrigation water control structures, gates, or valves or the quality of municipal water supply reservoirs; or
- reduce stream flow quantity where such a flow change would significantly damage either beneficial uses or aquatic life.

4.3.1 Groundwater

Large-scale aquifer systems formed in consolidated and unconsolidated sedimentary strata, unconsolidated basin-fill deposits, carbonate rock, and non-carbonate consolidated rocks underlie the project area. Water from these aquifers is generally suitable for most uses, except in natural discharge, geothermal areas, or areas impacted by industrial, mining, and agricultural activities. Two major aquifer systems underlie the Kern River 2003 Expansion Project facilities: the Upper Colorado River Basin Aquifer system in Wyoming and eastern Utah, and the Basin and Range Aquifer system in western Utah, Nevada, and southeastern California. Locally, thin alluvial aquifers would also be crossed. Although groundwater is not typically withdrawn from these thin alluvial aquifers, they are important to the quality of surface waters and wetlands.

The Wasatch-Fort Union Aquifer, within the Upper Colorado River Basin Aquifer system, underlies the project area primarily in Wyoming and parts of northern Utah. The principal water-yielding units are sandstones interbedded with shale, mudstone, and coal beds. The overlying Green River Formation forms an effective confining unit in most places. Depth to water ranges between 500 and 1,000 feet bgs. Water wells in the aquifer commonly reach 900 feet bgs. The principal uses of groundwater from this aquifer are for agriculture, mining (including oil and gas production), industry, thermoelectric power use, and public supply.

The Basin and Range Aquifer system comprises three principal aquifer types: volcanic-rock aquifers, which are primarily tuff, rhyolite, or basalt of Tertiary age; carbonate-rock aquifers, which are primarily limestones and dolomites of Mesozoic and Paleozoic age; and basin-fill aquifers, which are primarily unconsolidated sand and gravel of Quaternary and Tertiary age. One, two, or all three aquifer types may underlie the pipeline route in a particular area. Where they occur together, they may constitute three separate sources of water or may be hydraulically connected to form a single source.

The basin-fill aquifers are the most commonly used aquifers in the Basin and Range Aquifer system. These aquifers exist in thick deposits of basin-fill consisting primarily of unconsolidated to moderately consolidated gravel, sand, silt, and clay, bounded by mountain ranges of relatively impermeable bedrock. The thickness of the basin-fill deposits is not well known but can range from 0 feet at basin margins to greater than 10,000 feet, with an average thickness of several thousand feet. Recharge of these aquifers is primarily derived from precipitation in the mountains and surrounding basins. Depth to groundwater can vary from several feet to 30 feet bgs in valleys, to more than 30 feet bgs in the mountain regions (USGS, 1998a). The primary uses of groundwater from these aquifers are for irrigation and public supply.

No EPA-designated sole-source aquifers would be crossed by the proposed pipeline route or aboveground facilities. No designated wellhead protection areas would be crossed by the pipeline route in Wyoming, Nevada, or California. In Utah, the Drinking Water Source Protection Rule (R309-600) governs the protection of groundwater sources of drinking water through source protection areas established by the public water supplier. Based on information from the Utah Division of Drinking Water, nine groundwater source protection areas would be crossed by the pipeline route in Utah. The locations of these areas are provided in table 4.3.1-1 (below).

TABLE 4.3.1-1

Groundwater Source Protection Areas Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Protection Area or System Name	System Type a/	Population Served
UTAH				
Coyote Creek Loop 1	87.6-89.1	Coalville City Water System	CS, PS	1,365
Salt Lake Loop	139.0-139.9 140.5-140.6 142.3-142.9	Kearns Improvement District	CS, PS	42,000
	135.5-138.0	Magna Water Co & Improvement District	CS, PS	31,000
	141.6-142.2	Taylorsville-Bennion	CS, PS	49,500
	149.5-152.5	Riverton City Water System	CS, PS	22,000
	155.9-159.3	Camp Williams	NT, NC	250
	167.8-168.5	Eagle Mountain Town	CS, PS	1,600
	188.3-189.3	Elberta	CS, PO	141
Fillmore Loop	395.7-397.1	Dixie Deer Special Services District	CS, PS	116

a/ CS = Community System; PS = Political Subdivision; PO = Privately Owned; NT = Non-Transient (systems that serve the same people but not year round); NC=Non-Community.

Utah's Drinking Water Source Protection Rule requires that a program be established by the public water supplier to manage potential contamination sources that may want to locate within source water protection zones sometime in the future. This management program must be consistent with the provisions of the Rule to the extent allowed under the authority and jurisdiction of the public water supplier. Potential

contamination sources that can control their contamination would be allowed to locate within protection areas and those that cannot would not be permitted. A natural gas pipeline would not be considered a new potential contamination source.

4.3.1.1 General Impact and Mitigation

Construction of the pipeline and aboveground facilities could affect groundwater in several ways. Clearing, grading, trenching, and soil stockpiling activities could temporarily alter overland flow and groundwater recharge patterns. Near-surface soil compaction caused by heavy construction equipment/vehicles could reduce the soil's ability to absorb water, which could increase surface runoff and the potential for ponding. The duration and magnitude of these effects would be temporary and minor (see section 4.2.3.1). Construction in any one area would be completed in a matter of weeks. In addition, implementation of KRGT's mitigation measures identified in section 4.2.3.1 would reduce these impacts on groundwater to less than significant levels.

Trenching and trench dewatering could cause temporary fluctuations in the elevation of the water table. Trench dewatering would be conducted only in limited areas (primarily areas with a high water table), and the duration of these operations would be short, typically several days or less. To further minimize impacts, KRGT would discharge water from the trench into well-vegetated upland areas or properly constructed dewatering structures or filter bags, which would allow the water to infiltrate back into the soil and return to the underlying aquifer. Trench dewatering would be conducted in compliance with applicable permits (see table 1.6-1 (page 1-21)). As a result, impacts on groundwater associated with trench dewatering would be less than significant.

The alteration of the natural soil strata by trenching and other earthwork could eliminate some existing groundwater pathways or result in new migration pathways for groundwater, particularly in wetland areas. Following installation of the pipeline, KRGT would backfill the trench with previously excavated materials, restoring confining soils breached during construction. KRGT would place trench breakers (sand bags installed around the pipe) in the trench, on slopes, and at the base of slopes adjacent to wetlands and waterbodies as necessary to prevent groundwater migration along the pipeline/trench. Upon completion of construction, KRGT would restore surface contours to ensure that the original overland flow and recharge patterns are reestablished. KRGT's implementation of these measures would reduce impacts on groundwater to less than significant levels.

Accidental spills or leaks of hazardous materials associated with equipment failures, the refueling or maintenance of vehicles, or the storage of fuel, oil, and other fluids during construction pose the greatest risk to groundwater resources. Spills or leaks of hazardous liquids could contaminate groundwater and affect aquifers. If not cleaned up, contaminated soils could continue to leach and add pollutants to the groundwater long after a spill has occurred. Impacts associated with spills or leaks of hazardous liquids could be avoided or minimized by restricting the location of refueling and storage facilities and by requiring cleanup in the event of a spill or leak.

KRGT has prepared a Spill Plan (see appendix G) to address preventive and mitigative measures that would be used to minimize the potential impact of a hazardous spill during construction of the project facilities. Some pertinent measures in KRGT's Spill Plan include:

- training of contractor personnel on the contents and requirements of the Spill Plan;
- a requirement for routine inspections and maintenance of equipment to prevent accidental spills or leaks;

- specifications for the storage, proper labeling, and secondary containment of oil and other hazardous liquids in containers;
- a requirement for daily inspection of containers for leaks and deterioration;
- a requirement to replace leaky or deteriorated containers immediately after an inadequate condition is detected;
- a requirement that vehicle-mounted tanks be equipped with flame/spark arrestors or vents to prevent self ignition;
- specifications that prevent or restrict the transfer of liquids or the refueling of equipment within 100 feet of waterbodies and wetlands, 200 feet of water supply wells, and 400 feet of municipal or community wells or protected wellhead or watershed areas;
- a requirement that service vehicles used to transport lubricants and fuel be equipped with emergency spill response kits, chemical response kits, and other equipment such as shovels, brooms, polyethylene sheeting, and fire protection equipment;
- notification, response, and cleanup procedures in the event of a spill;
- the names and telephone numbers of state and local officials to be contacted in the event of a spill; and
- state reporting requirements (*i.e.*, reportable quantity).

KRGT's Spill Plan adequately addresses the storage and transfer of hazardous liquids and the response to be taken in the event of a spill. The measures and procedures contained in KRGT's Spill Plan would reduce the potential impacts on groundwater associated with a hazardous spill to less than significant levels.

4.3.1.2 Water Supply Wells or Springs

A total of 247 water supply wells or springs have been identified as potentially occurring within 200 feet of the construction right-of-way (see table L-1 in appendix L (pages L-1 through L-5)). One hundred seventy-two of these wells and springs were identified using records that identify locations by township, section, and range. Because these data do not allow determination of the exact milepost and distance from the pipeline, many of the 172 wells or springs are likely to be more than 200 feet from the construction right-of-way. KRGT would conduct final identification and confirmation of groundwater resources through additional field surveys and contacts with local landowners within the project corridor before construction. These surveys would also verify water wells within groundwater source protection areas crossed by the pipeline route.

As many as 79 of the 247 water supply wells or springs identified as potentially occurring within 200 feet of the construction right-of-way are in locations where blasting for pipeline placement may be necessary. Although adverse impacts on groundwater resources are not anticipated, blasting near water supply wells or springs could cause temporary damage or changes in water levels and turbidity. Similar impacts may occur for water wells near other construction activities such as trenching and dewatering.

To determine whether pipeline construction activities have affected groundwater quality or yield, KRGT would implement its Groundwater Monitoring Plan (see appendix M). With landowner permission, wells and springs within 150 feet of the construction right-of-way would be sampled before construction to obtain water quality and yield data for each sampling point. Any isolated springs that sustain a riparian community and/or provide a wildlife benefit would be delineated using the current U.S. Army Corps of Engineers (COE) methodology. Sampling of water wells or springs outside the 150-foot monitoring area would be done at landowner request.

If it is determined that blasting or other construction activities have diminished a water supply, KRGT would arrange for a temporary water supply through a local supplier and make the necessary repairs to the affected water well, or install another comparable well. KRGT would obtain the applicable state and local permits before repairing or replacing any water wells and for any temporary domestic water supplies. Specific mitigation measures would be coordinated with the landowner or land management agency in order to meet the landowner's specific needs. KRGT would conduct biological monitoring at isolated springs to determine any adverse impact on the riparian community or diminishment of its value to wildlife. Post-construction well monitoring would be conducted as requested by the well owner or for disputed situations.

Within 30 days of placing the facilities in-service, KRGT would file a report with the FERC and the CSLC (in California) describing any complaints received from landowners about water quality or yield, the results of the biological monitoring at any isolated springs, and the remedial action taken to address concerns.

KRGT's proposed mitigation would reduce potential impacts on water supply wells and springs to less than significant levels.

4.3.1.3 Shallow Groundwater

The proposed pipeline route would cross several areas, primarily in Utah, where groundwater is within 10 feet of the ground surface. These areas are listed in table 4.3.1-2 (below).

TABLE 4.3.1-2

Locations Where Groundwater is Within 10 Feet of the Ground Surface

State/Facility	Beginning Milepost	Ending Milepost	Approximate Crossing Length (miles)
WYOMING			
Muddy Creek Loop	43.15	43.22	0.07
	47.51	47.55	0.04
	49.34	49.38	0.04
	52.49	52.50	0.01
	54.67	54.68	0.01
	57.18	57.19	0.01
UTAH			
Coyote Creek Loop 1	81.16	81.28	0.12
	81.30	81.35	0.05
	87.03	87.47	0.44
	87.52	87.57	0.05
Coyote Creek Loop 2	131.26	131.32	0.06
	131.48	131.55	0.07
Salt Lake Loop	136.80	136.82	0.02
Elberta Loop	224.32	224.37	0.05
	262.44	262.45	0.01
	274.39	274.48	0.09

Shallow groundwater could affect the buoyancy of the pipe (*i.e.*, the pipeline would be more likely to float) and increase the potential for corrosion. Saturated soil conditions would also increase the difficulty of trench excavation and reduce the stability of the trench wall during pipeline placement and subsequent inspection of the pipe before backfilling.

In areas where the positive buoyancy of the pipeline may exceed the combined uplift resistance of backfill soil and soil adjacent to the ditch, KRGT would install weights, use concrete-coated pipe, or anchor the pipeline. In addition to the use of externally coated pipe, KRGT would install cathodic protection where necessary to guard against corrosion. KRGT's implementation of these measures would reduce impacts associated with shallow groundwater to less than significant levels.

4.3.1.4 Groundwater and Soil Contamination

Seven potential sources of groundwater and/or soil contamination have been identified near the proposed pipeline facilities using Federal and state databases. The locations and distances of these sites from the pipeline route are listed in table 4.3.1-3 (below). Three of these sites are in Utah, two are in Nevada, and two are in California. No sites were identified in Wyoming. The closest of the seven sites to the proposed pipeline is about 0.08 mile from the pipeline route. The remaining six sites are greater than 0.17 mile from the pipeline route.

TABLE 4.3.1-3

Hazardous Waste Sites and Landfills Identified Near the Kern River 2003 Expansion Project Pipeline Route

State/Facility	County	Approximate Milepost	Site Identification	Approximate Distance from Pipeline Route (miles)
UTAH				
Salt Lake Loop	Salt Lake	135.3	Salt Lake Valley Landfill	0.08
Salt Lake Loop	Salt Lake	147.0	Kennecott (south zone)	0.25
Fillmore Loop	Beaver	326.0	Beaver County Special Services #5 Landfill	0.17
NEVADA				
Veyo Loop	Clark	477.5	Reid Gardner Station	0.25
Dry Lake 1 Loop	Clark	515.0	Nellis Air Force Base Landfill LF-34	0.19
CALIFORNIA				
Daggett Loop	San Bernardino	4.0-7.0	Barstow Marine Corps Logistics Base	1.19
Daggett Loop	Kern	49.0	Boron Sanitary Landfill/Burn Dump	0.20

Sources: CERCLIS Database, EPA Information Management Center, Office of Emergency and Remedial Response; Nevada Division of Environmental Protection Corrective Actions Database (www.ndep.state.nv.us); SWIS Database (www.ciwmb.ca.gov); Utah Landfill Inventory, Utah Department of Environmental Quality, Division of Solid and Hazardous Waste.

Utah

The Salt Lake Valley Landfill is an operating landfill that accepts municipal solid waste from Salt Lake County. It is the closest site to the pipeline route and is located about 0.08 mile from MP 135.3 of the Salt Lake Loop. Groundwater monitoring at the Salt Lake Valley Landfill indicates that the composite liner system and other environmental protection measures used at the landfill are achieving their design purpose of protecting the underlying groundwater (Salt Lake Valley Solid Waste Management Facility, 1999).

The Kennecott National Priority List site is located about 0.25 mile from MP 147.0 of the Salt Lake Loop near Copperton, Utah. This Federal Superfund site has been undergoing remediation consisting of soil removal. The Utah Department of Environmental Quality (UDEQ) confirmed that soil remediation has been completed within 0.25 mile of the proposed Salt Lake Loop (Greer, 2001). Because potentially contaminated groundwater occurs at depths ranging from 75 to 650 feet bgs, the pipeline would be above the contaminated groundwater plume.

The Beaver County Special Services #5 Landfill is an operating landfill located about 0.17 mile from MP 326.0 of the Fillmore Loop. The landfill covers approximately 100 acres (of which 40 acres are fenced) and accepts bulk waste from a local hog farm and surrounding communities, including Minersville and Milford, Utah (Grey, 2001). Although the pipeline route does not cross the operating portion of the landfill, about 60 acres of historic landfill are located outside of the fenced area. The precise location of the historic landfill relative to the pipeline route has not been determined. Before construction, KRGT would consult with the landfill owner/operator to determine the extent of the historic landfill. If land filled materials are encountered during subsurface excavation, KRGT would dispose of the material in a permitted landfill and replace it with engineered fill.

Nevada

The Reid Gardner Station in Moapa is located approximately 0.25 mile north of MP 477.5 of the Veyo Loop within the Muddy River floodplain. Nevada Power, in conjunction with the Nevada Division of Environmental Protection (NDEP), has conducted groundwater investigations near the pipeline route for elevated total dissolved solids and petroleum hydrocarbons to determine if soluble salts or hydrocarbons have migrated off the Reid Gardner Station property. This monitoring has found that groundwater contamination near the pipeline route is limited to soluble salts. No petroleum hydrocarbons were detected outside the Reid Gardner Station property (Kleinfielder, 2000). Within the Muddy River floodplain, groundwater is located approximately 8 to 15 feet bgs and at depths of approximately 100 feet bgs elsewhere in the vicinity of the Reid Gardner Station (Croft, 2001). Shallow groundwater underlying the Muddy River floodplain may contain elevated concentrations of inorganic salts. These contaminants would not present a health concern to construction workers if encountered in shallow groundwater during construction and trench dewatering; however, discharging trench water during dewatering activities associated with construction across the Muddy River and adjacent floodplain may require an NPDES permit (Croft, 2001).

At MP 515.0, the Dry Lake Loop 1 would cross within 0.19 mile south of Landfill LF-34, located on Nellis AFB. Landfill LF-34 was a disposal site for wastes generated from Nellis AFB during the latter half of the 1960s. The landfill has been inactive for many years and has been graded and capped with a native soil cover. Groundwater monitoring and current data indicate that groundwater does not contain contaminants above regulatory action levels (Black & Veatch, 2000). Furthermore, the underlying groundwater occurs at a depth of 225 to 250 feet bgs. Although it is not expected that the pipeline would cross the capped landfill or come into contact with contaminated groundwater, KRGT would coordinate with Nellis AFB to confirm that the cap is not disturbed during construction activities.

California

Along the Daggett Loop in California, a Comprehensive Environmental Response, Compensation, and Liability Act Area of Concern (CAOC) 7 site was identified at the Barstow Marine Corps Logistics Base 1.19 miles north of the route between MPs 4.0 and 7.0. Contaminants of concern at the CAOC 7 site include trichloroethene and its byproducts in soil and groundwater. Groundwater monitoring and site remediation is ongoing. Groundwater generally occurs at 180 feet bgs (Plotkin, 2001).

The Boron Sanitary Landfill is currently operating about 0.2 mile south of the Daggett Loop near MP 49.0. The landfill is located in the area of the former Boron Burn Dump where trash was burned between about 1955 and 1973. It is approximately 6 acres in size and located 0.5 mile south of Twenty Mule Team Road.

Summary

Although it is possible contaminated soils and/or groundwater leaching from the seven sites discussed above could be encountered, it is unlikely based on the distance of the pipeline route from the sites and the depth of the underlying groundwater associated with the individual sites. However, if contaminated groundwater and/or sediments (based on evidence of land-filled debris, subsoil discoloration, or odor) are encountered along the pipeline route or at aboveground facility sites during construction, KRGT would implement the following steps:

- halt all construction work in the immediate vicinity of areas where hazardous or unknown wastes are encountered;
- evacuate all construction, oversight, and observing personnel to a road-accessible, up-wind location until the types and levels of potential contamination can be verified;
- notify KRGT's Chief Inspector, EI, and land management agency Authorized Officer. Following consultation with onsite personnel and the land management agency hazardous materials coordinator, the EI, in conjunction with the agencies' compliance monitor, would be responsible for implementing follow-up actions, including mobilizing emergency response personnel and coordinating with the EPA, or state or local agencies;
- notify and mobilize an emergency response contractor if an immediate or imminent threat to human health or the environment exists;
- if the land management agency Authorized Officer or his/her designee has determined that an immediate or imminent threat to human health or the environment does not exist, or has been abated, KRGT or a qualified subcontractor would collect representative samples of the waste and surrounding materials for laboratory analysis; and
- remove and properly dispose of contaminated materials, if feasible. If the extent of contamination is too widespread for economical removal, or if disposal options are technically infeasible or cost-prohibitive, backfilling of that portion of the trench would be suspended until appropriate mitigation options are approved by the FERC and the CSLC (in California).

Implementation of KRGT's proposed mitigation measures would reduce the potential effects associated with contaminated groundwater to less than significant levels.

4.3.2 Surface Water

4.3.2.1 Pipeline Facilities

The Kern River 2003 Expansion Project would cross four major drainage regions or hydrologic units as defined by the USGS. These include the Upper Colorado, Great Basin, Lower Colorado, and California hydrologic units. These major drainages are subsequently divided into smaller units or subbasins. A subbasin

includes the area drained by a river system, a reach of a river and its tributaries in that reach, or a closed basin(s). Table 4.3.2-1 (below) identifies the eight subbasins crossed by the pipeline route by state, facility, and approximate milepost range.

TABLE 4.3.2-1

Drainage Basins Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Subbasin	Approximate Milepost Range a/
WYOMING		
Opal Loop Muddy Creek Loop	Upper Green	0.0-40.0
Muddy Creek Loop	Upper Bear	40.0-60.1
Anschutz Lateral Coyote Creek Loop 1	Weber	60.1-63.0
UTAH		
Coyote Creek Loop 1	Weber	63.0 - 96.4
Coyote Creek Loop 2 Salt Lake Loop Elberta Loop	Jordan	124.5-203.0
Elberta Loop Fillmore Loop	Escalante Desert-Sevier Lake	203.0-293.0
Fillmore Loop Veyo Loop	Lower Colorado-Lake Mead	293.0-432.8
NEVADA		
Veyo Loop Dry Lake Loop 1 Dry Lake Loop 2	Lower Colorado-Lake Mead	432.8-517.5 543.6-557.0
Dry Lake Loop 2 Goodsprings Loop	Central Nevada Desert Basins	557.0-579.4
CALIFORNIA		
Goodsprings Loop	Central Nevada Desert Basins	579.4-592.0
Goodsprings Loop Daggett Loop	Northern Mojave	592.0-681.9 0.0-82.4

a/ The areas between MPs 96.4 and 124.5 and MPs 517.5 and 543.6 would not be looped by the proposed project.

Within these subbasins, the pipeline route crosses 32 perennial waterbodies and approximately 312 intermittent waterbodies (including ephemeral streams, drains, and washes). These waterbodies were identified by examining USGS topographic maps, reviewing as-built documentation from the existing KRGT and KRGT/Mojave Common System facilities, and through aerial and field reconnaissance conducted in the spring and summer of 2001. Table 4.3.2-2 (page 4-48) lists the 32 perennial waterbodies as well as the 7 intermittent waterbodies crossed by the pipeline facilities that have specified agency concerns, beneficial uses, impaired water quality, and/or are likely to support fisheries, as well as crossing width, fishery classification, state water quality classification, and KRGT's proposed crossing method. A listing of the intermittent waterbodies that do not support fisheries crossed by the pipeline route is provided in appendix N. None of the rivers, canals, or washes crossed by the pipeline route are listed on the Nationwide Rivers Inventory.

TABLE 4.3.2-2

Perennial and Selected Intermittent Waterbodies Crossed by the Kern River 2003 Expansion Project Pipeline Route a/

State/Facility	Milepost	Waterbody Name	Type b/	Crossing Width (feet) c/	Fishery Classification	State Water Quality Classification	Proposed Primary and Secondary Crossing Method d/
WYOMING							
Opal Loop	0.7	Hams Fork River	I e/	11	Coldwater	Impaired f/	OC; F if flowing
Muddy Creek Loop	13.7	Little Muddy Creek	P	11-13	Nongame	Class 3	OC
	43.2	Duncomb Hollow	P	<20	None	None	OC
	47.5	Bear River	P	76	Coldwater	Class 2	HDD
	52.6	Coyote Creek	P	<20	Coldwater	Class 2	OC; F if flowing
	54.6	Clifton Hollow	P	9	None	None	OC
	57.2	Sage Creek Draw	P	15	Nongame	Class 3	OC
	59.6	Yellow Creek	P	40	Coldwater	Class 2 above Utah state line	OC
UTAH							
Coyote Creek Loop 1	63.3	Basin Creek	P	<20	None	None	OC
	66.8	Chalk Creek	P	25-50	Coldwater	2B, 3A, 4; EPA Water Quality Impaired	F or DP
	69.6	East Fork Chalk Creek	P	64	Coldwater	2B, 3A, 4	F or DP
	71.1	Unnamed Creek	P	28	Coldwater	2B, 3A, 4	F or DP
	81.1	South Fork Chalk Creek	P	64	Game fish spawning area	2B, 3A, 4; EPA Water Quality Impaired	F or DP
	87.4	East Branch Weber River	P	46	Coldwater	1C, 2B, 3A, 4	HDD g/
	87.6	Weber River	P	73	Coldwater	1C, 2B, 3A, 4	HDD
	90.1	Corruth Canyon	P	20	None	None	OC
Coyote Creek Loop 2	129.3	North Point Consolidated Canal	P	54	None	3E	OC
	129.4	Unnamed Canal	P	28	None	3E	OC
	129.8	Surplus Canal	P	133	Warmwater	2B, 3B, 3D, 4	OC
	130.7	Goggin Canal	P	50	None	3E	OC
	130.7	Unnamed Canal	P	15	None	3E	OC
	131.2	Unnamed Canal	P	15	None	3E	OC
	132.1	Brighton Canal	P	15	None	3E	OC
Salt Lake Loop	132.3	Ridgeland Canal	P	20	None	3E	OC
	136.3	Ritter Canal	P	25	None	3E	OC
	147.0	Bingham Creek	P	20	None	2B, 3D, 4; EPA Water Quality Impaired	Bore; OC
	150.7	Provo Reservoir Canal	P	<20	None	4	OC
	157.4	Beef Hollow	P	<20	None	None	OC
	162.8	Tickville Gulch	P	<50	None	2B, 3D, 4	OC
Elberta Loop	201.9	Garbett Gulch	P	80	None	None	OC

TABLE 4.3.2-2 (cont'd)

Perennial and Selected Intermittent Waterbodies Crossed by the Kern River 2003 Expansion Project Pipeline Route a/

State/Facility	Milepost	Waterbody Name	Type b/	Crossing Width (feet) c/	Fishery Classification	State Water Quality Classification	Proposed Primary and Secondary Crossing Method d/
	224.4	Sevier River	P	143	Coldwater	2B, 3A, 3C, 4; EPA Water Quality Impaired	OC
Fillmore Loop	326.1	Beaver River	I	46	Nongame	2B, 3C, 4	OC
	394.1	Hiway Spring	I	<20	None	None	OC
	400.3	Magotsu Creek	P	30	Game fish spawning area	None	OC; F if flowing
	403.3	Moody Wash	I	103	Game fish spawning area	None	OC; F if flowing
Veyo Loop	431.0	Beaver Dam Wash	I	h/	Coldwater	2B, 3A, 4	OC
NEVADA							
Veyo Loop	474.2	Meadow Valley Wash	I	h/	None	State classified beneficial uses	OC
	477.1	Muddy River	P	37	Game fish spawning area	Class C. State classified beneficial uses. EPA Water Quality Impaired	F
CALIFORNIA							
Goodsprings/ Daggett Loops	676.7/ 18.0	Mojave River	I	>100 h/	Warm and Coldwater	State classified beneficial uses. EPA Water Quality Impaired	OC

a/ Includes intermittent waterbodies with specified agency concerns, beneficial uses, impaired water quality, and/or are likely to contain fisheries.

b/ P = Perennial
I = Intermittent

c/ Water's edge to water's edge for perennial waterbodies, bank to bank for intermittent waterbodies.

d/ HDD = horizontal directional drill; F = flume; DP = dam and pump; and OC = open cut.

e/ Flow at the reach from Kemmerer to the Blacks Fork confluence (which includes the pipeline crossing) is reportedly intermittent due to irrigation withdrawals (Wyoming Department of Environmental Quality (WDEQ), 1998).

f/ The Hams Fork River is listed as impaired because water quality monitoring has measured high pH readings at Diamondville (above the Opal Meter Station). The cause of the high pH has not been determined by the State of Wyoming. Measurements of pH at the reach of the Hams Fork River at the Opal Meter Station are not listed by the WDEQ (2000a). It is possible that the high pH conditions at Diamondville are localized and do not impair fisheries use near the Opal Meter Station.

g/ Included in the Weber River HDD.

h/ Broad washes including multiple braided intermittent drainages.

Surface waters are classified according to the most beneficial existing and potential future uses of the waterbody and to provide protection for a variety of uses. Water use classifications for Wyoming, Utah, Nevada, and California are discussed below. Water quality along the pipeline route is periodically affected by high intensity rainfalls. These rainfall events increase erosion and contribute to the highly turbid water flows observed in streams and rivers in the region. They also cause flash floods, which can move large loads of sediment, gravel, and larger debris over long distances via drainage canals and desert washes.

Wyoming

The State of Wyoming groups surface waters according to six uses and four classes. Water uses include agriculture, protection and propagation of fish and wildlife, industry, human consumption, recreation, and scenic value. The surface water classes include class 1, waters with the highest natural water quality and/or other qualities with extraordinary value to the people of Wyoming; class 2, coldwater game fishery; class 3, non-game fishery; and class 4, waters without the natural water quality to support fish.

The project would require crossing 7 perennial and 23 intermittent waterbodies in Wyoming. None of these are greater than 100 feet wide. Four waterbodies are classified by the state as coldwater fisheries: the Hams Fork River (MP 0.7), which is an intermittent waterbody; the Bear River (MP 47.5); Coyote Creek (MP 52.6); and Yellow Creek (MP 59.6). The Hams Fork River, Bear River, and Yellow Creek also support fish species listed by the Wyoming Game and Fish Department (WGFD) as species of concern (see section 4.7). Additionally, the Bear River and Yellow Creek contain populations of Bonneville cutthroat trout, a species of concern to the FWS. The Hams Fork River is listed as an EPA 305(b) Water Quality Impaired waterbody due to high pH levels (Wyoming Department of Environmental Quality, 2000a). These high pH levels were recorded upstream of KRGT's proposed crossing location.

No waterbodies crossed by the Wyoming portion of the pipeline route receive effluent from municipal or industrial wastewater treatment facilities within a 3-mile radius of the proposed crossing locations (EPA, 2001a). Additionally, no potable water intake sources are located within 3 miles downstream of any of the proposed waterbody crossing locations in Wyoming.

Utah

The State of Utah groups surface waters according to five classifications. Utah's water quality classifications apply to all waters of the state and are designated to conserve the waters of the state; to protect, maintain, and improve the quality for public water supplies; for the propagation of wildlife, fish, and aquatic life; and for domestic, agricultural, industrial, recreational, and other legitimate beneficial uses. Water quality classifications are class 1, domestic water use; class 2, recreational use and aesthetics; class 3, use by aquatic wildlife; class 4, agricultural use; and class 5, the Great Salt Lake (UDEQ, 2000a).

The project would require crossing 24 perennial and 231 intermittent waterbodies in Utah. Two of the perennial waterbodies, the Surplus Canal (MP 129.8) and the Sevier River (MP 224.4), and 28 of the intermittent waterbodies are greater than 100 feet wide at the proposed crossing location. Six perennial waterbodies are classified as coldwater fisheries: Chalk Creek (MP 66.8), East Fork Chalk Creek (MP 69.6), an unnamed creek (MP 71.1), the East Branch Weber River (MP 87.4), the Weber River (MP 87.6), and the Sevier River (MP 224.4) (UDEQ, 2001). One intermittent waterbody, Beaver Dam Wash (MP 431.0), is classified as a coldwater fishery (UDEQ, 2001).

Three waterbodies, Magotsu Creek (MP 400.3), Moody Wash (MP 403.3), and Beaver Dam Wash (MP 431.0), support populations of the Virgin River spinedace, a Utah Division of Wildlife Resources (UDWR) species of state special concern (see section 4.7). In addition, Chalk Creek (MP 66.8) and its

tributaries, East Fork Chalk Creek (MP 69.6), an unnamed creek (MP 71.1), and South Fork Chalk Creek (MP 81.1), are known to contain populations of Bonneville cutthroat trout, which is a state-listed conservation species and has been petitioned for listing under the Federal Endangered Species Act (ESA) (WGFD, 2001) (see section 4.7).

Four waterbodies crossed by the pipeline route in Utah are listed as impaired. Chalk Creek (MP 66.8) and South Fork Chalk Creek (MP 81.1) have been identified by the state as impaired based on sediment, phosphorus, stream habitat loss, and riparian habitat loss (UDEQ, 2000a). Bingham Creek (MP 147.0) is listed as impaired due to elevated levels of copper, total dissolved solids, and zinc loads from mine tailings. The Sevier River (MP 224.4) is listed as impaired due to habitat alterations, sediment, total dissolved solids, and total phosphorus (UDEQ, 2000b).

The Surplus Canal (MP 129.8) is the only waterbody crossed by the pipeline route in Utah that receives effluent from municipal or industrial wastewater treatment facilities within a 3-mile radius of the proposed pipeline crossings (EPA, 2001a). The Surplus Canal receives effluent from the Salt Lake International Airport. No potable water intake sources are located within 3 miles downstream of any of the proposed waterbody crossing locations in Utah (EPA, 2001b).

Nevada

The State of Nevada has established four classes of water (A through D), with class A being the highest quality. Nevada's water quality standards protect both existing and designated beneficial water uses. Criteria for various pollutants have been designated for each class of water to protect the beneficial uses of waterbodies, which include recreation, aquatic life, fisheries, irrigation, and drinking water.

The project would require crossing 1 perennial and 26 intermittent waterbodies in Nevada. Five of the intermittent waterbodies are greater than 100 feet wide at the proposed crossing location. The Muddy River (MP 477.1) contains potential habitat for special status species (see section 4.7). Two waterbodies, Meadow Valley Wash (MP 474.2) and the Muddy River (MP 477.1), are protected by the NDEP for irrigation, agriculture, non-contact recreation, industrial supply, and propagation of wildlife/aquatic life (NDEP, 2001).

The Muddy River (MP 477.1) is listed as impaired due to levels of total phosphorus and metals. Additionally, shallow groundwater underlying the Muddy River floodplain may contain elevated concentrations of inorganic salts.

No waterbodies crossed by the Nevada portion of the project receive effluent from municipal or industrial water treatment facilities within a 3-mile radius of the proposed crossings (EPA, 2001a). Additionally, no potable water intake sources are located within 3 miles downstream of any of the proposed waterbody crossing locations in Nevada (EPA, 2001b).

California

The California State Water Resources Control Board has developed 23 beneficial uses for surface waters in California. Tributaries that are not listed specifically as having beneficial uses are considered to support the same beneficial uses as those of surface waters to which they are a tributary, and are protected for these uses. Beneficial uses include agricultural supply, groundwater recharge, municipal and domestic supply, contact water recreation (*e.g.*, swimming) and non-contact water recreation (*e.g.*, boating), warm freshwater habitat, wildlife habitat, and water quality enhancement.

No perennial waterbodies would be crossed in California. The project would require 32 [5/] intermittent waterbody crossings. One intermittent waterbody, the Mojave River (MP 676.7 along the Goodsprings Loop and MP 18.0 along the Daggett Loop), would be crossed twice. The Mojave River measures greater than 100 feet between its recognizable riverbanks; however at the proposed crossing locations, the Mojave River is a dry, sandy wash without riparian vegetation. In those portions of the Mojave River that have surface flow, the river is classified as having several beneficial uses including municipal/domestic supply, agriculture, groundwater recharge, water recreation, commercial and sport fishing, warm and cold freshwater habitat, and wildlife habitat (Lahontan Regional Water Quality Control Board, 1994). The Mojave River is also listed as an impaired waterbody due to organic loads (NDEP, 1998a; CEPA, 1999).

No waterbodies crossed by the California portion of the project receive effluent from municipal or industrial wastewater treatment facilities within a 3-mile radius of the proposed crossings (EPA, 2001a). Additionally, no potable water intake sources are located within 3 miles downstream of any of the proposed waterbody crossing locations in California (EPA, 2001b).

4.3.2.2 Aboveground Facilities

There are no waterbodies on the proposed Coyote Creek or Dry Lake Compressor Station sites. Existing surface water features at the proposed Salt Lake Compressor Station site include a canal (Brighton Canal) that once crossed the site from the southeast to the northwest but has been rerouted along the south and west boundary of the proposed facility location. This canal would not be affected by the actual compressor station yard. KRGT would direct drainage from the site to the west and north. The powerlines associated with the new compressor stations would span any waterbodies crossed by the right-of-way, resulting in no impact on surface waters.

Because none of the three compressor stations or powerlines would be located within 100-year floodzones as identified by the Federal Emergency Management Agency flood hazard maps, flood proofing would not be required for the facilities associated with the project. KRGT would obtain necessary permits for construction of project facilities and comply with Federal, state, and local regulations.

4.3.2.3 General Impact

Pipeline construction could affect surface waters in several ways. Clearing and grading of streambanks, in-stream blasting (if required), in-stream trenching, trench dewatering, and backfilling could affect waterbodies through modification of aquatic habitat, increased sedimentation, increased turbidity, decreased dissolved oxygen concentrations, stream warming, releases of chemical and nutrient pollutants from sediments, or introduction of chemical contamination such as fuel and lubricants.

The greatest potential impact on surface waters would result from suspension of sediments caused by in-stream construction or by erosion of cleared streambanks and rights-of-way. The extent of the impact would depend on sediment loads, stream velocity, turbidity, bank composition, and sediment particle size. These factors would determine the density and downstream extent of sediment mitigation. In-stream construction could cause the dislodging and transport of channel bed sediments and the alteration of stream contours. Changes in the bottom contours can alter stream dynamics and increase downstream erosion or deposition, depending on circumstances. Turbidity resulting from resuspension of sediments from in-stream construction or erosion of cleared right-of-way areas would reduce light penetration and photosynthetic

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5/ This number of intermittent waterbodies crossed in California is greater than what was presented in the text of the draft EIS/EIR (20). The number is taken from appendix N, which lists the intermittent waterbodies crossed by the route that do not support fisheries. Appendix N has a single entry that groups 13 unnamed washes that are found between MPs 24.5 to 29.9 on the Daggett Loop. These 13 wash crossings were only counted as one crossing in the text of the draft EIS/EIR.

oxygen production. In-stream work could also introduce chemical and nutrient pollutants from sediments. Resuspension of deposited organic material and inorganic sediments would cause an increase in biological and chemical use of oxygen, resulting in a decrease of dissolved oxygen concentrations in the affected area. Lower dissolved oxygen concentrations could cause temporary displacement of motile organisms and may kill non-motile organisms within the affected area. However, impacts associated with resuspension of sediments would be temporary (*i.e.*, present during the period of active construction within a waterbody) and would not affect the designated uses of the waterbodies. Therefore, this impact would be less than significant.

Clearing and grading of streambanks would expose large areas of soil to erosional forces and would reduce riparian vegetation along the cleared section of the stream. The use of heavy equipment for construction would cause compaction of near-surface soils, an effect that could result in increased runoff into surface waterbodies. The increased runoff could transport additional sediment into the waterbodies, resulting in increased turbidity levels and sedimentation rates in the receiving waterbody. These impacts on water quality would be temporary and would not affect the designated uses of the waterbodies. Therefore, these impacts would be less than significant.

4.3.2.4 Waterbody Construction and Mitigation Procedures

KRGT would minimize impacts on surface waters by implementing the waterbody construction and restoration measures contained in its WWCM Procedures (see appendix F). The WWCM Procedures are applicable to any stream or river with perceptible flow at the time of crossing and other permanent waterbodies such as ponds and lakes.

Some of the relevant mitigation measures pertaining to waterbody crossings specified in KRGT's WWCM Procedures include:

- locating all extra work areas at least 50 feet away from waterbody boundaries in non-cultivated areas where topographic conditions permit, otherwise extra work areas would be a minimum of 10 feet from the waterbody;
- limiting clearing of vegetation between extra work areas and the edge of the waterbody to preserve riparian vegetation;
- maintaining adequate flow rates throughout construction to protect aquatic life and prevent the interruption of existing downstream uses;
- restricting storage and refueling activities near surface waters;
- restricting spoil placement near surface waters;
- limiting use of equipment operating in the waterbody to that needed to construct the crossing;
- requiring construction across waterbodies to be completed as quickly as possible and during the windows specified in the WWCM Procedures or required by applicable permits;
- developing and submitting to the FERC site-specific construction procedures for each waterbody greater than 100 feet wide at the crossing location (major waterbody);
- requiring temporary erosion and sediment control measures to be installed across the entire width of the construction right-of-way after clearing and before ground disturbance;

- requiring maintenance of temporary erosion and sediment control measures throughout construction until streambanks and adjacent upland areas are stabilized;

- requiring bank stabilization and reestablishment of bed and bank contours and riparian vegetation after construction; and

- limiting post-construction maintenance of vegetated buffer strips adjacent to streams.

KRGT would also obtain waterbody crossing permits from the COE under Section 404 of the Clean Water Act (CWA) and state water quality certifications under Section 401 of the CWA. These and other permits required by individual states for waterbody crossings could include additional mitigation measures. All construction activities at waterbody crossings would be in accordance with Federal, state, and local permit requirements. KRGT's implementation of these mitigation measures would reduce impacts on surface waters to less than significant levels.

Refueling of vehicles and storage of fuel, oil, or other hazardous materials near surface waters creates a potential for contamination if a spill were to occur. Immediate downstream users of the water could experience a degradation in water quality. Acute and chronic toxic effects on aquatic organisms could result from such a spill. As discussed in section 4.3.1.1, KRGT's Spill Plan, developed in accordance with Federal, state, and local regulations, would adequately prevent and mitigate the potential impact of a spill during construction to a less than significant level.

The majority of waterbodies that would be crossed by the pipeline are intermittent washes, creeks, and canals that are expected to be dry at the time of construction (dry washes). These waterbodies do not typically support fisheries, or provide critical aquatic habitat or migratory passage for aquatic organisms. KRGT proposes to cross dry washes using conventional upland construction methods unless other methods are required by the applicable permitting agencies. Impacts on dry washes would be limited to temporary alteration of beds and banks, loss of wildlife habitat, and possibly increased sediment load during initial storm events following construction. Discussions of impact on the vegetation, wildlife, and special status species associated with these washes are included in sections 4.5, 4.6, and 4.7, respectively.

KRGT proposes to avoid construction in intermittent waterbodies during periods of high flow and to monitor weather conditions up to 2 days in advance of waterbody crossings to minimize the potential for construction across intermittent waterbodies to occur during runoff events. If perceptible flow conditions develop during construction, KRGT would:

- remove all equipment from within the streambanks;

- restore the banks to their original shape (as close as possible) to keep the flow within the banks of the stream by utilizing soil, straw bales, silt fence, or other means deemed appropriate by regulatory agencies;

- continually monitor the banks where the crossing was attempted and restore any banks that are eroded by flow; and

- defer construction for hours or days to allow flow to subside before resuming work.

If it becomes apparent that the waterbody may continue flowing for weeks or months, KRGT would reenter the waterbody using the same methods proposed for perennial waterbodies (see section 2.3.2).

KRGT proposes to use the open-cut method for 23 perennial waterbody crossings (see table 4.3.2-2 (page 4-48)). The open-cut method is described in section 2.3.2. Impacts associated with construction using the open-cut method include temporary alteration of beds and banks, temporary loss of wildlife habitat, and increased sediment load during construction. Impacts associated with these open-cut crossings would be less than significant with KRGT's implementation of its WWCM Procedures (see appendix F). Two of the perennial waterbodies that KRGT proposes to cross using the open-cut method, the Surplus Canal (MP 129.8) and the Sevier River (MP 224.4), are major waterbodies (greater than 100 feet wide at the crossing location). These major waterbodies are discussed in section 4.3.2.6.

During restoration of waterbody banks, KRGT would use natural erosion control techniques (*e.g.*, fiber mats, seeding, plantings) wherever feasible. KRGT would minimize the use of riprap or gabions in accordance with its WWCM Procedures and as stipulated in its waterbody crossing permits from the COE and applicable state agencies. KRGT would only use stone riprap or gabions as a restoration measure on steep banks at perennial and intermittent waterbody crossings where erosion cannot be effectively controlled with native materials or a combination of erosion control matting and vegetation.

4.3.2.5 Extra Work Areas

In accordance with its WWCM Procedures, KRGT would locate extra work areas at least 50 feet from waterbody boundaries in non-cultivated areas where topographic conditions permit, otherwise these extra work areas would be a minimum of 10 feet from the waterbody. KRGT requests a project-wide approval to locate temporary extra workspace within 50 feet of the banks of most ephemeral and intermittent waterbodies. KRGT has also identified four site-specific locations where it is requesting approval to locate temporary extra workspace within 50 feet of waterbody banks. KRGT's justification for these requests and the approval status are discussed below.

Project-wide

As discussed in section 4.3.2.1 and as shown in appendix N, KRGT would cross numerous intermittent and ephemeral washes. The vast majority of these features direct surface runoff and do not have a connection to groundwater at any time of the year. They also do not contain water long enough to support fisheries or influence vegetative patterns. KRGT evaluated each of these drainages for evidence of riparian vegetation that would be indicative of the presence of surface or subsurface flow at times other than during brief runoff events. Lewis Canyon Creek (MP 88.8), an unnamed creek (MP 93.3), Ruby Drain (MP 124.9), Low Line Canyon (MP 324.2), and Hamblin Spring Creek (MP 389.3) were identified as having either riparian vegetation, intermittent but perceptible flow, or evidence of recent flow. KRGT would cross these five intermittent waterbodies using the open-cut method in accordance with its WWCM Procedures, including the 50-foot setback for extra work areas.

As described above, most of the intermittent waterbodies listed in appendix N would be crossed using conventional upland construction methods if the waterbodies are dry at the time of crossing. However, because some of these washes have the potential to scour, KRGT would install these crossings with a minimum depth of cover of 5 feet. The additional spoil storage needed to accomplish this would require temporary extra workspace at each crossing. KRGT requests project-wide approval to place these temporary extra workspaces 10 feet from the banks of intermittent washes (except for the five waterbodies listed above) even if they are flowing at the time of construction. This would allow the temporary extra workspaces to be depicted on alignment sheets and staked in advance of construction activities regardless of waterbody flow at the time of the crossing. Because these intermittent waterbodies do not have associated riparian vegetation that would be preserved by a 50-foot setback or contain water long enough to support fisheries or influence vegetative patterns on the banks, the Agency Staffs approve this project-wide request.

Site-specific

KRGT requests approval, in accordance with its WWCM Procedures, to locate temporary extra workspace 10 feet from the banks of the Hams Fork River (MP 0.7), South Fork Chalk Creek (MP 81.1), Lewis Canyon Creek (MP 88.8), and the Sevier River (MP 224.4). KRGT states this is necessary at the north and south banks of the Hams Fork River because the Union Pacific Railroad and a wetland (W12028) are located only about 90 feet from the north bank of the proposed waterbody crossing location. Consequently, the area between the railroad and the waterbody must be used to store the spoil generated by boring the railroad and crossing the river. The existing area between these two features is not large enough to store the anticipated volume of spoil needed to accommodate the additional depth of cover requirements at these crossings and still maintain a 50-foot setback from the waterbody. This temporary extra workspace would also be within 50 feet of wetland W12028 (see section 4.4.4). The availability of work area on the south side of the crossing is limited due to the configuration of the waterbody and the proposed right-of-way (*i.e.*, the right-of-way would parallel the waterbody south of the crossing location). Due to the topographical constraints at the Hams Fork River crossing location, this request is approved.

KRGT requests approval to locate a temporary extra workspace 10 feet from the north bank of South Fork Chalk Creek because available work area on the north side of the crossing is limited by the location of a wetland (W12021). Maintaining a 50-foot setback for the temporary extra workspace would not allow for adequate space to store the spoil associated with the additional depth of cover and the installation of concrete coated pipe needed in this area. Because locating the temporary extra workspace 10 feet from the north bank of South Fork Chalk Creek would not require clearing of riparian vegetation, would avoid additional impacts on wetlands, and would be necessary to complete the waterbody crossing, this request is approved. This temporary extra workspace would also be closer than 50 feet from wetland W12021 (see section 4.4.4).

At Lewis Canyon Creek, KRGT requests approval to locate temporary extra workspace 10 feet from the north bank because available work area on the north side of the creek is limited due to a steep vertical slope and a county road immediately adjacent to the creek. Temporary extra workspace is needed to store the additional volume of spoil that would be generated to accommodate the additional depth of cover needed across the waterbody. Because there is no available area on this side of the waterbody other than the road, KRGT would locate the temporary extra workspace on top of the county road, which is within 50 feet of the north bank of Lewis Canyon Creek. There is no riparian vegetation at this crossing and by utilizing the road, disturbance of additional vegetative areas would be avoided. KRGT would acquire the necessary authorizations required from the appropriate agency with jurisdiction for the road. Based on these factors, this request is approved.

KRGT requests approval to locate temporary extra workspace 10 feet from the north and south banks of the Sevier River. The Sevier River is considered a major waterbody and, in accordance with its WWCM Procedures, KRGT provided a site-specific crossing plan for this crossing (see section 4.3.2.6). Because of the size of this waterbody crossing and the extra depth of cover requirements, temporary extra workspace would be needed to store the large volume of spoil generated. However, the presence of wetlands on the south bank of the river limits the area available for temporary extra workspace. KRGT proposes to reduce the size of the temporary extra workspaces in this area to minimize impact on these wetlands. The limited work area that is available for temporary extra workspace is located between the south bank of the river and the wetland. The restricted work area on the south bank places greater significance on the location and size of the work area located on the north bank. A 50-foot setback distance on this bank would place spoil stockpile areas beyond the reach capability of a single mechanical excavator. Additional equipment would be required to relay the spoil material, which would increase the duration of construction and the overall area affected by construction. For these reasons, and because placement of the temporary extra workspaces 10 feet from the river banks would not require the removal of any woody vegetation, this request is approved.

4.3.2.6 Major and Sensitive Waterbodies

Major Waterbodies

In accordance with its WWCM Procedures, KRGT has provided site-specific crossing plans for the two perennial waterbodies, the Surplus Canal (MP 129.8) and the Sevier River (MP 224.4), that are greater than 100 feet wide at the crossing location. The Surplus Canal is approximately 133 feet wide where it would be crossed. The Sevier River is about 143 feet wide where it would be crossed. KRGT proposes to open cut these waterbodies using mechanical excavators operating from each bank. Sidecasting of spoil within the waterbody is not proposed for the Surplus Canal and is not considered for the Sevier River unless the base flow is significantly less than anticipated at the time of construction. KRGT would minimize the impact of an open-cut crossing by limiting the in-stream work at these waterbodies and by completing the crossings in accordance with its WWCM Procedures.

The installation of large diameter pipe across the Surplus Canal and Sevier River would require large temporary extra workspaces on each side of the waterbody to safely and efficiently excavate and stockpile a substantial quantity of spoil while also furnishing adequate space to perform related construction activities. Adequate workspace would also be required to lift and maneuver the completed pipe section into place across the waterbodies utilizing multiple pieces of heavy construction equipment. If temporary equipment bridges are determined to be necessary by the construction contractor and the EI, a flexifloat-type bridge would likely be installed across the waterbodies. After installation of the pipe and backfill, KRGT would return the streambanks to the original contours and stabilize them using stone riprap.

KRGT's site-specific crossing plans were reviewed and deemed appropriate for the Surplus Canal. The site-specific crossing plan for the Sevier River depicts the temporary extra workspaces to be 10 feet from the river banks rather than the 50-foot setback required by KRGT's WWCM Procedures. As discussed above, the Agency Staffs have approved KRGT's request to locate the temporary extra workspaces 10 feet from the river banks and, therefore, find KRGT's site-specific crossing plan for the Sevier River acceptable.

Although neither surface flow nor a defined channel are evident at either of the two crossing locations of the Mojave River (MP 676.7 of the Goodsprings Loop and MP 18.0 of the Daggett Loop), it is classified as an intermittent waterbody. The area consists of a broad, dry wash that includes several smaller, braided washes with no riparian vegetation at either of the crossing locations. KRGT proposes to construct the crossings of the Mojave River using the open-cut method in accordance with its state waterbody crossing permits. Because the waterbody would be dry at the crossing locations and KRGT would restore the areas to preconstruction contours following construction, the open-cut method would not result in significant impacts on the Mojave River.

Sensitive Waterbodies

Waterbodies may be considered sensitive to pipeline construction for a number of reasons including, but not limited to, the width of the crossing, the presence of coldwater aquatic habitat, fisheries, imported or special status species, high-quality recreational or visual resource values, historic value, or the presence of contaminated sediments or water. Crossing methods for sensitive waterbodies were developed in consultation with land management, permitting, and resource agencies within each state. For each waterbody identified as a concern by an agency, KRGT developed a site-specific crossing procedure in consultation with the agency.

Both the Bear River and the Weber River support coldwater fisheries and Federal and/or state sensitive fish species. The WGFD identified the Bear River as being inhabited by several native fish species in need of special management considerations and recommended that KRGT avoid in-stream construction by crossing the Bear River using the HDD method. The HDD method is described in section 2.3.2. The Bear

River is located in Uinta County, Wyoming at MP 47.5 (Muddy Creek Loop). The Weber River is considered sensitive by the UDWR and contains populations of Bonneville cutthroat trout as well as other local trout species. To avoid potential impacts associated with conventional crossing methods on fishery and adjacent wetland and riparian resources, KRGT decided to evaluate crossing the Weber River using the HDD method. The same HDD would also cross under the East Branch Weber River. The East Branch Weber and Weber Rivers are located in Summit County, Utah at MPs 87.4 and 87.6 (Coyote Creek Loop 1), respectively.

KRGT conducted geotechnical investigations in August 2001 at the Bear and Weber Rivers to determine whether the HDD method would be feasible. Based on the results of the investigations, KRGT expects to successfully cross these rivers using the HDD method. KRGT has submitted site-specific HDD crossing plans that show the drill entry and exit workspaces, drill profiles, and workspace requirements for the pipe fabrication and stringout areas. Based on a review of the alignment sheets for those areas, it appears that wetlands may be present within the pipe fabrication and stringout areas at both crossings. Therefore, **the Agency Staffs recommend the following measure:**

- **<u>Before construction of the Bear and Weber River crossings may begin</u>, KRGT shall file with the FERC for the review and written approval of the Director of OEP revised site-specific HDD crossing plans for these rivers that show all workspace requirements for the drilling operations and the wetlands that would be affected by each workspace. If surveys indicate no wetlands are present, KRGT shall file the survey documentation that supports the finding.**

A successful HDD crossing of the Bear River would minimize impacts on the waterbody, adjacent wetlands, and a two-track railroad. A successful HDD crossing of the Weber River would minimize impacts on the waterbody and its tributary (the East Branch Weber River), adjacent wetlands, an adjacent recreational vehicle (RV) park, Interstate 80, and secondary roads. The primary impact that could occur as a result of directional drilling is an inadvertent release of drilling mud (frac-out) directly or indirectly into the waterbody. Drilling mud may leak through previously unidentified fractures in the material underlying the riverbed, in the area of the mud pits or tanks, or along the path of the drill due to unfavorable ground conditions. Although drilling mud consists of naturally occurring nontoxic materials, such as bentonite clay and water, the release of large quantities of drilling mud into a waterbody could affect fisheries or other aquatic organisms by settling and temporarily inundating the habitats used by these species. This impact would be less likely in fast moving water, which would disperse the drilling mud over a large area. Moreover, the impact of an inadvertent release would be substantially less than the impact associated with an open-cut crossing.

KRGT has prepared a Drilling Mud Release Contingency Plan (see appendix O) that describes how KRGT would conduct and monitor the drilling operations to minimize the potential for inadvertent drilling mud releases. The plan also includes procedures for cleanup of drilling mud releases and for sealing the hole if a drill cannot be completed. These procedures are adequate to reduce the potential impact of an inadvertent release of drilling mud to a less than significant level.

KRGT would conduct dry crossings of Chalk Creek (MP 66.8), East Fork Chalk Creek (MP 69.6), an unnamed creek (MP 71.1), South Fork Chalk Creek (MP 81.1), and the Muddy River (MP 477.1) using either the flume or dam and pump crossing method. As described in section 2.3.2, the flume method is a dry-crossing technique that uses dams and flumes to isolate stream flow from the construction work area, thereby avoiding in-stream activities. The flume method is generally used to cross small to intermediate flowing, coldwater fisheries, or coolwater and warmwater fisheries considered significant by the applicable states. Where successfully employed, the flume method can significantly reduce the amount of sediment released into the water column during construction, and thus reduce the overall impact on the waterbody. The dam and pump technique is similar to the flume crossing technique except that pumps are used instead of flumes to move water across the construction work area. KRGT would cross Coyote Creek (MP 52.6) using the

flume method if the width from water's edge to water's edge is less than 10 feet at the time of crossing or as required by applicable permits. Coyote Creek, Chalk Creek, East Fork Chalk Creek, and the unnamed creek at MP 71.1 are listed as coldwater fisheries. South Fork Chalk Creek is listed as a game fish spawning area. With the exception of Coyote Creek, the remaining five waterbodies have agency-specified construction windows to protect special status species (see sections 4.6.2 and 4.7).

KRGT proposes to open cut three other coldwater fisheries that have agency-specified construction windows. These waterbodies are Magotsu Creek (MP 400.3), Moody Wash (MP 403.3), and Beaver Dam Wash (MP 431.0). Additional discussion of these waterbodies is provided in section 4.6.2.

One coldwater fishery, Yellow Creek (MP 59.6), has experienced stream scour and bank erosion in the past at the crossing location. Additional discussion of Yellow Creek is provided in section 4.3.2.8.

During agency scoping, the FS, Dixie National Forest, recommended mitigation at Hiway Spring (MP 394.1), Magotsu Creek (MP 400.3), and Moody Wash (MP 403.3). According to the FS, construction of the existing KRGT pipeline at Hiway Spring created vertical, bare banks where improperly placed fill had washed out. The FS requested that KRGT reshape and reseed the creek banks along the original route during the proposed construction. Additionally, the FS recommended that KRGT implement measures to stabilize the creek using rock to mimic the original channel as much as possible and plant rooted cuttings from upstream willows. At Moody Wash and Magotsu Creek, the FS recommended that KRGT place more boulders within the channel to assist each waterbody in developing sinuosity and pools. KRGT has incorporated the recommended mitigation into its site-specific Dixie National Forest Reclamation Plan (see section 4.5.2.1).

4.3.2.7 Blasting

Based on information obtained during construction of KRGT's existing pipeline, KRGT does not anticipate that blasting would be necessary to remove bedrock during in-stream construction. In the unlikely event it is required, blasting could injure or kill aquatic organisms, displace organisms during blast-hole drilling operations, and temporarily increase stream turbidity. By-products from the blast also could be released, potentially contaminating the water. Blasting mitigation techniques to avoid impact on fish populations are discussed in section 4.6.2.

4.3.2.8 Scouring

Based on information collected during construction of the existing KRGT pipeline, KRGT has evaluated locations where potential scour could expose the proposed pipeline. Of these, Yellow Creek has been identified by several agencies as particularly susceptible to scouring. The COE has recommended that the proposed crossing be engineered to prevent pipeline exposure by scouring. To assess the existing pipeline crossing and determine if additional mitigation may be required for the proposed pipeline, KRGT hired AMEC and Miller Associates to investigate the existing erosion control (gabion) structures and drainage features at Yellow Creek. The investigation results indicated that the existing erosion control structures have prevented additional scouring and sediment deposit in Yellow Creek upstream of the proposed crossing location and that these measures should prevent future scour and erosion of the existing pipeline, as well as any pipelines constructed upstream of the existing gabion structures. AMEC and Miller Associates recommended protecting the existing erosion control structures and positioning the alignment of the proposed route to avoid other drainage features entering the channel of Yellow Creek. KRGT agreed to these recommendations and has received its permit from the COE, Wyoming Regulatory Office for the Yellow Creek crossing.

Additionally, the pipeline route would cross numerous perennial or ephemeral well-defined channels as well as alluvial fans where there are no well-defined channels, but where channels could be cut by flows resulting from runoff events in upstream watersheds. In these situations, the integrity of the pipeline requires

that it be buried below the expected depth of channel scour and degradation. In the lateral direction, the pipeline must also be buried at a depth sufficient to protect it from the effects of lateral erosion by the channel banks. Based on the results of the scour calculations performed during construction of the existing KRGT pipeline, 23 locations, in addition to Yellow Creek, have the potential for scour that may require deeper than normal pipeline burial depth at the crossing location (see table 4.3.2-3 (page 4-60)). KRGT would implement one or a combination of the following measures to protect against scour and bank erosion at these locations:

- burial below scour depth;
- use of concrete-coated pipe or set-on concrete weights;
- use of rock shield around the pipe; and/or
- installation of erosion control measures (such as gabions and riprap).

Implementation of KRGT's proposed measures would reduce the impacts related to streambed scour to less than significant levels.

TABLE 4.3.2-3

Potential Stream Scour Locations Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Waterbody Name	Approximate Milepost	Bank to Bank Width (feet)	Scour Depth (feet)
WYOMING				
Muddy Creek Loop	Little Muddy Creek	13.7	60	12.5
	Albert Creek	17.1	70	6.6
	Albert Creek	17.7	20	3.9
	Albert Creek	17.9	30	4.8
	Albert Creek	22.9	30	5.1
	Blake Hollow	46.1	62	3.8
	Yellow Creek	59.6	30	a/
UTAH				
Coyote Creek Loop 1	East Fork Chalk Creek	69.6	70	4.2
	Lewis Canyon	88.8	80	7.1
Salt Lake Loop	Tickville Gulch	162.8	80	9.4
Elberta Loop	Sevier River	224.4	143	7.0
	East Fork Ditch	248.5	120	10.3
Fillmore Loop	Cove Creek	298.3	160	7.7
	Corral Canyon	315.7	32	4.0
Veyo Loop	Tobin Wash	407.8	800	5.6
	Grapevine Wash	408.6	<20	5.1
	Jackson Wash	417.9	500	5.3
	Horse Canyon Wash	423.3	200	3.7
	Indian Canyon Wash	426.7	250	4.0
NEVADA				
Veyo Loop	Meadow Valley Wash	474.2	NA	7.1
	Muddy River	477.1	37	7.5
Goodsprings Loop	Mojave River	676.7	>100	6.1
CALIFORNIA				
Daggett Loop	Daggett Wash	3.5	160	4.0
	Mojave River	18.2	b/	6.3

a/ Although this waterbody was identified as susceptible to scour, existing erosion control structures (gabion) were determined to be adequate in preventing future scour at the proposed crossing location.

b/ Series of braided washes.

4.3.2.9 Contaminated Sediments

The Muddy River (MP 477.1) is listed as an impaired waterbody based on total phosphorus and metals (NDEP, 1998a). Shallow groundwater underlying the Muddy River floodplain may contain elevated concentrations of inorganic salts, although at levels that do not present a health concern to construction workers. KRGT proposes to cross the Muddy River using the flume method. If phosphorus is present in the Muddy River, implementation of KRGT's UECRM Plan and WWCM Procedures and the additional measures described below would minimize the potential for sediment resuspension, sediment transport, and erosion of banks and would adequately address this potential effect based on recommendations from the NDEP and the COE. Specifically, to minimize resuspension of any potentially contaminated sediments in the Muddy River, KRGT proposes to cross the Muddy River using the flume method and would stockpile excavated material in the adjacent upland staging area or temporary extra workspace as needed to minimize handling of sediments. Use of the flume method, described in detail in section 2.3.2, would minimize the potential for dispersing contaminated sediments in the Muddy River by limiting in-stream activities in flowing water. Although contaminated sediments may be disturbed during construction through the Muddy River, downstream dispersal of contaminated sediments would be minimized by installing the crossing using a "dry-ditching" method. Specifically, KRGT would complete trenching and backfilling activities in a "dry" area within the waterbody (see figure 2.3.2-2 (page 2-31) and return the streambottom profile to preconstruction conditions, including replacement of subsurface sediments and streambottom materials before returning the stream to normal flow conditions. In addition, KRGT would incorporate any special COE or state conditions regarding handling of potentially contaminated sediments into its crossing plans and would adhere to all NPDES permit stipulations when handling potentially contaminated sediments at the Muddy River.

The COE Utah Regional Office and the UDEQ have identified Bingham Creek (MP 147.0) as contaminated with elevated levels of copper and zinc due to activities at the Kennecott facility. The COE recommended that KRGT follow-up with the UDEQ to determine if the area has been cleaned up, and recommended crossing the creek using the bore method (see section 2.3.2). KRGT would cross Bingham Creek using the bore method unless KRGT obtains documentation from the UDEQ that the potential for contaminated sediments no longer exists at the crossing location.

Other waterbodies classified as impaired by the EPA were not identified as containing contaminated sediments. KRGT's proposed crossing methods through these waterbodies would not affect water quality beyond the temporary impacts previously discussed in section 4.3.2.3. Implementation of KRGT's proposed measures would reduce the potential for impacts associated with contaminated sediments to less than significant levels.

4.3.2.10 Hydrostatic Testing

KRGT would verify the integrity of the pipeline before placing it into service by conducting a series of hydrostatic tests. These tests involve filling the pipeline with water, pressurizing it, and then checking for pressure losses due to pipeline leakage. KRGT would acquire the necessary permits from state agencies before withdrawing or discharging hydrostatic test water, including specific approvals from applicable resource agencies (*e.g.*, WGFD).

KRGT has identified 11 potential hydrostatic test water source locations. These source locations and the approximate volumes to be withdrawn for each test are listed in table 4.3.2-4 (page 4-62). Because of the volumes required, the appropriation of water from waterbodies and wells could require several days. Due to limited withdrawal rates, KRGT may store withdrawn water in storage tanks until sufficient water is accumulated to test a particular segment of the pipeline.

TABLE 4.3.2-4

Hydrostatic Test Water Information for the Kern River 2003 Expansion Project

Facility	Source a/	County	Milepost of Withdrawal Location	Approximate Volume (gallons) b/
Opal Loop MPs 0.0 to 6.3	Hams Fork River	Lincoln	0.7	1,675,995
Muddy Creek Loop MPs 0.0 to 60.1	Bear River	Uinta	47.5	15,988,483
Coyote Creek Loop 1 MPs 60.1 to 96.4	Weber River	Summit	87.5	9,658,549
Coyote Creek Loop 2 and Salt Lake Loop MPs 124.5 to 184.5	Provo Canal	Salt Lake	154.8	15,960,749
Salt Lake Loop, Elberta Loop, and Fillmore Loop MPs 184.5 to 277.0	Sevier River	Juab	224.3	24,607,868
Fillmore Loop MPs 277.0 to 368.9	High Line Canal	Beaver	323.7	24,448,249
Fillmore Loop and Veyo Loop MPs 368.9 to 428.6	Spring Creek	Washington	389.8	15,882,051
Veyo Loop and Dry Lake Loop 1 MPs 428.6 to 517.5	North Las Vegas Water District	Clark	517.5	23,650,156
Dry Lake Loop 2 and Goodsprings Loop MPs 543.6 to 598.0	North Las Vegas Water District	Clark	543.6	14,472,086
Goodsprings Loop MPs 598.0 to 681.9	Mojave Water Agency	San Bernardino	19.4	22,189,646
Daggett Loop MPs 0.0 to 82.4	Mojave Water Agency	Kern	19.5	29,849,634

a/ Preliminary sources and fill sites.

b/ Volumes shown are 100 percent of the fill volumes for the pipeline sections.

The appropriation of large volumes of hydrostatic test water from surface water sources could temporarily affect the recreational and biological uses of the resource if the diversions constitute a large percentage of the source's total flow or volume. The diversion of large volumes of water from waterbodies could also result in the temporary loss of habitat, changes in water temperature and dissolved oxygen levels, and entrainment or impingement of fish or other aquatic organisms. The withdrawal of large amounts of water from private or public water supply wells could exceed the delivery capacity of the system or well. No other impacts on water wells due to hydrostatic test water withdrawal are expected.

KRGT would minimize the potential for these effects by adhering to the hydrostatic testing measures included in its WWCM Procedures (see appendix F). These measures include screening intake hoses and regulating the withdrawal of hydrostatic test water at a rate that would not adversely affect aquatic resources or downstream flows. KRGT would limit the rate of water withdrawal from private water wells and county water system wells so as not to exceed the delivery capacity of the system or well. KRGT would be testing only new pipe and would not add any chemicals to the water during hydrostatic testing.

KRGT would maintain a test pressure of a minimum of 125 percent of the proposed MAOP of the pipeline for at least 8 hours per test segment. Upon completion of each hydrostatic test section, KRGT would either discharge the water on land within the construction right-of-way in accordance with its discharge permits, store the test water in holding tanks until the next pipeline segment is ready to be hydrostatically tested, or pump the water directly into the next pipeline segment to be hydrostatically tested. KRGT would not discharge test water directly into surface waters unless authorized or required by its NPDES permits. Table P-1 in appendix P (pages P-1 through P-3) lists the locations that KRGT has identified as potential hydrostatic test water discharge areas as well as the approximate volumes to be discharged at each site.

The potential impacts resulting from the discharge of hydrostatic test waters onto land would include soil erosion and subsequent degradation of water quality, including increased turbidity and sedimentation from hydrostatic test water runoff. If KRGT's NPDES permits authorize or require discharges directly into surface waters, high velocity flows could also cause erosion of the streambanks and streambottom, resulting in a temporary increase of sediment load and destruction of habitat. KRGT would use energy-dissipating devices and/or filter bags to prevent erosion, streambed scour, suspension of sediments, and excessive streamflow.

As stated above, two of KRGT's proposed hydrostatic test water sources, the Bear River and Weber River, support coldwater fisheries and offer habitat to Federal and/or state-listed special status species. KRGT has indicated that hydrostatic test water intakes at these two waterbodies would have filtering and screening devices to avoid the pumping of organic debris and the entrainment of aquatic species. Test water intakes would also be suspended above the streambottom. Pursuant to permit conditions, KRGT would determine the allowable rates of withdrawal from surface waters to provide for adequate sustained flow based on conditions at the time that these withdrawals are made.

If withdrawals and discharges are conducted according to KRGT's WWCM Procedures and its proposed mitigation measures and in compliance with NPDES and other applicable permit requirements and DOT pipeline safety regulations as set forth in Title 49 CFR Part 192, the impacts of hydrostatic testing on water resources would be less than significant.

4.3.2.11 Dust Control

As discussed in sections 4.2.3.1, 4.7.2, and 4.11.1.3, KRGT would apply water and/or a water-based, non-toxic, organic tackifier to the construction work area, including topsoil piles, to control dust generated by construction activities. KRGT expects that the same sources of water identified for hydrostatic testing in section 4.3.2.10 would be used to provide the water for dust control activities. Table 4.3.2-5 (page 4-64) provides an estimate of the volumes of water that would be used for dust control on each construction spread.

KRGT would store the water in storage tanks located in extra work areas along the construction right-of-way. Trucks would fill up at the storage locations and then travel the right-of-way applying water as necessary to control dust (see section 4.9.5).

The impacts on water resources due to the water withdrawals for dust control would be the same as those outlined in section 4.3.2.10 for hydrostatic test water withdrawals. If the withdrawals are conducted according to KRGT's WWCM Procedures and its proposed mitigation measures for hydrostatic test water withdrawals, and in compliance with applicable permit requirements, the impacts of dust control measures on water resources would be less than significant.

TABLE 4.3.2-5

Estimate of Water Required for Dust Control

Facility	Milepost	Days of Water	Water Per Day (gallons) a/	Total Water (gallons)
Spread 1 Opal Loop and Muddy Creek Loop	0.0-6.3 0.0-60.1	78	96,000	7,441,920
Spread 2 Coyote Creek Loop 1 and Anschutz Lateral	60.1-96.4	69	96,000	6,658,560
Spread 3 Coyote Creek Loop 2 and Salt Lake Loop	124.5-184.5	78	96,000	7,441,920
Spread 4 Salt Lake Loop, Elberta Loop, and Fillmore Loop	184.5-277.0	84	96,000	8,094,720
Spread 5 Fillmore Loop	277.0-368.9	97	96,000	9,269,760
Spread 6 Fillmore Loop, Veyo Loop	368.9-416.0	78	96,000	7,441,920
Spread 7 Veyo Loop, Dry Lake Loop 1	416.0-517.5	76	96,000	7,311,360
Spread 8 Dry Lake Loop 2 and Goodsprings Loop	543.6-598.0	57	96,000	5,483,520
Spread 9 Goodsprings Loop	598.0-681.9	97	96,000	9,269,760
Spread 10 Daggett Loop	0.0-82.4	99	96,000	9,530,880
TOTAL				77,944,320

a/ 1.4 trucks/day x 6 round trips x 4,000 gallon/truck.

4.3.2.12 Streambed Alteration Agreement

The CDFG opposes the elimination of watercourses and/or their channelization or conversion to subsurface drains (CDFG, 2001). All wetlands and watercourses, whether intermittent or perennial, must be retained and provided with substantial setbacks that preserve the riparian and aquatic values and maintain their value to resident and migrant wildlife populations. In addition, the CDFG requires project applicants to notify the CDFG of any activity that would divert, obstruct, or change the natural flow of the bed, channel, or bank (which includes associated riparian habitat) of a river, stream, or lake; or use material from a streambed before the applicant's commencement of the activity. Streams include, but are not limited to, intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams, and watercourses with subsurface flow. The issuance of a Streambed Alteration Agreement (SAA)(Section 1600 *et seq.* of the California Fish and Game Code) for projects subject to the CEQA requires CEQA compliance actions by the CDFG as a responsible agency. In order for the CDFG to process an SAA, the EIS/EIR document must incorporate information regarding impacts on lakes, streams, and associated habitat, including, but not limited to the items listed below and summarized in table 4.3.2-6 (page 4-65).

- a delineation of lakes, streams, and associated habitat that would be directly or indirectly impacted by the proposed project. [A discussion of waterbodies potentially affected by the proposed project is included in section 4.3.2.]

TABLE 4.3.2-6

Summary and Location of Information Required for the California Department of Fish and Game to Process a Streambed Alteration Agreement for the Kern River 2003 Expansion Project

Information Required by the CDFG	Summary of Discussion	EIS/EIR Section
Potentially Affected Waterbodies	• No perennial waterbodies would be crossed by the proposed route in California. • 32 intermittent waterbody crossings would occur in California. • The Mojave River represents two of the intermittent waterbody crossings, but does not provide suitable fishery habitat at either of the two crossing locations.	4.3.2
Biological Resources	• No riparian vegetative communities were identified along the proposed route in California. • No riparian-dependent terrestrial species were identified along the proposed route in California. • The Mojave River does not provide suitable fishery habitat at either of the two crossing locations.	4.5, 4.6.1, 4.6.2
Sensitive Biological Resources	• No riparian-dependent special status species were identified in California.	4.7
Environmental Alternatives	• No action and postponed action alternatives, system alternatives, and route alternatives were analyzed for the route in California. • The two proposed locations for crossing the Mojave River, both of which are greater than 100 feet wide, would not result in adverse impacts. Therefore, no alternative locations need to be analyzed. • The proposed open-cut method of crossing the Mojave River would not result in adverse impacts. Therefore, no alternative methods (*e.g.*, HDD) need to be analyzed. • The proposed route is environmentally superior to all analyzed alternatives.	3.0
Avoidance Measures	• Avoiding resources to reduce impacts was considered during analysis of alternatives.	3.0
Potential Mitigation Measures	• Implementation of KRGT's WWCM Procedures would mitigate potential impacts on areas regulated under the SAA.	4.0
Potential Adverse Impacts	• Implementation of KRGT's WWCM Procedures would mitigate potential impacts on areas regulated under the SAA.	4.2, 4.3.2, 4.6.2, 4.7

- details on the biological resources (flora and fauna) associated with the lakes and/or streams. [Vegetation, wildlife, and aquatic resources known to occur or potentially occurring in waterbodies crossed by the proposed project are discussed in sections 4.5, 4.6.1, and 4.6.2, respectively.]

- identification of the presence or absence of sensitive plants, animals, or natural communities. [Special status species, including federally and state-listed species, potentially affected by the proposed project are discussed in section 4.7.]

- a discussion of environmental alternatives. [Project alternatives, including route modifications and system alternatives, are discussed in section 3.0.]

- a discussion of avoidance measures to reduce project impacts. [Reducing potential impacts of the project by avoiding resources is discussed in the various resource-specific sections of this document.]

- a discussion of potential mitigation measures required to reduce the project impacts to a less than significant level. [KRGT's proposed mitigation measures, as well as additional measures developed by the Agency Staffs to minimize impacts, are discussed under the respective resources.]

- a discussion of potential adverse impacts from any increased runoff, sedimentation, soil erosion, and/or urban pollutants on streams and watercourses on or near the project site, with mitigation measures proposed to alleviate such impacts. [Adverse impacts occurring from runoff, sedimentation, erosion, and the potential for contamination are discussed in sections 4.2, 4.3.2, 4.6.2, and 4.7. Measures to minimize and mitigate for these impacts are included in those sections.]

The CDFG, as a responsible agency under the CEQA, may consider the local jurisdiction's (lead state agency) Negative Declaration or EIR for the project. If the EIR does not fully identify potential impacts on lakes, streams, and associated resources, and provide adequate avoidance, mitigation, monitoring, and reporting commitments, additional CEQA documentation would be required before execution (signing) of the SAA.

4.4 WETLANDS

Significance Criteria

Adverse impact on wetlands would be considered significant and would require additional mitigation if project construction or operation would:

- fill or alter a wetland, resulting in a long-term adverse change in its hydrology, soils, or composition of vegetation, or unique, rare, or special concern wetland community; or
- cause short- or long-term violations of Federal or state water quality standards for streams that lead to wetlands measured as in-stream elevated turbidity readings or decreased dissolved oxygen levels.

4.4.1 Pipeline Facilities

Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of wetland vegetation typically adapted for life in saturated soil conditions (COE, 1987). Wetlands are a source of substantial biodiversity and serve a variety of functions, including providing wildlife habitat and recreational opportunities, naturally improving water quality, and flood control. Wetland vegetation anchors soil and prevents erosion. The 1987 COE Wetlands Delineation Manual, which is the current Federal methodology, was used to identify and delineate wetlands crossed by the proposed project. Surveys were performed along the proposed pipeline loops during the spring and summer of 2001. Wetlands that would be affected during construction and operation of the proposed project are listed in table 4.4.1-1 (page 4-68).

The Kern River 2003 Expansion Project would cross 72 wetlands for a total distance of about 5.5 miles. About 1.7 miles would be in Wyoming and 3.8 miles would be in Utah. Of this total, nine wetlands (0.3 mile) would be avoided by KRGT's proposed HDD crossings of the Bear, East Branch Weber, and Weber Rivers (see section 4.3.2), and three wetlands (0.01 mile) would be avoided by the proposed bore crossing of the Union Pacific Railroad. No wetlands would be crossed in Nevada or California. All of the wetlands that would be crossed are classified as palustrine emergent wetlands that are concentrated in the four general areas of southwest Wyoming, northeast Utah, the Salt Lake City area, and central Utah. Palustrine emergent wetlands consist of non-tidal wetlands dominated by perennial grass-like plants. The emergent wetlands crossed by the proposed route would traditionally be called wet meadows or marshes.

Wyoming

The wetlands crossed in southwest Wyoming are narrow, emergent wetlands associated with channels or oxbows of waterbodies or drainages where groundwater is close to the soil surface. Although emergent vegetation dominates these wetlands, scattered cottonwoods and willow trees also occur in some areas. These trees, however, are not of sufficient density to classify them as forested wetlands.

Utah

The wetlands in northeast Utah are similar to those described for Wyoming. The wetlands in the Salt Lake City area are emergent wetlands that are part of the Greater Great Salt Lake Ecosystem. These wetlands are dominated by emergent vegetation, are usually ephemeral, and occur on silty or sandy loam sediments derived from ancient Lake Bonneville. Three vegetative communities distinguish the wetlands in this area: barren playa; *Distichlis* emergent wetland; and shallow to deep emergent marshes dominated by cattails, sedges, rushes, reed canary grass, and other species. The barren playa and *Distichlis* emergent wetlands are widespread while the shallow to deep emergent marsh wetlands occur mainly southeast of the Great Salt Lake.

The wetlands in central Utah are isolated, emergent wetlands. Dominant wetland species in these wetlands include salt grass and Baltic rush.

TABLE 4.4.1-1

Wetlands Crossed by the Kern River 2003 Expansion Project Pipeline Route a/

State/Facility	County	Approximate Milepost	Wetland ID	Crossing Length (feet)	Acreage Affected During Construction b/	Acreage Within the Operational Right-of-Way c/
WYOMING						
Opal Loop	Lincoln	0.61	W12026	21	0.00 d/	0.00
		0.62	W12027	37	0.00 d/	0.00
		0.63	W12028	21	0.00 d/	0.00
		0.95	W12029	21	0.05	0.00
		1.00	W12030	275	0.51	0.33
		1.11	W12031	26	0.08	0.03
Muddy Creek Loop		2.39	W11010	26	0.05	0.03
		8.10	W11011	53	0.01	0.00
		13.67	W11012	37	0.03	0.02
		22.81	W11021	11	0.09	0.02
	Uinta	27.69	W11024	301	0.60	0.43
		27.74	W11024	53	e/	0.00
		35.13	W11038	490	0.97	0.55
		42.96	W11026	675	1.72	0.71
		43.21	W11025	21	0.06	0.02
		47.67	W11027	21	0.00 f/	0.00
		47.70	W11028	32	0.00 f/	0.00
		47.77	W11029	794	1.43	0.83
		47.98	W11030	58	0.27	0.15
		48.01	W11030B	84	e/	0.00
		48.05	W11031	58	0.12	0.07
		48.11	W11032	400	0.69	0.44
		48.24	W11033	37	0.07	0.04
		48.34	W11034	500	0.98	0.56
		48.53	W11035	4,018	8.08	4.53
		52.48	W11037	180	0.27	0.20
		54.65	W11036	153	0.27	0.17
		59.61	W12025	444	1.47	0.54
Coyote Creek Loop 1		62.11	W26005	58	0.13	0.08
		62.48	W26003	42	0.08	0.05
		62.88	W26002	153	0.35	0.19
Wyoming Subtotal				9,100	18.38	9.99
UTAH						
Coyote Creek Loop 1	Summit	63.19	W26001	63	0.10	0.07
		68.13	W26008	42	0.14	0.06
		68.32	W26006	42	0.08	0.05
		71.16	W12019	16	0.09	0.03
		71.31	W12020	90	0.04	0.01
		71.75	W12018B	100	0.07	0.03
		71.75	W12018A	48	e/	0.00
		72.28	W12015	100	0.04	0.03
		72.53	W12016	21	0.06	0.03
		72.95	W12017	5	0.03	0.01
		81.09	W12021	74	0.12	0.07
		87.02	W13004	780	0.00 f/	0.00
		87.17	W12013	143	0.00 f/	0.00
		87.27	W12009	211	0.00 f/	0.00
		87.47	W12008	148	0.00 f/	0.00
		87.53	W12012	195	0.00 f/	0.00

TABLE 4.4.1-1 (cont'd)

Wetlands Crossed by the Kern River 2003 Expansion Project Pipeline Route a/

State/Facility	County	Approximate Milepost	Wetland ID	Crossing Length (feet)	Acreage Affected During Construction b/	Acreage Within the Operational Right-of-Way c/
		87.58	W12011	5	0.00 f/	0.00
		87.65	W12010	180	0.00 f/	0.00
		93.27	W12007	48	0.07	0.04
	Morgan	95.64	W12014	150	0.27	0.16
Coyote Creek Loop 2	Salt Lake	124.90	W12022	285	0.52	0.34
		125.04	W12023	539	0.99	0.72
		125.52	W13005	440	0.79	0.51
		125.61	W13005	53	e/	0.00
		125.63	W11102	250	0.37	0.27
		125.71	W13006	127	1.01	0.68
		125.74	W13006	359	e/	0.00
		125.83	W13006	69	e/	0.00
		125.85	W13006	53	e/	0.00
		125.91	W11103	269	0.45	0.31
		125.92	W11104	269	0.09	0.03
		126.35	W13007	639	1.13	0.74
		126.53	W13008	185	0.38	0.22
		126.62	W13008	48	e/	0.00
		126.71	W11105	407	3.61	2.54
		126.80	W11105	1,595	e/	0.00
		127.12	W11105	195	e/	0.00
		127.34	SL-45B	2,587	12.56	5.99
		127.84	SL-45B	238	e/	0.00
		127.94	SL-45B	380	e/	0.00
		128.05	SL-45B	602	e/	0.00
		128.56	SL-45A	1,320	e/	0.00
		128.89	SL-44B	21	0.04	0.02
		128.90	SL-45A	53	e/	0.00
		129.68	SL-42	422	1.14	0.57
		129.81	SL-40B	238	2.29	0.55
		129.87	SL-40B	306	e/	0.00
		130.06	SL-39C	1,795	5.61	2.93
		130.41	SL-39B	317	e/	0.00
		130.73	SL-39A	375	e/	0.00
		131.03	SL-37D	264	1.05	0.48
		131.16	SL-37C	116	e/	0.00
		131.25	SL-37C	90	e/	0.00
		131.28	SL-37D	53	e/	0.00
		131.84	W12001	74	0.45	0.25
		131.86	W12001	137	e/	0.00
Salt Lake Loop		134.33	W11004	58	0.38	0.19
		134.37	W11004	42	e/	0.00
		134.47	W11003	95	0.33	0.18
		134.59	W11002	16	0.58	0.41
		134.62	W11002	290	e/	0.00
		135.16	W11001	1,193	3.72	1.74
		139.49	W11001	200	e/	0.00
Elberta Loop	Juab	224.40	W12003	132	0.12	0.07
	Millard	271.73	W14006	201	0.37	0.23
		272.00	W14005	106	0.16	0.12
Utah Subtotal				19,963	39.25	20.68
Project Total				29,063	57.63	30.67

TABLE 4.4.1-1 (cont'd)

Wetlands Crossed by the Kern River 2003 Expansion Project Pipeline Route a/

State/Facility	County	Approximate Milepost	Wetland ID	Crossing Length (feet)	Acreage Affected During Construction b/	Acreage Within the Operational Right-of-Way c/

a/ All wetlands crossed have been delineated as palustrine emergent wetlands.

b/ Affected acreage was calculated from actual wetland boundaries rather than from linear dimensions and includes acreage associated with extra work area requests (see section 4.4.4).

c/ Based on the amount of wetland within the 25-foot-wide to 50-foot-wide new permanent easement; however, because the wetlands are emergent and no vegetation maintenance is anticipated, no operational impact would occur.

d/ Impact on the wetland would be avoided by the bore of the Union Pacific Railroad crossing.

e/ The wetland would be crossed more than once; therefore, the total affected acreage is provided for the wetland where first listed.

f/ Impact on the wetland would be avoided by an HDD crossing.

4.4.2 Aboveground Facilities

No wetlands would be affected by the proposed aboveground facilities. The powerlines associated with the new compressor stations would span any wetlands crossed by the right-of-way, resulting in no impact on wetlands.

4.4.3 General Impact and Mitigation

No wetlands would be permanently filled or drained as a result of the project. Construction would disturb 57.6 acres of palustrine emergent wetland, of which 30.7 acres would be located within the proposed operational (permanent) right-of-way. The primary impact of pipeline construction activities on wetlands would be the short-term alteration of wetland vegetation. This effect would be greatest during and immediately following construction. In wetlands crossed by the project, the impact of construction would be brief, because the herbaceous vegetation would regenerate quickly. No impact on these wetlands is anticipated during operation of the pipeline. Little, if any, woody vegetation would be cleared. Impacts on the small amount of woody vegetation that may be affected would be greater than on emergent vegetation because woody species typically regenerate more slowly after construction than herbaceous species.

Other types of impacts associated with construction of the pipeline could include temporary changes in wetland hydrology and water quality, temporary lowering of the water table, and increased turbidity during trenching and restoration activities. During construction, failure to segregate topsoil over the trenchline in nonsaturated wetlands could result in the mixing of the topsoil with the subsoil, which could lower biological recruitment of native wetland vegetation after restoration. In addition, inadvertent compaction and furrowing of soils during construction could result from the temporary stockpiling of soil and the movement of heavy machinery, which could in turn alter the natural hydrologic patterns of the wetlands, inhibit seed germination, or increase the potential for siltation. Construction clearing activities and disturbance of wetland vegetation could also temporarily affect the wetland's capacity to buffer flood flows and/or control erosion.

Wetland Construction and Mitigation Procedures

KRGT would minimize impacts on wetlands by complying with the COE's Section 404 permit conditions and state-issued Section 401 water quality certifications or waivers, and by implementing the wetland construction and restoration measures contained in its WWCM Procedures (see appendix F).

KRGT's proposed wetland mitigation is designed to minimize the area and duration of wetland disturbance, reduce the disturbance of wetland soils, and enhance wetland restoration following construction. These measures include, but are not limited to:

- limiting the width of the construction right-of-way in non-cultivated wetlands to 75 feet unless a wider right-of-way is expressly permitted by the FERC;
- limiting the operation of construction equipment within wetlands to that equipment essential for clearing, excavation, pipe installation, backfilling, and restoration activities;
- limiting grading activities to directly over the trenchline, except where additional grading is necessary to ensure safety;
- using low ground weight construction equipment, or operating equipment off of timber riprap, prefabricated timber mats, or geotextile fabric overlain with gravel in saturated or standing water wetlands;

- installing trench breakers or sealing the trench bottom as needed to prevent draining of a wetland and to maintain original wetland hydrology;

- prohibiting storage of hazardous materials, chemicals, fuels, and lubricating oils within a wetland or within 100 feet of a wetland boundary;

- consulting with the appropriate land management or state agencies to develop plans for revegetating wetlands and, where necessary, preventing the invasion or spread of undesirable exotic vegetation;

- limiting post-construction maintenance of vegetation within wetlands to removal of trees that are greater than 15 feet in height and are within 15 feet of the pipeline centerline, and maintenance of a 10-foot-wide strip of vegetation centered over the pipeline in herbaceous vegetation; and

- monitoring the success of wetland revegetation annually for a period of 3 to 5 years after construction, and developing and implementing remedial revegetation plans for wetlands that are not successfully revegetated.

The implementation of KRGT's WWCM Procedures and compliance with conditions included in the COE's permit and state water quality certifications or waivers would reduce impacts on wetlands to less than significant levels.

4.4.4 Extra Work Areas

In accordance with its WWCM Procedures, KRGT would limit the width of the construction right-of-way in non-cultivated wetlands to 75 feet and locate temporary extra workspaces at least 50 feet from wetland boundaries unless site-specific approval is granted by the FERC. KRGT has identified 21 wetland areas where it is requesting site-specific approval to use a construction right-of-way that is greater than 75 feet wide (see table 4.4.4-1 (page 4-73)). KRGT has also identified six areas where it is requesting approval to locate temporary extra workspace in or within 50 feet of a wetland boundary (see table 4.4.4-2 (page 4-74). KRGT's justification for these requests and the approval status are discussed below and summarized in tables 4.4.4-1 and 4.4.4-2.

Construction Right-of-Way

KRGT requests approval to use right-of-way widths up to 100 feet in wetland W12030 (MP 1.0 of the Opal Loop), up to 190 feet in wetland W12025 at the Yellow Creek crossing (MP 59.61 of the Muddy Creek Loop), and up to 105 feet in wetlands W14006 and W14005 (MPs 271.73 and 272.0, respectively, of the Elberta Loop). The request is approved for wetland W12025 due to the alignment requirements, construction constraints, and increased pipeline burial depth at and adjacent to Yellow Creek. The request for a wider construction right-of-way is also approved for wetlands W12030, W14006, and W14005 due to unstable saturated soil conditions that would result in a wide trench and large spoil piles.

At wetland W11026 located on the north side of Interstate 80 (MP 42.96 of the Muddy Creek Loop), KRGT requests approval to use a 105-foot-wide construction right-of-way. KRGT states that the additional right-of-way width is necessary because of constraints associated with the Interstate 80 crossing and limited available upland staging area for the wetland crossing. Wetland W11026 is bordered by the bore location for Interstate 80 on the south side and a side-sloping hill on the north side. Upland areas would require considerable grading to achieve a level work area for pipe staging and spoil storage associated with the

wetland crossing. This request is approved due to the alignment requirements for the crossing of Interstate 80 and the construction constraints around wetland W11026.

TABLE 4.4.4-1

KRGT's Requests for a Construction Right-of-Way Width Greater Than 75 Feet in Wetlands

State/Facility	Approximate Milepost	Wetland ID	Crossing Length (feet)	Proposed Right-of-Way Width (feet)	Reason KRGT is Requesting a Wider Right-of-Way	Approval Status
WYOMING						
Opal Loop	1.00	W12030	275	100	Unstable saturated soils	Approved
Muddy Creek Loop	35.13	W11038	490	90	Full right-of-way topsoil separation.	Approved
	42.96	W11026	675	105	Limited upland staging area for Interstate 80 and wetland crossing.	Approved
	47.77	W11029	794	90	Limited upland staging area between wetlands, anticipated wide trench, and topsoil separation.	Approved
	47.98	W11030	58	90	Limited upland staging area between wetlands, anticipated wide trench, and topsoil separation.	Approved
	48.01	W11030B	84	90	Limited upland staging area between wetlands, anticipated wide trench, and topsoil separation.	Approved
	48.05	W11031	58	90	Limited upland staging area between wetlands, anticipated wide trench, and topsoil separation.	Approved
	48.11	W11032	400	90	Limited upland staging area between wetlands, anticipated wide trench, and topsoil separation.	Approved
	48.24	W11033	37	90	Limited upland staging area between wetlands, anticipated wide trench, and topsoil separation.	Approved
	48.34	W11034	500	90	Limited upland staging area between wetlands, anticipated wide trench, and topsoil separation.	Approved
	48.53	W11035	4,018	90	Limited upland staging area between wetlands, anticipated wide trench, and topsoil separation.	Approved
	59.61	W12025	444	90 to 190	Yellow Creek crossing	Approved
UTAH						
Coyote Creek Loop 2						
	130.73	SL-39A	375	115	Limited upland staging area, spoil storage, and saturated soils.	a/
	131.03	SL-37D	264	115	Limited upland staging area, spoil storage, and saturated soils.	a/
	131.16	SL-37C	116	115	Limited upland staging area, spoil storage, and saturated soils.	a/
	131.25	SL-37C	90	115	Limited upland staging area, spoil storage, and saturated soils.	a/
	131.28	SL-37D	53	115	Limited upland staging area, spoil storage, and saturated soils.	a/
Salt Lake Loop	134.59	W11002	16	90	Limited upland staging area, saturated soils, and topsoil separation.	Approved
	134.62	W11002	290	90	Limited upland staging area, saturated soils, and topsoil separation.	Approved
Elberta Loop	271.73	W14006	201	105	Unstable saturated soils	Approved
	272.00	W14005	106	105	Unstable saturated soils	Approved

a/ Additional site-specific justification is necessary before approval can be granted.

TABLE 4.4.4-2

KRGT's Requests for Temporary Extra Workspace In or Within 50 feet of Wetlands

State/Facility	Approximate Milepost	Wetland ID	Requested Size (feet)	Reason	Approval Status
WYOMING					
Opal Loop	0.60	W12028	50 x 100 (working side and spoil side) a/	Hams Fork River crossing	Approved
Muddy Creek Loop	43.03	W11026	70 x 200	Interstate 80 crossing	Approved
	49.00	W11035	60 x 150	State Highway 150 crossing	Approved
UTAH					
Coyote Creek Loop 1	81.10	W12021	60 x 150 (working side and spoil side) a/	South Fork Chalk Creek crossing	Approved
Coyote Creek Loop 2	127.75	SL-45B	25 x 300 (working side) 20 x 150 (spoil side)	Elevated field road crossing	Approved
Salt Lake Loop	139.50	W11001	50 x 300 a/	Road and railroad crossing	Approved

a/ Requested temporary extra workspace is located outside of the wetland but within 50 feet of the wetland boundary.

KRGT requests approval to use a 90-foot-wide construction right-of-way in 10 wetland areas. Wetlands W11029 through W11035 (between MPs 47.77 and 48.53 of the Muddy Creek Loop) are located within the Bear River floodplain. The total length of this floodplain is approximately 8,450 feet, of which approximately 71 percent is wetland. Upland areas between the wetlands are limited and wetland W11035, which is approximately 4,000 feet long, is bordered on the south end by State Highway 150. KRGT states that due to the spacing of the wetlands and the limited amount of upland area between the wetlands, assembly of the wetland pipe sections in upland areas would be difficult. In addition, in order to achieve the required depth of cover over the pipe, KRGT anticipates that its pipeline trench would be 10 to 12 feet deep and 30 to 40 feet wide at the top. Such a wide trench leaves little room for spoil storage especially in wetlands where topsoil would be segregated. Without adequate room to store topsoil, maintaining segregation of the topsoil from the subsoil would be extremely difficult. Similar conditions exist at wetlands W11038 (MP 35.13 of the Muddy Creek Loop) and W11002 (MPs 134.59 and 134.62 of the Salt Lake Loop). An additional 15 feet of construction right-of-way is approved for these wetlands given the limited upland areas available for workspace, the likely widening of the pipeline trench during excavation, and/or the benefits gained from segregating topsoil from subsoil.

For the five wetland areas between MPs 130.73 and 131.28 of the Coyote Creek Loop 2 (wetlands SL-39 and SL-37), KRGT requests approval to use a 115-foot-wide construction right-of-way. KRGT states that the additional right-of-way width is needed to address a turn in the pipe, a drainage ditch, and spoil storage associated with the extra depth of cover required to bury the pipe below natural grade. According to KRGT, the location of the pipe turn in relation to the drainage ditch would require that the trench be wider and deeper than normal in order to make the turn and achieve the required 5 feet of cover below the drainage ditch. In addition, due to the length of multiple wetland crossings in between short distances of upland areas, the pipe section for these crossings could not be fully assembled in an upland area. Although additional right-of-way width may be required for pipeline construction in some of the wetland areas between MPs 130.7 and 131.3, KRGT did not provide sufficient site-specific information to demonstrate that a 115-foot-wide construction

right-of-way is needed in all five wetland areas. Therefore, additional site-specific justification is necessary before approval can be granted.

In summary, with the exception of wetlands SL-39 and SL-37 (five crossings total), KRGT's request for a wider right-of-way in selected wetlands is approved. However, without additional site-specific justification, KRGT's request for a wider right-of-way in wetlands SL-39 and SL-37 cannot be approved. In accordance with its WWCM Procedures, KRGT would need to use a 75-foot-wide construction right-of-way in these wetlands unless it submits additional information and/or site-specific plan(s) that justify the need for a construction right-of-way greater than 75 feet in width in these wetlands and receives the approval of the Director of OEP before construction.

Temporary Extra Workspace

KRGT requests approval to locate three temporary extra workspaces closer than 50 feet to wetlands W12028 (MP 0.60 of the Opal Loop), W12021 (MP 81.10 of the Coyote Creek Loop 1), and W11001 (MP 139.50 of the Salt Lake Loop) (see table 4.4.4-2 (page 4-74)). Two of these extra workspaces are associated with waterbody crossings (see section 4.3.2.5) and the third is associated with the crossing of a road and a railroad spur. Due to construction constraints associated with each of these crossings, a 50-foot setback from the wetland cannot be maintained. KRGT would maintain at least a 10-foot buffer between the temporary extra workspace and the wetland boundary and would not directly affect the wetland. Therefore, this request is approved.

KRGT also requests approval to locate temporary extra workspaces within wetlands W11026 (MP 43.03 of the Muddy Creek Loop), W11035 (MP 49.00 of the Muddy Creek Loop), and SL-45B (MP 127.75 of the Coyote Creek Loop 2) (see table 4.4.4-2 (page 4-74)). KRGT indicated that these temporary extra workspaces would be needed to complete the crossings of Interstate 80, State Highway 150, and an elevated field road.

Because of the proximity of Interstate 80 to wetland W11026, KRGT requests a temporary extra workspace 70 feet wide by 200 feet long within the southern end of the wetland at MP 43.03. KRGT states that upland areas suitable for staging the interstate crossing are not available north of the interstate (between the interstate and wetland) and that the bore cannot be effectively accomplished from the south side of the interstate without extensive grading and excavation. KRGT requests a 60-foot-wide by 150-foot-long temporary extra workspace in wetland W11035 at MP 49.00 located on the north side of State Highway 150. The bore for the highway crossing would be staged on the north side of the highway. The south side of the highway is not suitable for the staging of the bore due to the rocky hillside topography and the presence of an irrigation ditch. KRGT also requests a 25-foot-wide by 300-foot-long temporary extra workspace on the working side and a 20-foot-wide by 150-foot-long temporary extra workspace on the spoil side of the construction right-of-way at MP 127.75 in wetland SL-45B. KRGT states that the temporary extra workspace is required to install a "drag" section along the right-of-way as well as to store additional spoil resulting from crossing the elevated road located within the wetland. Due to the road crossing locations with respect to the wetlands, the request for temporary extra workspace in wetlands W11026, W11035, and SL-45B is approved.

4.5 VEGETATION

Significance Criteria

Adverse impact on vegetation would be considered significant and would require additional mitigation if project construction or operation would:

- disturb a substantial portion of the vegetation type within a local region to the point where natural or enhanced regeneration could not restore this vegetation to its preconstruction condition within 3 years;
- result in a long-term reduction or alteration of unique, rare, or special concern vegetation types (*e.g.*, riparian vegetation) or natural communities; or
- introduce new, or lead to the expanded range of existing, noxious weed species or soil pests so that they interfere with successful revegetation or crop production.

4.5.1 Vegetation Communities

4.5.1.1 Pipeline Facilities

The Kern River 2003 Expansion Project traverses five different ecological provinces: intermountain semi-desert; southern Rocky Mountain steppe - open woodland - coniferous forest - alpine meadow; intermountain semi-desert and desert; Nevada-Utah mountain semi-desert - coniferous forest - alpine meadow; and American semi-desert and desert. Within these 5 ecological provinces, the pipeline route crosses 11 vegetation communities. Table 4.5.1-1 (page 4-77) lists these communities, provides general descriptions, including the common vegetative species typical of each community, and identifies the loops along which these communities occur. The two primary vegetation communities crossed by the proposed route are Mojave creosote-bursage and sagebrush scrub. These communities comprise about 34 and 31 percent, respectively, of the vegetation crossed by the pipeline route.

The Mojave creosote-bursage community is dominated by *Larrea tridentata* (creosote bush) and *Ambrosia dumosa* (white bursage) and is the most common association of plants in the Mojave Desert, covering as much as 70 percent of the desert. This community occurs primarily on lower portions of valley floors and bajadas (geologic formations created by the lateral merging and blending of a series of alluvial fans). Other shrubs commonly occurring with these species include *Menodora spinescens* (spiny menodora), *Lycium spp.* (wolfberries), *Ephedra viridis* (Mormon tea), *Krameria spp.* (ratany), *Acamptopappus* (goldenhead), *Dalea mollissima* (dalea), and *Psilostrophe cooperi* (yellow paper daisy). Yucca and cacti are also common within the Mojave creosote-bursage community.

The sagebrush scrub community is dominated by woody species of sagebrush and is one of the most widespread vegetation communities in the intermountain lowlands (West, 1995). The sagebrush scrub community is centered in the Great Basin region of Utah, generally lacks considerable grass cover, and seldom reaches over 3 feet in height. *Artemisia spp.* (sagebrush) generally comprises about 70 percent of the vegetative cover within this community, with some perennial bunchgrasses and perennial forbs interspersed among the widely scattered sagebrush. Other woody shrubs are also common locally within the community, usually at lower densities than sagebrush.

TABLE 4.5.1-1

Vegetation Communities Occurring Along the Kern River 2003 Expansion Project Pipeline Route

Vegetation Community	General Description	Common Species	Location of Occurrence (State/Facility)
Mojave creosote-bursage	• Predominant Mojave Desert vegetation type • Occurs widely below 4,000 feet, typically in valley bottoms, lowlands, flatlands • Most common vegetation community traversed in California • May include Joshua tree woodland community • Variant of scrub communities with Joshua tree as a codominant	Creosote bush, white bursage, spiny mendora, wolfberries, Mormon tea, ratany, goldenhead, yellow paper daisy, shadscale, dalea, blackbush, Joshua tree, yucca, various cacti, burro bush, cheesebush, desert allyssum, desert mallow, storksbill, wooly plantain, desert marigolds (Joshua tree variant) Joshua tree, burro bush, cholla cacti, Mormon tea, beavertail cacti, desert allyssum, cheesebush, desert trumpet, cat's claw	UTAH Veyo Loop NEVADA Veyo Loop Dry Lake Loop 1 Dry Lake Loop 2 Goodsprings Loop CALIFORNIA Goodsprings Loop Daggett Loop
Sagebrush/sagebrush scrub	• Widespread in mountain ranges and higher valleys • Often intermixed with trees at lower margins of treeline • Encompasses salt desert scrub • Mosaic of open areas dominated by sagebrush species • May contain Utah grassland • Includes sagebrush/perennial grass, mountain shrub, and dry meadow cover types • Valleys and floodplains may contain oak woodland	(WY) Wyoming big sagebrush, mountain big sagebrush, Great Basin wild rye, cheatgrass, Indian ricegrass, crested wheatgrass, foxtail barley (UT, NV, CA) Big sagebrush, black sagebrush, low sagebrush, silver sagebrush, rabbitbrush, snakeweed, winterfat, shadscale, bitterbrush, juniper, pinyon pine, mountain mahogany, ponderosa pine, bluebunch wheatgrass, sandburg bluegrass, crested wheatgrass, needlegrass, sand dropseed, blue gramma, thurbers needlegrass, western wheatgrass, Indian ricegrass, galleta (Oak Woodland) Coastal live oak, blue oak, black oak, valley oak, California coffeeberry, poison oak, Oregon ash, aspen	WYOMING Opal Loop Muddy Creek Loop Coyote Creek Loop 1 UTAH Coyote Creek Loop 1 Coyote Creek Loop 2 Salt Lake Loop Elberta Loop Fillmore Loop Veyo Loop NEVADA Veyo Loop CALIFORNIA Goodsprings Loop

TABLE 4.5.1-1 (cont'd)

Vegetation Communities Occurring Along the Kern River 2003 Expansion Project Pipeline Route

Vegetation Community	General Description	Common Species	Location of Occurrence (State/Facility)
Agricultural lands	• Currently under production • Natural vegetation is no longer evident	Alfalfa, irrigated crops, pastures, hayfields	WYOMING Muddy Creek Loop Coyote Creek Loop 1 UTAH Coyote Creek 1 Coyote Creek Loop 2 Salt Lake Elberta Fillmore CALIFORNIA Daggett
Juniper woodland/pinyon-juniper woodland	• Generally on south-facing slopes • Often between higher elevation forests and lower elevation shrublands	Juniper, pinyon pine, mountain mahogany, limber pine, big sagebrush, Gambel oak, rabbitbrush, junegrass, cheatgrass, bluegrass	WYOMING Muddy Creek Loop UTAH Coyote Creek Loop 1 Elberta Loop Fillmore Loop Veyo Loop CALIFORNIA Goodsprings Loop
Desert saltbush scrub	• Occurs in fine sandy soils below Mojave creosote bush scrub	Common saltbush, spring saltbush, desert holly, rabbitbrush, Cooper's goldenbush, desert fiddleneck	CALIFORNIA Goodsprings Loop Daggett Loop
Blackbush scrub	• High diversity vegetation community • May contain low densities of Joshua trees and Mojave yuccas	Blackbush, Anderson's desert thorn, turpentine broom, spiny mendora, Mormon tea	UTAH Fillmore Loop Veyo Loop NEVADA Dry Lake Loop 2 CALIFORNIA Goodsprings Loop Daggett Loop
Utah grassland/desert grassland	• Often occurs intermixed with sagebrush scrub	Galleta, blue bunch wheatgrass, western wheatgrass, sandburg bluegrass, crested wheatgrass, needlegrass, sand dropseed, blue gramma, thurbers needlegrass, Indian ricegrass,	UTAH Salt Lake Loop Elberta Loop Fillmore Loop NEVADA Dry Lake Loop 2 CALIFORNIA Goodsprings Loop
Mojave mixed scrub	• Generally species-rich • Closely related to creosote bush scrub - Joshua tree community	Mojave yucca, creosote bush, white bursage, Mormon tea, shadscale, Joshua tree, barrel cactus, chollas, beavertail cacti, hedgehog cactus	NEVADA Dry Lake Loop 1 Goodsprings Loop CALIFORNIA Goodsprings Loop

TABLE 4.5.1-1 (cont'd)

Vegetation Communities Occurring Along the Kern River 2003 Expansion Project Pipeline Route

Vegetation Community	General Description	Common Species	Location of Occurrence (State/Facility)
Riparian woodlands	• Includes shrub-dominated riparian areas and wetlands • Freshwater is usually near the surface • Occurs in many elevations, often associated with perennial streams • Species vary dependent on elevation	Willow, alder, thinleaf alder, cottonwood, Fremont cottonwood, wild plum, tamarisk, narrowleaf, water birch, black hawthorn, Rocky Mountain maple, red-osier dogwood, salt cedar, netleaf hackberry, velvet ash, desert willow, sandbar willow, squawbush, wild rose, shrubby cinquefoil, timothy, Great Basin wild rye, reedgrass, wheatgrass, waterleaf, helleborine, horsetail, sedges, spike rush, buttercup, mammoth wild rye, tansy, yarrow	WYOMING Opal Loop Muddy Creek Loop UTAH Coyote Creek Loop 1 Coyote Creek Loop 2 Salt Lake Loop Elberta Loop Fillmore Loop CALIFORNIA Goodsprings Loop
Desert scrub	• Dominated by saltbush • Can be either open or dense • Similar to shrub species in the salt desert scrub community	Four-wing saltbush, shadscale, mat-atriplex, greasewood, blackbush, sagebrush, castle valley clover, galleta, Indian ricegrass, three-awn, sand dropseed	WYOMING Opal Loop Muddy Creek Loop
Greasewood scrub	• Occurs in a variety of habitats • Typically found on flats and fans in central and western basins in Wyoming	Black greasewood, Gardner's saltbush, spiny saltbush, Indian paintbrush, milkvetch, big sagebrush, Indian ricegrass	UTAH Salt Lake Loop Fillmore Loop

Of the nine additional vegetation communities crossed by the pipeline route, the agricultural community is the most common, comprising about 6 percent of the route. This community differs from the other vegetation types in that natural vegetation is no longer present.

The next most prominent communities, each comprising about 6 percent of the pipeline route, are juniper woodland/pinyon-juniper woodland, desert saltbush scrub, blackbush scrub, and Utah grassland/desert grassland. The juniper woodland/pinyon-juniper woodland community is dominated by one of several *Juniperus spp.* (juniper) and may also include *Pinus edulis* (pinyon pine). The desert saltbush scrub community is dominated by several species of *Atriplex spp.* (salt bush) and is located on soils that tend to be alkaline, saline, or both. Blackbush scrub is dominated by *Coleogyne ramosissima* (blackbush) and may also include *Lycium andersoni* (Anderson's desert thorn). Within this community, *Yucca brevifoila* (Joshua trees) and *Yucca schidigera* (Mojave yuccas) may occur at lower elevations while junipers and pinyon pines may occur at higher elevations. Utah grasslands/desert grasslands are dominated by grass species such as *Hilaria jamesii* (galleta), *Agropyron spicatum* (blue bunch wheatgrass), and *Agropyron smithii* (western wheatgrass) with widely scattered shrub species.

The remaining communities, Mojave mixed scrub, riparian woodland, desert scrub, and greasewood scrub, comprise 3, 2, 1, and less than 1 percent, respectively, of the pipeline route. Mojave mixed scrub is similar to the Mojave creosote-bursage community but has greater species diversity with species including Mojave yuccas and Joshua trees. The riparian woodland community is made up of plants requiring access to perennial water sources and often tolerating saturated soils; this community includes upland as well as wetland vegetation. Species common to riparian woodland communities include: *Salix spp.* (willow), *Alnus spp.* (alder), *Populus spp.* (cottonwood), *Rosa spp.* (wild rose), *Hydrophyllum spp.* (waterleaf), *Equisetum hyemale* (horsetail), and *Carex spp.*(sedges). Riparian communities are considered valuable because of the high quality habitat they provide and are discussed in section 4.5.3. The desert scrub community is usually dominated by one or two species of saltbush and is often associated with *Sarcobatus vermiculatus* (greasewood) and blackbush. The greasewood scrub community is dominated by greasewood but can also be a mixture of *Atriplex gardneri* (Gardner's saltbush) and *Atriplex confertifolia* (spiny saltbush).

4.5.1.2 Aboveground Facilities

The Coyote Creek Compressor Station and associated powerline would be constructed in an area of sagebrush scrub. The Salt Lake Compressor Station and associated powerline would be constructed on undeveloped pasture and cropland with a vegetative cover consisting of native and non-native herbaceous species. The Dry Lake Compressor Station and associated powerline would be constructed in an area within the Mojave creosote-bursage community.

With the exception of the Veyo Compressor Station, construction activities associated with the existing compressor and meter station modifications would occur within the boundaries of existing facilities and would not affect natural vegetation communities. At the existing Veyo Compressor Station site, about 4 acres of disturbance would occur outside the boundary of the site on land previously disturbed during construction of the station.

4.5.2 General Impact and Mitigation

4.5.2.1 Pipeline Facilities

The primary impact of the project on vegetation would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. The degree of impact would depend on the type and amount of vegetation affected, the rate at which the vegetation would regenerate after construction, and the

frequency of vegetation maintenance by the pipeline company during operation. Although existing vegetation would be disturbed everywhere along the right-of-way, a large amount of this vegetation (about 53 percent) would be within the area that was disturbed during the construction of KRGT's existing pipeline. In general, the swath of previously undisturbed vegetation that would be cleared for the proposed project would be between 25 feet and 75 feet wide.

Secondary effects associated with disturbances to vegetation could include increased soil erosion (see section 4.2.3.1), increased potential for the introduction and establishment of invasive weedy species (see section 4.5.4), and a local reduction in available wildlife habitat (see section 4.6.1).

Construction would disturb a total of about 9,282.4 acres of vegetation. Because the new right-of-way overlaps the existing right-of-way to a large extent, 4,956.1 acres (53 percent) of the total vegetation disturbance has been previously disturbed. Table 4.5.2-1 (page 4-82) lists the amount of each vegetation community that would be affected by construction of the project. The two most common vegetation types along the project corridor, Mojave creosote-bursage (3,158.2 acres) and sagebrush/sagebrush scrub (2,906.1 acres), collectively account for about two-thirds of the vegetation that would be cleared by construction.

The removal of desert vegetation would have a long-term impact. The arid environment of this region is not conducive to plant growth and regeneration of vegetation following construction would be slow. Moreover, because of the dryness of these areas, regeneration by actively seeding or planting is typically ineffective. Natural regeneration of these areas would take several years. Depending on the availability of water, regeneration of creosote and woodland in the desert could take over 50 years.

Construction through agricultural areas would have a short-term impact. Cultivated areas are regularly disturbed, receive ample water through irrigation, and would quickly reestablish on the right-of-way following replanting by the landowners. Construction would disturb about 562.4 acres of agricultural land.

Although most of the vegetation types impacted by construction would take considerably longer than 3 years to revegetate to a preconstruction condition, the project would only disturb small amounts (less than 1 percent) of the affected vegetation types growing within the region. For example, the largest amount of clearing for the project would be in the Mojave creosote-bursage community, which as the dominant vegetation type covers up to 70 percent or over 23 million acres of the Mojave Desert. The amount of Mojave creosote-bursage that would be impacted by the project is 3,158.2 acres or 0.01 percent of this vegetation type. This degree of impact on vegetation would not be substantial, and therefore, would be less than significant.

KRGT has developed three strategies to minimize and mitigate impacts on vegetation. The first strategy is avoidance. To reduce impacts on vegetation, KRGT designed its route to minimize areas of dense vegetation and sensitive species. KRGT identified areas for avoidance through consultation with the BLM, the FS, and other agencies. These areas were addressed by the adoption of route alternatives that deviate from the existing pipeline such as at Cumberland Gap and the Mojave National Preserve. Additionally, minor deviations from the existing pipeline were also adopted such as the variation between MPs 79.8 and 79.9 to avoid a significant clump of Joshua trees. KRGT's plans to cross the Bear, East Branch Weber, and Weber Rivers using the HDD method would avoid nine wetlands; three wetlands would be avoided by the proposed bore crossing of the Union Pacific Railroad (see section 2.3.2).

The second strategy KRGT proposes is the permanent preservation of a significant acreage of desert vegetation as part of its efforts to compensate for impacts on desert tortoise habitat (see section 4.7.2).

TABLE 4.5.2-1

Vegetation Communities (in acres) Affected by the Construction Right-of-Way and Temporary Extra Workspaces Associated with the Kern River 2003 Expansion Project Pipeline Route a/

Facility	Mojave Creosote-Bursage	Sagebrush/ Sagebrush Scrub	Agricultural Lands	Juniper Woodland/ Pinyon-Juniper Woodland	Desert Saltbrush Scrub	Blackbush Scrub	Utah Grassland/ Desert Grassland	Mojave Mixed Scrub	Riparian Woodlands b/	Desert Scrub	Greasewood Scrub	Total
Opal Loop	0.0	16.6	0.0	0.0	0.0	0.0	0.0	0.0	15.9	42.9	0.0	75.4
Muddy Creek Loop	0.0	601.2	28.2	30.5	0.0	0.0	0.0	0.0	19.6	89.4	0.0	768.9
Coyote Creek Loop 1	0.0	431.4	10.6	3.9	0.0	0.0	0.0	0.0	3.1	0.0	0.0	449.0 c/
Coyote Creek Loop 2	0.0	27.6	32.9	0.0	0.0	0.0	0.0	0.0	32.5	0.0	0.0	93.0
Salt Lake Loop	0.0	281.4	265.3	7.1	0.0	0.0	134.5	0.0	5.0	0.0	7.3	700.6
Elberta Loop	0.0	524.0	164.3	109.8	0.0	0.0	174.7	0.0	55.6	0.0	0.0	1,028.4
Fillmore Loop	0.0	966.5	54.6	370.1	0.0	55.9	185.0	0.0	25.4	0.0	9.8	1,667.3
Veyo Loop	1,015.4	35.7	0.0	13.4	0.0	339.7	0.0	0.0	0.0	0.0	0.0	1,404.2
Dry Lake Loop 1	183.5	0.0	0.0	0.0	0.0	0.0	0.0	34.3	0.0	0.0	0.0	217.8
Dry Lake Loop 2	140.2	0.0	0.0	0.0	0.0	89.5	9.2	78.4	0.0	0.0	0.0	317.3
Goodsprings Loop	1,318.5	21.7	0.0	5.0	20.7	33.8	9.3	135.3	6.1	0.0	0.0	1,550.4
Daggett Loop	500.6	0.0	6.5	0.0	503.0	0.0	0.0	0.0	0.0	0.0	0.0	1,010.1
Project Total	3,158.2	2,906.1	562.4	539.8	523.7	518.9	512.7	248.0	163.2	132.3	17.1	9,282.4

a/ Vegetation impacts associated with access road modifications are not included. KRGT would use only existing gravel and/or dirt roads to access the construction right-of-way. Road modifications would primarily occur over the existing road width and impacts on vegetation at these locations would be minimal.

b/ Includes the following plant communities: shrub-dominated riparian, mountain riparian, lowland riparian, alkali playa, and wetland.

c/ Includes vegetation affected by the Anschutz Lateral.

The third strategy that KRGT would employ is the implementation of its site-specific Reclamation Plans. KRGT has developed separate plans for each of the four states crossed by the pipeline and a fifth plan for the Dixie National Forest. These plans are based on the original reclamation plans that were prepared for the construction of KRGT's existing pipeline but include updated technical standards and incorporate modifications/improvements to address comments from the various land and resource management agencies about the adequacy of the previous plans. Specifically, these plans incorporate recent recommendations received from state BLM and NRCS offices, the Pine Valley and Cedar City Ranger districts within the Dixie National Forest, the CDFG, and the FWS. KRGT also reviewed several successful desert restoration projects and adopted treatments from those projects where applicable and practical including: the salvage and transplantation of succulent species; the use of Dri-Water™ (a time-release gel generally consisting of starch-based substances that hold water and allow for its slow release over a period of time); salvage of perennial shrubs for use in specific areas of high visibility, special use areas, and riparian areas; topsoil segregation; salvage of cut vegetation and rocks to be used as mulch; and soil scarification. A more detailed description of these methods and their application is presented in the description of the site-specific Reclamation Plans below.

Each of the five site-specific Reclamation Plans prescribes a variety of reclamation treatments to reduce or mitigate impacts on vegetation. The treatments between plans vary depending on the terrain, climate, native vegetation type, and recommendations from the applicable land and resource management agencies. The following treatments, however, would be common throughout the project area.

- Before construction, an inspection of the right-of-way would be made by one or more reclamation specialist(s). The locations of vegetation useful for transplanting to specified high visibility areas, special use areas, and riparian areas would be flagged. Individual plants that are determined suitable for transplanting would be removed from the right-of-way and stored for use during restoration in areas specified in the site-specific Reclamation Plans.

- Topsoil segregation would be conducted in accordance with KRGT's UECRM Plan or as requested by the land management agency/landowner (see section 4.2.3.1 for additional discussion concerning topsoil segregation). The maximum depth of topsoil to be segregated differs between each plan.

- In areas where topsoil segregation would not be conducted (*i.e.,* the working side of the right-of-way where the trench plus spoilside topsoil segregation method is used, the spoilside of the right-of-way where the trench plus working side method is used, and the entire right-of-way width in areas where no topsoil segregation is conducted), the vegetation would be mowed, scalped, or crushed, leaving plant root systems intact. Native vegetation removed would be retained for use as mulch during restoration activities. The remaining plant root systems would aid in holding the undisturbed topsoil in place, aid in moisture retention, help to retain organic matter within the soil, and potentially provide a seed source. The width of surface disturbance would be kept to a minimum in order to maximize the benefit of this treatment. This treatment would aid in minimizing soil disturbance, which would improve the restoration potential of disturbed areas.

- Surface rock, where present and appropriate for restoration activities, would be conserved during construction and spread over the topsoil during restoration to visually blend disturbed and undisturbed areas or for erosion control. In desert areas where a surface varnish is present, large rocks and boulders would be placed to face the varnish side upwards. Rock mulching would aid in stabilizing disturbed soils, reducing erosion, and minimizing visual impacts. Stockpiled surface rock may also be used as mulch where appropriate for the terrain or habitat type.

- Severely compacted soils (except sandy soils) would be scarified to a depth of 6 inches. The need for scarification would be determined by an EI, in conjunction with the agencies' compliance monitor. This treatment would mitigate soil compaction caused by construction.

- Recontouring would occur in all treatment areas. The contours would be reshaped following backfilling of the trench and replacement of the topsoil to restore preconstruction contours and natural drainage patterns. This treatment would reduce erosion and minimize visual impacts.

- Imprinting of soils would be conducted in most areas. Following the respreading of topsoil and mulching, the disturbed area would be driven over by an imprinting device such as a sheepsfoot (or other equipment). Small depressions would be made in the soil surface in a non-directional pattern. Exceptions to this treatment would be areas where imprinting is not deemed beneficial or in areas inaccessible to equipment. Examples of areas where imprinting would not be conducted include dry washes, wetland/riparian areas, and steeply sloped banks. Imprinting would aid in the collection of water, windblown seeds, and organic matter and would help to firm the soil surface and reduce the potential for wind and water erosion.

- Seeding would occur throughout the disturbed areas of the project. Within the Mojave Desert, a portion of the seed would be pelletized to add macrobiotic components developed specifically for Mojave Desert habitats.

- In desert areas, KRGT would salvage and transplant Joshua trees, yucca, cactus, and agave. Before construction, these species would be identified, removed, heeled-in, and irrigated in areas outside of the construction right-of-way, and then transplanted back onto the right-of-way as part of restoration activities. KRGT would locate transplant sites randomly along the right-of-way and/or at locations specified by the BLM. The north orientation of all cactus to be salvaged would be recorded and restored at the time of transplanting. KRGT would water the transplants at the time of initial planting. A second watering would occur 1 to 2 weeks following transplanting. KRGT proposes to use time release gels such as Dri-Water™ in the transplanting of succulent species to improve the success rate over its previous efforts. These time-release gels generally consist of starch-based substances that hold water and allow for its slow release over a period of time (typically 90 days).

  Because of the difficulty in handling larger specimens, Joshua trees over 6 to 8 feet in height and cholla cactus over 3 feet in height would not be transplanted but would be placed on the right-of-way during restoration and used as vertical mulch. Smaller species, such as button cactus and agave less than 6 inches in height, would be considered too small to feasibly transplant and would be used as vegetative mulch. The transplants that do not survive would also be beneficial to the reclamation process as vertical mulch. Vertical mulching would encourage the recruitment of native seeds, provide forage and cover habitat for native species, discourage colonization by invasive or exotic species, and reduce off-highway vehicle (OHV) use along the right-of-way. The processes of identification, removal, storage, and transplanting would be under the direction of a contracted reclamation specialist. KRGT would perform an accounting of all succulents to be disturbed along the right-of-way, to document the plants' treatment (*i.e.*, as either transplants or as vertical mulch). KRGT would provide a summary of this information to the FERC, the BLM, and the CDFG in California for review.

- Specific areas designated as visually sensitive would receive additional treatments to mitigate visual impacts (see section 4.8.7.2). These treatments would include transplanting of species salvaged from the right-of-way. In the mountains, high desert, and forested areas, transplanted species may include pinyon pine and juniper. These areas may also be planted

with containerized plants, rootings, or cuttings. The species would be selected to complement the adjacent vegetation. In the desert areas, transplanted species would be limited to salvaged Joshua trees, cactus, agave, and yucca. In these areas, an emphasis would be placed on preserving the existing rock mulch and ensuring the desert varnish is exposed. Other treatments in visually sensitive areas may include the rebuilding of rimrock or the restoration of rockfaces. The different treatments would be employed on a site-specific basis in consideration of the visual classification, and the specific requirements of the land management agency or the landowner. KRGT's stated goal is to return the land to its predisturbance appearance within 5 years. Restoration of the Mojave desert areas to predisturbance appearance, however, would likely take a longer time.

- Riparian/wetland crossings would be restored as quickly as possible following construction. Where excessive scouring is expected, banks would be armored with riprap. Riprap would extend above the high waterline and would be backfilled with topsoil and revegetated. Cuttings and rootings would be used to revegetate riparian woodlands in addition to the proposed seeding.

- Measures would be taken to protect the right-of-way restoration efforts through natural and man-made barriers and signage where past problems have occurred on the pipeline.

- Monitoring would begin 1 year following construction and continue annually. The length of the monitoring period varies by vegetation type. In general, monitoring in Wyoming, non-desert areas of Utah, and the Dixie National Forest would occur for 5 years following construction. The monitoring period for desert areas, including the southern part of Utah, and all parts of Nevada and California, would occur for 6 years. Monitoring data would be collected through field visits and aerial surveys. Success criteria would vary by state (see the site-specific discussion below). Annual reports would be provided to the appropriate agencies.

  Where the results of the annual monitoring indicate that the success criteria are not being met, remedial action would be taken. Areas where restoration is noted as being unsuccessful (*e.g.*, areas of active erosion, poor vegetative cover, or noxious weed infestation) would be identified by milepost. These locations and any remedial actions taken would be documented in reports that would be provided to the BLM, the FERC, the CSLC in California, and other appropriate land and resource management agencies within 3 months following the inspections. Remedial actions would include additional seedbed preparation, temporary grazing exclusion fencing, reseeding, and replanting. The treatments employed would be determined on a site-specific basis and in consultation with the landowner or land management agency and the applicable resource management agency. Should the success criteria not be met by the end of the monitoring period, KRGT would coordinate with the landowner or land management agency, the applicable resource management agency, and the CSLC in California to take corrective actions as appropriate. Coordination with these agencies could include extending the monitoring period until success is obtained.

These measures would reduce general impacts on most vegetation communities to less than significant levels. Impacts would be further reduced by the implementation of the site-specific mitigation measures discussed below. Vegetation communities of special concern or value are discussed in section 4.5.3.

Wyoming

The Wyoming Reclamation Plan covers the pipeline route in Wyoming. KRGT would segregate up to 12 inches of topsoil. KRGT would reduce the depth of topsoil segregation to 6 inches where shallow soils or soils with stony subsoils occur. Where soils have a high content of cobble, rocks, or boulders, topsoil

segregation may not occur. Rock brought to the surface during trenching operations on BLM or agricultural lands would be either backfilled in the trench or removed to an approved area. KRGT would conduct seeding throughout the state using the species and application rates determined in consultation with the BLM and the NRCS (see table 4.5.2-2 (below)). Seed would be purchased commercially, and tested or certified to ensure compliance with Federal and state seed requirements. KRGT would only use locally adapted ecotypes of native shrub seed. KRGT would perform remedial actions as necessary following post-construction monitoring. These actions may include reseeding, replanting, supplemental mulching, and livestock fencing depending on the requirements of the individual site.

TABLE 4.5.2-2

Plantings Prescribed for Wyoming

Species	Native Species	Application Rate/Spacing a/
Desert Scrub b/		
Seed Mix		
Slender wheatgrass - Pryor	√	4 lbs/acre
Thickspike wheatgrass – Critana	√	3 lbs/acre
Indian ricegrass - Nezpar	√	3 lbs/acre
Lewis flax - Apar	√	1 lb/acre
Palmer penstemon	√	1 lb/acre
Four-wing saltbush	√	2 lbs/acre
Forage kochia		1 lb/acre
Desert Scrub Alternate Species		
Bottlebrush squirrel tail	√	1 lb/acre
Sand dropseed	√	1 lb/acre
Alkali situation	√	1 lb/acre
Sandberg bluegrass	√	0.75 lb/acre
Sagebrush Scrub/Juniper Woodland c/		
Seed Mix		
Slender wheatgrass - Pryor	√	4 lbs/acre
Thickspike wheatgrass - Critana	√	3 lbs/acre
Indian ricegrass - Nezpar	√	3 lbs/acre
Bottlebrush squirreltail	√	2 lbs/acre
Big sagebrush - Wyoming	√	2 lbs/acre
Serviceberry	√	1 lb/acre
Sagebrush Scrub Alternate Species		
Great Basin wildrye	√	2 lbs/acre
Wetland and Riparian Woodlands d/		
Seed Mix		
Slender wheatgrass - Pryor	√	6 lbs/acre
Streambank wheatgrass - Critana	√	8 lbs/acre
Creeping foxtail - Nezpar		4 lbs/acre
Great Basin wildrye	√	3 lbs/acre
Timothy		2 lbs/acre
Cuttings and Rootings		
Willow (cuttings)	√	10-foot centers
Cottonwood (rooted cuttings)	√	Average of 15-foot centers
Aspen (rootings)	√	Average of 10-foot centers
Fertilizer		
16-20-0-13		200 lbs/acre

a/ Seeding rates are listed as pure live seed based on drill seeding. The rate would be doubled if hydroseeded or broadcast.

b/ Shrubs that may be planted in visually sensitive areas include greasewood and big sagebrush.

c/ Shrubs that may be planted in visually sensitive areas include forage kochia, winterfat, four wing saltbush, big sagebrush, and rubber rabbitbrush.

d/ Sheep fescue, basin or Russian wildrye, tall wheatgrass, and needle and thread grass may be used according to local conditions. Species of chokecherry, snowberry, elderberry, serviceberry, and sagebrush may be added to mitigate visual impacts.

Revegetation efforts would be considered successful 1 year after construction if a 3 percent cover of desirable species is achieved over 80 percent of the right-of-way. Revegetation efforts would be considered successful in the second year if a 10 percent cover is achieved over 80 percent of the right-of-way. The success criteria would increase by 10 percent each year until the fifth year when revegetation would be considered successful if 40 percent cover is achieved over 80 percent of the right-of-way. Revegetation efforts for woody plants used for visual or habitat restoration in riparian areas would be considered successful when an 80 percent survival rate is achieved. Annual monitoring reports would be provided to the FERC and the BLM.

Utah

The Utah Reclamation Plan covers the pipeline route in Utah with the exception of the Dixie National Forest, which is covered under a separate plan. Topsoil segregation in Utah would be the same as described for Wyoming. Rock brought to the surface during trenching operations on agricultural lands would be disposed of at an approved area. Seeding would be conducted throughout the state. Seeded species and application rates have been determined in consultation with the BLM and the NRCS (see table 4.5.2-3 (page 4-88)). Seed would be acquired from commercial seed producers, meet state seed laws, tested for germination and purity by a certified tester, and used within 9 months of testing. Seed species for desert habitats, beginning at about MP 418.5, would be acquired from local sources in southern Utah and Nevada. Transplanted succulents (*i.e.,* Joshua trees, yucca, cactus, and agave) would enhance the revegetation efforts in desert habitats.

In desert tortoise critical habitat areas, cattle grazing would be controlled or eliminated from the right-of-way. Where necessary, Permeon™ would be applied to site-specific areas to enhance the natural desert varnish. Seed species used for these areas would be the same as proposed for the Mojave Desert in Utah and would be collected within or in the vicinity of desert tortoise critical habitat areas. Seed bag tags would be saved and submitted to the jurisdictional agencies within 30 days after completion of seeding. Signs would be installed at locations identified by the BLM or the FWS to deter OHV use in all restored areas of desert tortoise critical habitat (see section 4.8.6.2 for additional discussion on OHV control).

In non-desert habitats, revegetation efforts would be considered successful 1 year after construction if a 3 percent cover of desirable species is achieved over 80 percent of the right-of-way. Revegetation efforts would be considered successful in the second year if a 10 percent cover is achieved over 80 percent of the right-of-way. The success criteria would increase by 10 percent each year until the fifth year when revegetation would be considered successful if up to 40 percent cover is achieved over 80 percent of the right-of-way. Revegetation efforts for woody plants used for visual or habitat restoration in riparian areas would be considered successful when an 80 percent survival rate is achieved.

For desert habitats, KRGT has adopted qualitative and quantitative procedures and protocols from the BLM's *Draft Restoration Success Standards and Monitoring Plan* (BLM, 2001a). In addition to percent cover, qualitative monitoring in the first 5 years following construction would assess soil erosion, natural recruitment of native plant species, exotic plant species, and animal use. Additional quantitative monitoring would occur in the sixth year following construction. Revegetation efforts would be considered successful in the Mojave Desert and desert tortoise critical habitat if in the sixth year following construction, cover, density, and the richness of native perennial vegetation is equal to or exceeds 60 percent for these parameters in undisturbed reference areas. Annual monitoring reports would be provided to the FERC, the BLM, and the FS.

TABLE 4.5.2-3

Plantings Prescribed for Utah

Species	Native Species	Application Rate/Spacing a/
Sage Bush Scrub and Pinyon-Juniper Woodland b/		
Seed Mix		
Crested wheatgrass – Ephraim		4 lbs/acre
Intermediate wheatgrass – Oahe		2 lbs/acre
Lincoln smooth brome		4 lbs/acre
Pubescent wheatgrass – Luna		1 lb/acre
Small burnett		0.5 lb/acre
Lewis flax – Apar	√	1 lb/acre
Alfalfa		1 lb/acre
Yellow sweetclover		1 lb/acre
Antelope bitterbrush	√	1 lb/acre
Indian ryegrass	√	1 lb/acre
Four-wing saltbush	√	1 lb/acre
Antelope bitterbrush	√	1 lb/acre
Sage Bush Scrub and Pinyon-Juniper Woodland (for Beaver and Iron Counties) b/		
Seed Mix		
Crested wheatgrass – Ephraim		1 lb/acre
Sandberg bluegrass	√	0.5 lb/acre
Sand dropseed	√	0.25 lb/acre
Galleta grass	√	1 lb/acre
Indian ricegrass-Nezpar	√	2 lbs/acre
Blue bunch wheatgrass	√	1 lb/acre
Alfalfa-Ladak		1 lb/acre
Small burnet		1 lb/acre
Yellow sweetclover		0.25 lb/acre
Lewis flax	√	1 lb/acre
Gooseberry leaf globemallow	√	1 lb/acre
Palmer penstemon	√	1 lb/acre
Antelope bitterbrush	√	1 lb/acre
Four-wing saltbush	√	1 lb/acre
Wyoming or Hobble Creek sagebrush	√	0.5 lb/acre
Non-Saline/Alkaline Wetland and Riparian Woodland Communities c/		
Seed Mix		
Timothy		1 lb/acre
Basin wildrye	√	2 lbs/acre
Creeping foxtail		1 lb/acre
Reed canarygrass		1 lb/acre
Cuttings and Rootings		
Willow (cuttings)	√	Average of 10-foot centers
Red osier dogwood (rooted cuttings)	√	Average of 15-foot centers
Aspen (rootings)	√	Average of 10-foot centers
Saline Alkaline Wetland Communities d/		
Seed Mix		
Shadscale saltbrush	√	3 lbs/acre
Gardner saltbush	√	3 lbs/acre
Greasewood	√	4 lbs/acre
Alkali sacaton	√	2 lbs/acre
Inland saltgrass	√	2 lbs/acre
Forage kochia		2 lbs/acre
Tall wheatgrass - Jose		2 lbs/acre
Desert Scrub and Blackbush Scrub Communities e/		
Seed Mix		
Crested wheatgrass (Ephraim)		2 lbs/acre
Russian wildrye - Vinal	√	2 lbs/acre
Indian ricegrass - Nezpar	√	2 lbs/acre

TABLE 4.5.2-3 (cont'd)

Plantings Prescribed for Utah

Species	Native Species	Application Rate/Spacing a/
Lewis flax - Apar	√	2 lbs/acre
Four-wing saltbush	√	3 lbs/acre
Forage kochia		1 lb/acre
Winterfat	√	1 lb/acre
Desert Scrub and Blackbush Scrub Communities (for Beaver and Iron Counties) e/		
Seed Mix		
Crested wheatgrass	√	1 lbs/acre
Indian ricegrass - Nezpar	√	2 lbs/acre
Bottlebrush squirreltail	√	2 lbs/acre
Sand dropseed	√	0.25 lb/acre
Lewis flax	√	1 lb/acre
Gooseberry leaf globemallow	√	1lb/acre
Palmer penstemon	√	1lb/acre
Forage kochia		0.5 lb/acre
Four-wing saltbush	√	2 lbs/acre
Winterfat	√	1 lb/acre
Greasewood Shrub Communities f/		
Seed Mix		
Tall wheatgrass - Jose		3 lbs/acre
Crested wheatgrass - Ephraim		1 lb/acre
Intermediate wheatgrass - Oache		1 lb/acre
Thickspike wheatgrass - Critana	√	1 lb/acre
Red fescue		1 lb/acre
Russian wildrye - Venal		2 lbs/acre
Four-wing saltbush	√	3 lbs/acre
Forage kochia		2 lbs/acre
Utah Grassland Communities		
Seed Mix		
Crested wheatgrass - Ephraim		4 lbs/acre
Forage kochia		1 lb/acre
Indian rice grass	√	2 lbs/acre
Russian wildrye - Vinall		2 lbs/acre
Galleta grass	√	1 lb/acre
Winterfat	√	2 lbs/acre
Yellow sweetclover		1 lb/acre
Alfalfa - dryland		1 lb/acre
Oak Woodland Communities g/		
Seed Mix		
Intermediate wheatgrass - Oache		4 lbs/acre
Lincoln smooth brome		3 lbs/acre
Meadow brome - Regar		3 lbs/acre
Orchardgrass - Potomac		2 lbs/acre
Bitterbrush	√	1 lb/acre
Alfalfa		1 lb/acre
Fertilizer		
16-20-0-13 h/		200 lbs/acre
Mojave Desert and Desert Tortoise Critical Habitat		
Seed Mix		
Galleta grass	√	3 lbs/acre
Indian ricegrass	√	3 lbs/acre
Desert globemallow	√	1.5 lbs/acre
White brusage	√	3 lbs/acre
Creosote	√	1 lb/acre
Nevada ephedra	√	2 lbs/acre
Four-wing saltbush	√	2 lbs/acre

TABLE 4.5.2-3 (cont'd)

Plantings Prescribed for Utah

Species	Native Species	Application Rate/Spacing a/

a/ Seeding rates are listed as pure live seed based on drill seeding. The rate would be doubled if hydroseeded or broadcast. The seed mix may be modified based on site-specific conditions, identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability and cost. An alternative seeding rate may be applied in areas deemed appropriate by the BLM or the landowner.

b/ Shrub and tree species that are appropriate for transplanting to mitigate visual impacts of this vegetation type include rabbitbrush, skunkbush, bitterbrush, fourwing saltbush, winterfat, cliffrose, serviceberry, Utah juniper, and pinyon pine. Black sagebrush may be substituted for fourwing saltbush. At the request of the BLM, seed in Beaver and Iron Counties would be treated with Germ-N-8™ to enhance germination, root development, and vigor.

c/ Shrub species that are appropriate for transplanting to mitigate visual impacts of this vegetation type include Ninebark, chokecherry, snowberry, elderberry, serviceberry, and sagebrush.

d/ Species that are appropriate for transplanting to mitigate visual impacts of this vegetation type include rabbitbrush, shadscale, greasewood, and iodine bush. Rhizomes of inland saltgrass also can be transplanted to minimize visual concerns.

e/ Shrub species that are appropriate for transplanting to mitigate visual impacts of this vegetation type include redbud, sagebrush, fourwing saltbrush, big sagebrush, winterfat, rabbitbrush, and greasewood. At the request of the BLM, seed in Beaver and Iron Counties would be treated with Germ-N-8™ to enhance germination, root development, and vigor.

f/ Possible substitutions or additions include rabbitbrush, Gardner saltbrush, alkali sacaton, and basin wildrye.

g/ Yellow sweetclover or cider milkvetch may be substituted for alfalfa. Other possible substitutions or additions include western wheatgrass, bluebunch wheatgrass, and serviceberry. Shrub species that are appropriate for transplanting or mitigating visual impacts of this vegetation type include gamble oak (planted as root masses or acorns), chockberry, serviceberry, and bitterbrush.

h/ Fertilizer is to be applied in conjunction with all seed mixtures with the exception of the Mojave Desert.

Dixie National Forest

The Reclamation Plan for the Dixie National Forest covers the pipeline route between MPs 382.5 and 404.1. Topsoil segregation requirements would be the same as for Wyoming and Utah. KRGT would dispose of rock brought to the surface during trenching operations in agricultural lands at an approved area. Seeding would be a part of the revegetation efforts throughout the Dixie treatment area where topsoil or surface fines are available. Seed would be applied using a rangeland seed drill with the exception of areas where drill seeding would be unsafe or physically impossible; in these locations seed would be broadcast. Seeded species and application rates have been determined in consultation with the reclamation specialists from the Dixie National Forest (see table 4.5.2-4 (below)). Seed would be acquired from commercial seed producers and would be certified or tested before application to meet Federal and state seed requirements. Additional restoration treatments are prescribed for Hiway Spring, Magotsu Creek, and Moody Wash. Reestablishment of rock ledges and willow plantings at Hiway Spring, and boulder placement and bank armoring at Magotsu Creek and Moody Wash would be coordinated with the FS. Disturbed riparian areas may be revegetated with willow cuttings from local riparian areas as required by District Rangers. KRGT would perform remedial actions including reseeding, replanting, supplemental mulching, and livestock fencing.

Revegetation efforts would be considered successful 1 year after construction if a 3 percent cover of desirable species is achieved over 80 percent of the right-of-way. Revegetation efforts would be considered successful in the second year if a 10 percent cover is achieved over 80 percent of the right-of-way. The success criteria would increase by 10 percent each year until the fifth year when revegetation would be considered successful if up to 40 percent cover is achieved over 80 percent of the right-of-way. Revegetation efforts for woody plants used for visual or habitat restoration in riparian areas would be considered successful when an 80 percent survival rate is achieved. Annual monitoring reports would be provided to the FERC and the FS.

TABLE 4.5.2-4

Plantings Prescribed for the Dixie National Forest

Species	Native Species	Application Rate/Spacing a/
Seed Mix		
Intermediate wheatgrass var. Oahe		2 lbs/acre
Pubescent wheatgrass var. Luna		3 lbs/acre
Western wheatgrass var. Rosanna	√	1 lb/acre
Indian ricegrass var. Nezpar	√	2 lbs/acre
Blue bunch wheatgrass var. Secar	√	1 lb/acre
Lewis blue flax var. Appar	√	1 lb/acre
Small burnett var. Delar		2 lbs/acre
Antelope Bitterbrush var. Vns	√	1 lb/acre
Fourwing Saltbush var. Vns	√	2 lbs/acre
Birdsfoot Trefoil var. Viking		1 lb/acre
Mountain Big Sage var Vns	√	1 lb/acre
Slender Wheatgrass var. Vns	√	2 lbs/acre
Sandberg bluegrass	√	1 lb/acre
Fertilizer		
16-20-0-13		200 lbs/acre

a/ Seeding rates are listed as pure live seed based on drill seeding. The rate would be doubled if hydroseeded or broadcast.

Nevada

The Nevada Reclamation Plan covers the pipeline route in Nevada. KRGT would segregate topsoil where grading occurs to a depth of 4 to 6 inches except where soils have a high content of cobble, rocks, or boulders. Where there is little plant growth, vegetation would be crushed rather than bladed. KRGT would

dispose of rock brought to the surface during trenching operations in agricultural areas at an approved area. In non-agricultural areas, KRGT may distribute excess rock on the surface in a manner that matches natural conditions or use it to create berms as OHV control. Where caliche material is present in the subsoil, KRGT would bury the material within the subsoil or remove it to an appropriate landfill. KRGT's remediation efforts in Nevada would include seeding in all disturbed areas of Nevada (see table 4.5.2-5 (below)). Salvage and transplanting of Joshua trees, yucca, cactus, and agave would occur in Nevada as described above in the description of treatments common throughout the project area. All succulents removed from the Dry Lake Compressor Station site would be relocated to a BLM-approved storage facility for holding until the material could be transplanted back on the right-of-way.

In areas of desert tortoise critical habitat, treatments would occur in Nevada in the same manner as described for desert tortoise critical habitat in Utah. Additionally, KRGT would plant shrubs and install deterrence signage adjacent to major road crossings for the purposes of OHV control in desert tortoise critical habitat. Shrub species and planting locations would be coordinated with the BLM. Additional discussion on OHV control is provided in section 4.8.6.2.

TABLE 4.5.2-5

Plantings Prescribed for Nevada

Species	Native Species	Application Rate/Spacing a/
Mojave Desert and Desert Tortoise Critical Habitat		
Seed Mix		
Galleta grass b/	√	3 lbs/acre
Indian ricegrass	√	3 lbs/acre
Desert globemallow	√	1.5 lbs/acre
White brusage		3 lbs/acre
Creosote		1 lb/acre
Nevada ephedra	√	2 lbs/acre
Four-wing saltbush	√	2 lbs/acre
Red Rock Canyon NCA and Humboldt-Toiyabe National Forest/Spring Mountains NRA		
Seed Mix		
Indian ricegrass		3 lbs/acre
Desert globemallow		0.5 lb/acre
Four-wing saltbush		2 lbs/acre
Desert needlegrass		1.5 lbs/acre
Blackbrush		5 lb/acre

a/ Seeding rates are listed as pure live seed based on drill seeding. The rate would be doubled if hydroseeded or broadcast.

b/ Substitute *Sporobolis rigida* or *Stipa speciosa* if seeds are unavailable.

In addition to desert tortoise critical habitat, the Nevada Reclamation Plan prescribes additional treatments for five sub-areas. Two of these sub-areas are the Red Rock Canyon NCA between MPs 552.0 and 557.4 and the Humboldt-Toiyabe National Forest/Spring Mountains NRA between MPs 557.4 and 558.3. Both areas would be crossed by the Dry Lake Loop 2. KRGT's proposed treatments for these two areas emphasize redistribution of rock mulch and the placement of rock clusters or outcrops to restore the natural desert varnish. KRGT would also transplant selected woody species, primarily *Coleogyne ramosissima* (black brush), creosote bush, and succulents, salvaged from the disturbed portions of the right-of-way. KRGT developed the following additional specific treatments for these areas in consultation with the BLM:

- use the seed mix developed in consultation with the BLM (see table 4.5.2-5 (above)). The seed would be collected from local sources in southern Nevada. KRGT would collect

additional seed from existing native shrub species located along the right-of-way within the Red Rock Canyon NCA and Humboldt-Toiyabe National Forest/Spring Mountains NRA during the spring of 2002. KRGT would coordinate the selection of species and collection methods with the BLM. A baseline survey would be conducted during the spring of 2002 in cooperation with the BLM to identify and inventory plant communities in order to finalize the site-specific plans for seed collection, salvage, and transplanting;

- propagate a portion of the collected native shrub seed to be grown in "tall pots" for transplanting on the right-of-way. "Tall pots" are nursery plant containers, generally 24 to 30 inches deep, that are often used for revegetation purposes because they allow for significant root development before transplanting. Propagation and growing would be conducted by a qualified nursery;

- extend restoration treatments and seeding to cover the entire existing right-of-way including areas that would be outside of the current proposed right-of-way that were disturbed by construction of KRGT's existing pipeline;

- salvage woody plants (notably black brush and creosote bush) from the construction work area that would otherwise be crushed or cleared during construction using a qualified contractor. The salvaged plants would be grown for a minimum of 4 months in containers before transplantation back onto the right-of-way. KRGT would replant the salvaged plants in natural appearing groups toward the edges of the new and existing right-of-way to break up the existing linear appearance as a primary means to mitigate residual visual impacts as well as to provide vertical habitat structure. The BLM would provide additional transplants for use within the Red Rock Canyon NCA;

- transplant additional salvaged succulents provided by the BLM on the existing right-of-way;

- treat the north-facing slope (MP 556.6) in the vicinity of Wilson Tank and the areas at MPs 557.3 and 558.2 with Permeon™ to reduce visual contrast (see section 4.8.7.1). Permeon™ may also be used in other areas as required on a case by case basis. Permeon™ is a single-step oxidation process that simulates natural desert colors. It does not contain caustic or alkaline chemicals and is not harmful to plants or wildlife. Permeon™ is applied in a single step and lasts for about 100 years on rock;

- reshape existing berms and lines of boulders across the existing right-of-way and naturally arrange and treat new berms with Permeon™; and

- increase performance standards. Restoration of the Red Rock Canyon NCA and Humboldt-Toiyabe National Forest/Spring Mountains NRA would be considered successful if plant cover, density, and richness of native perennial vegetation is equal to or exceeds 80 percent in 6 years.

The third sub-area addressed by the Nevada Reclamation Plan is dry wash crossings. These areas would require additional mitigation due to the unstable nature and increased erosion potential of wash soils. At dry washes in Nevada, KRGT would minimize the width of the native area to be disturbed and the amount of vegetation removed, topsoil segregation and imprinting would be omitted, the depth of the pipeline would be increased to a minimum of 5 feet, and banks would be armored with riprap as necessary.

The fourth sub-area discussed in the Nevada Reclamation Plan is the Meadow Valley Wash area, between MPs 473.10 to 474.60, where mesquite woodlands have been identified (see section 4.5.3). To mitigate impacts on this habitat, KRGT would seed disturbed areas with *Prosopis glandulosa* (mesquite) and *Atriplex lentiformis* (quail bush) species as requested by the BLM and the FWS. Additionally, KRGT would plant mesquite seedlings acquired from local commercial sources to enhance existing stands of mesquite.

The fifth sub-area discussed in the Nevada Reclamation Plan is the locations where special status plant species have been identified (see section 4.7.3). KRGT has developed specific reclamation treatments for three special status species: three-cornered milkvetch, yellow two-tone beardtongue, and rosy two-tone beardtongue. In the locations where these plants are identified, the area of disturbance would be kept to the absolute minimum. Plants adjacent to but outside the construction zone would be protected by flagging or fencing. Where available, seed would be collected from special status species in the local vicinity in accordance with the measures outlined in section 4.7.3. Additional discussion of the reclamation treatments that have been developed for these species is presented in section 4.7.

In Nevada the success criteria would be the same as described for Utah in desert habitats. KRGT has adopted the BLM's *Draft Restoration Success Standards and Monitoring Plan* (BLM, 2001a). Revegetation efforts would be considered successful in the Mojave Desert and desert tortoise critical habitat if in the sixth year following construction, cover, density, and the richness of native perennial vegetation is equal to or exceeds 60 percent for these parameters in undisturbed reference areas. Annual monitoring reports would be provided to the FERC and the BLM.

California

The California Reclamation Plan covers the pipeline route in California and includes treatments that are generally the same as Nevada. KRGT's treatments for dry wash crossings would be the same as in Nevada. No desert wash species (*e.g.*,desert willow, smoke trees, or mesquite) have been identified within the construction work area; however, if it is determined that any of these species would be affected by construction, KRGT would notify the CDFG before disturbance and mitigation for the affected species would be established by the CDFG. Four different seed mixes were developed specifically for California in consultation with the BLM (see table 4.5.2-6 (page 4-95)). All seed would be locally collected native species purchased from commercial vendors. KRGT would submit seed bag tags to the FERC, the BLM, the CSLC, and the CDFG confirming the species and origin of the seed. The seed would be tested or certified to ensure compliance with Federal and state seed requirements before use. Certificates of the seed analysis would also be provided to the FERC, the BLM, the CSLC, and the CDFG.

Several state-listed plant species have been identified during surveys within the right-of-way in California. KRGT has developed plans in consultation with the BLM and the CDFG to protect listed species within the project area. KRGT would:

- minimize the areas of disturbance;
- flag or fence sensitive populations adjacent to but outside the construction work area;
- monitor the segregation of topsoil; and
- collect and plant seed onto the right-of-way after construction.

Additional details regarding listed species are provided in sections 4.7.3 and 4.7.4.

TABLE 4.5.2-6

Plantings Prescribed for California

Species	Native Species	Application Rate/Spacing a/
Mojave-Creosote-Bursage Scrub		
Seed Mix		
Indian rice grass	√	1.5 lbs/acre
Galleta grass	√	1.5 lbs/acre
Wooly plantain	√	1 lb/acre
Desert marigold	√	1 lb/acre
Creosote bush	√	1.5 lbs/acre
Bursage	√	2 lbs/acre
Green Mormon tea	√	0.5 lb/acre
Desert Saltbush Scrub		
Seed Mix		
Indian ricegrass	√	1.5 lbs/acre
Stipa grass	√	1.5 lbs/acre
Lacey-leaved	√	1.0 lb/acre
Desert fiddleneck	√	1.0 lb/acre
Saltbush (Atriplex spirescens)	√	1.0 lb/acre
Saltbush (Atriplex polycarpa)	√	1.0 lb/acre
Rabbitbush	√	1.0 lb/acre
Blackbush Mixed Scrub		
Seed Mix		
Galleta grass	√	1.5 lbs/acre
Stipa grass	√	1.5 lbs/acre
Wooly plantain	√	1.0 lb/acre
Desert mallow	√	1.0 lb/acre
Bursage	√	1.0 lb/acre
Rabbitbush	√	1.0 lb/acre
Blackbush	√	1.0 lb/acre
Clark Mountains		
Seed Mix		
Stipa grass	√	1.5 lbs/acre
Indian ricegrass	√	1.5 lbs/acre
Desert marigold	√	2.0 lbs/acre
Creosote bush	√	1.0 lb/acre
Blackbush	√	1.5 lbs/acre
Nevada ephedra	√	1.5 lbs/acre

a/ Seeding rates are listed as pure live seed based on drill seeding. The rate would be doubled if hydroseeded or broadcast.

All succulent species within the disturbed areas in California would be salvaged. Fifty percent of the succulents to be salvaged, generally the individuals considered by KRGT to be too large or too small to be feasibly transplanted, would be moved to a BLM nursery. The remaining 50 percent of salvaged succulents would be transplanted back onto the right-of-way whether alive or dead to aid revegetation efforts and to provide OHV control. At the request of the BLM, all transplanted Joshua trees would be treated with Superthrive™ root hormone to promote root development. Only very large, multi-branched Joshua trees that are not feasible to plant upright would be laid down within the right-of-way. Intact, large shrubs with root crowns removed from areas of grading would be windrowed at the edge of the right-of-way and transplanted back onto the right-of-way at road crossings and visually sensitive areas during restoration. The primary benefits of using these shrubs would be as a form of vertical mulch, enhancement of visually sensitive areas, and OHV deterrence; however, some may survive. All high visibility road crossings and traveled wash crossings would receive visual mitigation treatments. Monitoring in California would be performed under the same criteria described for desert habitats in Utah and Nevada. Success criteria in California would generally be the same as described for desert habitats in other areas of the project, with the exception of desert

tortoise critical habitat. In those areas within California, restoration would be considered successful if in the sixth year following construction, cover, density, and the richness of native perennial vegetation is equal to or exceeds 70 percent for these parameters in undisturbed reference areas. Annual monitoring reports would be provided to the FERC, the BLM, the CSLC, and the CDFG.

Summary

KRGT's site-specific Reclamation Plans have been developed in consultation with the applicable land and resource management agencies. These plans include reclamation treatments, seed mixes, seed sources, success criteria, remedial actions, and monitoring and reporting requirements for all areas crossed by the project, including desert habitat. With the exception of the vegetation communities of special concern or value discussed in section 4.5.3, implementation of KRGT's UECRM Plan and its site-specific Reclamation Plans would reduce impacts on vegetation to less than significant levels.

4.5.2.2 Aboveground Facilities

The Coyote Creek Compressor Station would permanently remove about 30.9 acres of sagebrush scrub. The Salt Lake Compressor Station would permanently remove about 32.0 acres of *Gutierrezia sarothrae* (broom snakeweed), *Agropyron intermedium* (bunchgrass), *Salsola iberica* (Russian thistle), and *Bromus tectorum* (cheat grass). The Dry Lake Compressor Station would permanently remove about 22.9 acres of Mojave creosote-bursage. As stated in section 4.5.2.1, all succulents removed from the Dry Lake Compressor Station site would be relocated to a BLM-approved storage facility for holding until the material could be transplanted back onto the right-of-way. No other specific measures to mitigate impacts on vegetation at these locations would be implemented because these areas would be maintained as remote industrial sites free of vegetation. The impacts on vegetation from the proposed powerlines to each of the sites would be minimal and limited to the disturbance associated with the installation of power poles. Impacts on vegetation at aboveground facilities would be permanent but would occur either on plant communities that are common to their region or on non-native plant communities. Therefore, these impacts would not be significant.

4.5.3 Vegetation Communities of Special Concern or Value

The FWS and the BLM identified the potential for the project to affect three vegetation communities/species of special concern: yucca communities, cactus and agave communities, and mesquite woodlands. In addition, riparian communities are considered to be valuable wildlife habitat. These four vegetation communities are described below.

Yucca, Cactus, and Agave Communities

Although not considered threatened or endangered, the dominant species within yucca, cactus, and agave communities are generally protected under various Desert Native Plant Acts in the states crossed by the project. The primary intent of these acts is to prevent the unlawful harvesting of yucca, cactus, and agave. Field surveys identified areas of native yucca, cactus, and agave species along the Veyo Loop, Dry Lake Loops 1 and 2, Goodsprings Loop, and Daggett Loop.

Yucca - The genus Yucca includes about 40 species, most of which occur in the southwestern United States and Mexico. Three species of yuccas were identified along the proposed route during field surveys in 2001: *Yucca schidigera* (Mojave yucca), *Yucca baccata* (banana yucca), and *Yucca brevifoila* (Joshua trees). These yucca species are a component of the other recognized desert shrub communities, including Mojave creosote bush scrub, blackbush, and Mojave mixed scrub. Based on surveys, approximately 178.8 miles of

the proposed pipeline route crosses desert shrub communities with a yucca component, including 107.5 miles with Joshua trees present. In general, yuccas were absent from the previously disturbed right-of-way.

Cactus and Agave - As with the yucca species, cactus and agave are components of other desert shrub communities. Cacti were identified in varying densities along much of the pipeline route that crosses the Mojave Desert (242 miles out of the approximately 320 miles of desert crossed by the pipeline route). Common cactus species observed include *Opuntia basilaris* (beavertail cactus), *Opuntia echinocarpa, O. acanthocarpa var. coloradensis, O. ramos* (cholla), *Ferocactus cylindraceus* (barrel cactus), *Echinocereus engelmanii* (hedgehog), and *Echinocactus polycephalus* (clustered barrel cactus). A population of high-density *Agave utahensis* (Clark Mountain agave) was noted near MP 592.0 along the Goodsprings Loop. As with the yuccas, cacti and agave were mostly absent from the areas that had been disturbed by the previous pipeline construction.

KRGT proposes to implement specific conservation measures for yucca, cactus, and agave communities. These conservation measures include preconstruction identification of species suitable for salvage within the construction right-of-way and temporary extra workspace areas. Salvagable plants would be dug up and temporarily stored in non-construction areas. Following construction, KRGT would transplant these plants back onto the right-of-way. The discussion of the site-specific Reclamation Plans in section 4.5.2.1 contains a more detailed description of transplanting methods. Survival rates for the large plants, particularly Joshua trees, can be low; however, it is anticipated that some plants would survive. KRGT has included additional treatments to improve the success of transplanting Joshua trees, such as the use of DriWater™ time release gels and in California, the use of Superthrive™ rooting hormone. Additionally, the plants that do not survive would be beneficial to the reclamation process as vertical mulch. Vertical mulching would encourage the recruitment of native seeds, provide forage and cover habitat for native species, discourage colonization by invasive or exotic species, and reduce OHV use along the right-of-way. All succulents removed from the Dry Lake Compressor Station site would be relocated to a BLM-approved storage facility for holding until the material could be transplanted back onto the right-of-way. In California, all succulents within the disturbed area would be salvaged. Fifty percent of the succulents to be salvaged, generally the individuals considered by KRGT to be too large or too small to be feasibly transplanted, would be moved to a BLM nursery with the remaining 50 percent transplanted back onto the right-of-way.

KRGT's proposed treatments for yucca, cactus, and agave communities as described in the Utah, Nevada, and California Reclamation Plans would reduce impacts on these species. In addition, KRGT has agreed to adopt the qualitative and quantitative procedures and protocols from the BLM's *Draft Restoration Success Standards and Monitoring Plan* (BLM, 2001a). However, based on the low survival rate of these communities after the previous construction and the uncertainty of the success of KRGT's proposed transplantation efforts for these species, a long-term reduction in special concern vegetation communities could occur. Therefore, the potential impact on these species could be significant. Approval of the project would be subject to a Statement of Overriding Considerations under the CEQA due to this significant unavoidable impact that could remain after mitigation is applied.

Mesquite Woodlands

The FWS reported that Mesquite woodlands provide important habitat for many plant and animal species in the Mojave Desert. This community also provides breeding habitat for the phainopepla and Lucy's warbler, both Federal species of concern (see section 4.7). The acreage of mesquite woodlands has been steadily declining in southern Nevada and has been further impacted by recent wildfires. The BLM reported that mesquite woodlands occur near the Meadow Valley Wash between MPs 474.2 and 474.4, which is within the Moapa Habitat Management Area. Mesquite was identified along the route during field surveys near the proposed crossing location of the Muddy River (about MP 477.1) and in an agricultural field near MP 477.4.

On September 21, 2001, field surveys were conducted with the BLM and the FWS to assess the proximity of mesquite woodlands to the construction right-of-way. As a result, it was determined that no mesquite woodlands occur within the construction right-of-way near Meadow Valley Wash (between MPs 474.2 and 474.4). Both agency representatives agreed that the proposed KRGT pipeline location minimizes any potential loss of critical mesquite habitat, most of which occurs to the south of the existing pipeline. At MP 474.4, some mesquite stands were identified; however, these stands are located outside of the proposed construction right-of-way and would not be directly affected by construction. KRGT would flag any branches overhanging the right-of-way to clearly identify these trees and avoid any indirect impacts. Further, KRGT would reduce impacts on potential habitat in the Meadow Valley Wash area by removing tamarisk, seeding disturbed soils with quail bush seed, and planting mesquite seedlings to enhance existing stands of mesquite. To address the BLM's concern regarding the potential for the newly cleared right-of-way to increase OHV use, KRGT would install natural and artificial barriers using boulders and/or cleared vegetation, with an emphasis on placing visual obstructions at any existing crossings of the right-of-way (see section 4.8.6.2). Specific OHV barrier types and locations would be determined in consultation with the BLM and other landowners in the area. The agency representatives expressed no concerns regarding potential impacts on mesquite at MPs 477.1 and 477.4. The avoidance of this species, along with the protection measures for adjacent trees, removal of tamarisk, and additional seeding of mesquite and quail bush would reduce impacts on mesquite habitat to less than significant levels.

Riparian Communities

Riparian vegetation communities are important in that they provide high quality wildlife habitat that supports a greater species diversity than the more arid vegetative communities (see section 4.6). The riparian community is made up of several smaller communities, including shrub-dominated riparian, mountain riparian, lowland riparian, alkali playa, and wetland. The plant species within these communities vary depending on type and elevation (see table 4.5.1-1 (page 4-77)). Riparian communities would be crossed by the pipeline route in Wyoming, Utah, and Nevada.

About 163.2 acres of riparian vegetation would be affected by construction. KRGT would minimize the impact on riparian communities by crossing the Bear, East Branch Weber, and Weber Rivers using the HDD method and by implementing its WWCM Procedures (see sections 4.4.2.4 and 4.4.2.5). KRGT would not clear vegetation between temporary extra workspace areas and the edge of waterbodies and wetlands. Where the pipeline parallels but does not cross the waterbody, KRGT would attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody and the right-of-way. Where possible at wetland crossings, KRGT would cut vegetation at ground level leaving root systems in place. KRGT would also revegetate riparian areas as soon as possible with a variety of grass species, and cuttings, rootings, or shrubs. KRGT would identify the species and planting densities to be used through consultations with the BLM, the COE, the FS, and other appropriate agencies. Implementation of these measures would reduce impacts on riparian areas to less than significant levels.

4.5.4 Noxious Weeds

Noxious weeds and other invasive plants are non-native, undesirable native, or introduced species that are able to exclude and outcompete desired native species, and thereby decrease overall species diversity. Noxious weeds often invade and persist in areas after disturbance. Other aggressive plant species, both native and introduced, may also outcompete desirable native and other beneficial species. Noxious weeds are addressed by Executive Order 13112, which was set into Federal law on February 3, 1999. Under Executive Order 13112, the Federal government is required to prevent the introduction of invasive species, provide for their control, and minimize the economic, ecological, and human health impacts that invasive species cause. The order further specifies that the Federal government shall not authorize, fund, or carry out actions likely

to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless it has determined that the benefits of such actions outweigh the potential harm caused by invasive species and that all feasible and prudent measures to minimize risk of harm would be taken in conjunction with the actions.

In 2001, noxious weed surveys were conducted to identify invasive, non-native plants along the entire pipeline route, with the exception of active agricultural, industrial, and residential lands. At the request of the BLM, the surveys included a search for *Brassica tournefortii* (Asian mustard), *Sisymbrium altissimum* (tumble mustard), *Brassica nigra* (black mustard), *Descurainia sophia* (tansy mustard), *Schismus barbatus* (Mediterranean grass), *Bromus rubens* (red brome), *Bromus tectorus* (cheatgrass), and *Salsola tragus* (Russian thistle). All plants encountered along the right-of-way during the surveys were identified to the species level where possible. To account for seasonal and climatic variations along the route, KRGT supplemented this survey data with information provided by its maintenance divisions and data from inventories kept by Federal land management agencies. Additional species were identified by local county weed specialists. Table 4.5.4-1 (page 4-100) lists the noxious weed species identified and their relative density by state, loop, and milepost number. Invasive, non-native plants were identified in all four states crossed by the proposed project. Mediterranean grass populations were widespread, whereas other species tended to be more localized.

Cheatgrass was the only invasive, non-native species identified along the proposed pipeline route in Wyoming, intermittently covering between 25 and 100 percent of the right-of-way ground surface between MPs 0.0 and 56.0 of the Muddy Creek Loop. Cheatgrass was also observed (in similar densities) at MP 130.0 of the Coyote Creek Loop 2 and between MPs 192.1 and 237.8 of the Elberta Loop in Utah. Lower densities of cheatgrass, covering between 5 and 25 percent of the ground surface, were also observed between MPs 86.0 and 88.0 of the Coyote Creek Loop 1. Halogeton and Russian thistle were observed in Utah between MPs 175.0 and 190.0 on the Salt Lake Loop. Halogeton was also observed on the Elberta Loop covering between 0 and 5 percent of the right-of-way between MPs 227.8 and 227.9. Scotch thistle was observed on the Salt Lake, Elberta, and Fillmore Loops in many locations covering from 0 to 100 percent of the right-of-way. Musk thistle was observed at one location on the Salt Lake Loop (MP 187.5) and at three locations on the Elberta Loop (MPs 198.8, 202.4, and 204.1) covering between 25 and 100 percent of the right-of-way. Squarrose knapweed was observed at two locations on the Salt Lake Loop (MPs 188.2 and 191.8) and at two locations on the Elberta Loop (MPs 199.1 and 204.0) covering between 25 and 100 percent of the right-of-way.

Four genera of invasive, non-native species were identified along the proposed pipeline route in Nevada. Of these, *Schismus* was the most prevalent with *Bromus* the next most common. Occurring alone or together, species of these two genera cover between 25 and 100 percent of the ground surface of the pipeline route at MP 444.0 and between MPs 445.0 and 475.0 of the Veyo Loop. The third most prevalent genus of invasive, non-native species identified in Nevada was *Salsola*. Species of this genus cover between 5 and 25 percent of the ground surface along the pipeline route between MPs 444.0 and 446.0. *Tamarix ramissima* (tamarisk) was found covering between 25 and 100 percent of the ground surface between MPs 474.1 and 477.1.

Invasive, non-native species identified along the pipeline route in California included Russian thistle, red brome, *Schismus* species (including Mediterranean grass), cheatgrass, Asian mustard, tansy mustard, and tamarisk. Of these, Russian thistle, Mediterranean grass, and Asian mustard were the most prevalent, occurring along the Goodsprings Loop between MPs 580.0 and 681.0.

TABLE 4.5.4-1

Noxious and Non-native Invasive Weeds Identified Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Noxious Weed	Density a/
WYOMING			
Muddy Creek Loop	0.0-56.0	Cheatgrass	High
UTAH			
Coyote Creek Loop 1	86.0-88.0	Cheatgrass	Moderate
Coyote Creek Loop 2	130.0	Cheatgrass	High
Salt Lake Loop	175.0-190.0	Halogeton	NA
		Russian Thistle	NA
	187.5	Scotch Thistle, Musk Thistle	High
	188.2	Scotch Thistle, Squarrose Knapweed	High
	188.9	Scotch Thistle	High
Elberta Loop	191.8	Squarrose Knapweed	High
	192.1-237.8	Cheatgrass	High
	198.8	Musk Thistle	High
	199.1	Squarrose Knapweed	High
	202.4	Houndstounge, Musk Thistle	High
	204.0	Squarrose Knapweed	High
	204.1	Musk Thistle	High
	224.6-224.7	Scotch thistle	Moderate
	227.8-227.9	Halogeton	Low
	250.0-250.8	Scotch thistle	High
	269.7-272.5	Scotch thistle	Moderate
Fillmore Loop	284.8 - 285.1	Scotch Thistle	High
	286.4 - 286.6	Scotch Thistle	High
	289.1 - 289.8	Scotch Thistle	High-moderate
	289.9 - 291.7	Scotch Thistle	Light- moderate
	291.7 - 292.5	Scotch Thistle	High- moderate
	332.1 - 332.2	Scotch Thistle	Moderate
	389.9 - 394.0	Scotch Thistle	High-moderate
NEVADA			
Veyo Loop	443.0-444.0	*Schismus* spp.	High
	444.0-446.0	*Salsola* spp.	Moderate
	445.0-449.0	*Bromus* spp., *Schismus* spp.	High
	450.0	*Bromus* spp.	High
	450.0-451.0	*Schismus* spp.	High
	451.0-454.5	*Bromus* spp., *Schismus* spp.	High
	454.0-454.5	*Schismus* spp.	High
	464.0-465.0	*Schismus* spp.	High
	473.0-475.0 b/	*Bromus* spp., *Schismus* spp.	High
	474.1-477.1	Tamarisk	High
CALIFORNIA			
Goodsprings Loop	580.0-681.0	Russian thistle	Moderate
	580.0-594.0	Red brome	Moderate
	589.0-681.0	Mediterranean grass	Moderate-high
	590.0-590.0	Cheatgrass	Moderate-high
	590.0-681.0	Asian mustard	Moderate
	643.0	Tamarisk	Low-moderate
	676.23-677.01	Tamarisk	Low-moderate
Daggett Loop	51.0-60.0	Russian thistle, *Schismus* spp., red brome, cheatgrass, tansy mustard	High
	68.8-82.0	*Schismus* spp., red brome, cheatgrass, tansy mustard	High

a/ Low = 1% to 5% ground cover
Moderate = 5% to 25% ground cover
High = 25% to 100% ground cover

b/ A small population of *Sonchus arvensis* (sow thistle) was identified in the Moapa area; however, the specific milepost location was not available.

To account for possible data gaps in the active agricultural, industrial, or residential lands not previously surveyed, KRGT would conduct additional noxious weed surveys in 2002 in the following locations: MPs 63.0 to 68.3, MPs 87.6 to 92.5, MPs 137.4 to 154.0, MPs 160.4 to 168.5, MPs 251.7 to 269.0, MPs 278.4 to 282.1, and MPs 373.7 to 378.6.

Noxious weeds are likely to invade disturbed grounds and may continue to invade for many years after the initial disturbance. The removal of existing vegetation and the disturbance of soils during construction could create optimal conditions for the invasion and establishment of invasive, non-native species. Construction equipment traveling from weed-infested areas into weed-free areas could also facilitate the dispersal of invasive weed seeds and propagules, and result in the establishment of noxious weeds in previously weed-free areas.

Noxious weeds have proliferated in many locations on the existing right-of-way because a noxious weed plan was not implemented during construction of KRGT's existing pipeline. Therefore, there were no controls to limit the spread of weed propagules before or during construction of the existing pipeline and weeds became established. KRGT's implementation of its Noxious Weed Plan for the proposed project would avoid many of the problems encountered by its previous project. KRGT would treat both the new right-of-way and the existing right-of-way for noxious weeds where the rights-of-way are adjacent (93 percent of the route). Before construction, KRGT would provide information and training regarding noxious weed identification and control to its contractors. Existing areas of noxious weed infestation would be flagged in the field. KRGT would prohibit equipment access to areas of weed infestations until weed control measures have been implemented. Herbicides or other control methods, such as mowing or discing, would be performed by KRGT in these areas before construction to prevent the spread or proliferation of weeds. Mechanical treatments that would disturb the soil surface would be avoided in native habitats. Following the initial treatment of known infestations, KRGT would implement the following preventive measures throughout construction:

- Vehicles would be required to arrive at the work site clean and weed free. The contractor and the EI would ensure that vehicles are free of soil and debris capable of transporting weed seeds or other propagules.

- In areas with existing noxious weed infestations, vegetation, soil, and trench spoil material would be stockpiled in a location adjacent to where they were removed and following construction would be returned to their previous location.

- Following work at identified noxious weed-infested sites, the contractor would use compressed air to remove soil and propagules from machinery and vehicles before transport offsite.

- Materials used for erosion control would be obtained from state-cleared sources that are free of noxious weeds.

- Reclamation of disturbed areas would occur immediately following construction as described in the site-specific Reclamation Plans.

If noxious weeds become established following construction despite the precautions outlined above, KRGT would implement the following:

- In non-native habitats, mechanical treatments, which may include mowing or discing of weed vegetation, would be employed. Where mechanical treatments are used, subsequent seeding

would occur in accordance with the site-specific Reclamation Plans to minimize the reestablishment of weeds. Mechanical treatments that would disturb the soil surface would be avoided in native habitats.

- Herbicide applications would be either spot treatments or larger broad-scale treatments. Where broad-scale applications occur, subsequent seeding would occur in accordance with the site-specific Reclamation Plans.

KRGT's treatment of noxious weeds would be in accordance with Federal and state laws, and land management agency requirements. For sites occurring on BLM lands, KRGT would notify the appropriate BLM Field Office before implementing the treatment. The target species, method, and timing of controls would be determined in consultation with BLM personnel. KRGT would provide funds for county personnel to provide weed control services where there are cooperative agreements between the BLM and the local county. If these agreements are not in place, KRGT would perform or contract the weed control services. Under a special agreement with the BLM, KRGT would submit a Pesticide Use Proposal annually for each state crossed by the proposed pipeline. Following chemical application, KRGT would submit Pesticide Application Records.

For noxious weed infestation sites on FS lands, KRGT would notify the appropriate District Ranger office before implementing the treatment. The target species, method and timing of controls would be determined in consultation with the appropriate FS personnel. KRGT would provide funds for county personnel to provide weed control services where there are cooperative agreements between the FS and local county. If these agreements are not in place, KRGT would perform or contract the weed control services.

Once construction is complete, KRGT proposes to monitor for and treat noxious weed infestations. Noxious weed monitoring would occur concurrent with the site-specific Reclamation Plan monitoring. Monitoring would begin the year following construction and thereafter would occur every other year for 5 years. In addition, areas of known infestations would be inspected annually and treated as necessary. Monitoring data collected would include the noxious weed species, their location, and the extent of the infestation. The results of the monitoring would be provided to the local regulatory agencies (*i.e.*, the BLM, the FS, local weed districts, and the CSLC in California).

The use of herbicides to treat noxious weeds has the potential to impact environmental resources on or adjacent to the construction work area due to improper use or accidental spills. The severity of potential impacts would depend on the type and formulation of chemical used, and the method of application. Improper application of herbicides could result in chemical drift, which occurs when chemicals are applied when wind is strong enough to move the chemical beyond the target vegetation. Impacts could also occur from excessive use or a spill of the herbicide, which could allow for runoff or seepage of the chemical to non-target areas. The resulting impacts could include damage to non-target vegetation and adjacent terrestrial and biological resources, and the degradation of surface and groundwater quality.

To minimize the potential impacts associated with improper herbicide application or accidental spills, KRGT has developed specific herbicide application, handling, and cleanup guidelines. These guidelines are included in KRGT's Noxious Weed Plan. KRGT would consult with local weed districts and land management agencies to determine the appropriate product and application method. As discussed above, KRGT would use a licensed contractor or provide funds for county personnel to provide weed control services. Applications would follow EPA label instructions and be performed in accordance with Federal, state, and local laws and regulations. The measures KRGT would implement include, but are not limited to, the following:

- Suspend herbicide applications when:

  a. wind velocities exceed 6 mph for the application of liquid materials and 15 mph for the application of granular materials;

  b. ice covers the target vegetation; or

  c. precipitation is occurring or imminent.

- Only the quantity of herbicide required for 1 day of work would be transported to the construction site. Herbicides would be transported only in approved containers that would be inspected daily for leaks.

- Mixing of herbicides would be performed offsite and at a distance of 200 feet from wetlands, waterbodies, or other sensitive resources.

- All herbicide contractors would be required to maintain spill kits at herbicide storage areas and on their trucks and copies of material safety data sheets.

Implementation of KRGT's specific herbicide application, handling, and cleanup guidelines included as part of its Noxious Weed Plan would minimize the potential impacts associated with the application of herbicides to less than significant levels.

Noxious weed control would be a critical element in the restoration of the construction right-of-way. In comments on the draft EIS/EIR, the California Native Plant Society stressed the importance of treating noxious weeds before seed maturation/dispersal. Weed control before seed dispersal is most effective and would reduce the amount of chemicals and resources required for treatment. Further, noxious weed competition with desirable species can be highly detrimental to restoration efforts. KRGT's Noxious Weed Plan states that certain noxious weed species (*e.g.*,cheatgrass and Schismus species) are so widespread that control is not feasible, especially where areas adjacent to the right-of-way are similarly infested; therefore, KRGT does not plan to repeatedly treat such areas. While the Agency Staffs acknowledge that the eradication of certain weed species may not be feasible, these species must be controlled to a point that they do not create a considerable hindrance to reclamation efforts. Therefore, **the Agency Staffs recommend the following measure:**

- **<u>Before construction</u>, KRGT shall file with the FERC and the CSLC a revised Noxious Weed Plan. The revised plan shall include provisions for KRGT to:**

  a. update its list of known noxious weed infestations to include the data acquired during its noxious weed surveys conducted in 2002;

  b. treat all weeds deemed noxious by Federal, state, and/or county weed control agencies to the extent that they do not present a significant hindrance to reclamation efforts; and

  c. schedule its weed control efforts to occur before seed maturation/ development.

The implementation of KRGT's revised Noxious Weed Plan before, during, and after construction, and the treatment of the adjacent existing right-of-way, would reduce the impacts associated with the introduction of new weed species and the expansion of existing weed species to less than significant levels.

4.6 WILDLIFE AND AQUATIC RESOURCES

Significance Criteria

Adverse impact on wildlife and aquatic resources would be considered significant and would require additional mitigation if project construction or operation would:

- change the diversity or substantially alter the numbers of a local population of any wildlife or aquatic species, or interfere with the survival, growth, or reproduction of affected wildlife and fish populations;
- substantially interfere with the movement or range of migratory birds and other wildlife, or the movement, range, or spawning of any resident or anadromous fish;
- result in a substantial long-term loss of existing wildlife or aquatic habitat;
- cause substantial deterioration of existing fish habitat;
- introduce new, invasive aquatic species to an area; or
- create a potential health hazard or involve the use, production, or disposal of materials that pose a hazard to wildlife or fish populations in the project area.

4.6.1 Wildlife Resources

4.6.1.1 General Impact and Mitigation

Pipeline Facilities

The pipeline route crosses 10 major non-agricultural vegetation communities. These communities are described in section 4.5. Table 4.5.2-1 (page 4-82) lists the acres of each vegetation community that would be affected during construction and operation. Each of these communities provides nesting, cover, and foraging habitat for a variety of wildlife. Although the Mojave creosote-bursage and sagebrush scrub habitats are the most prevalent habitats along the pipeline route, riparian areas provide greater vertical structure and, along with the associated sources of water, support the most diverse faunal assemblages. A listing of the wildlife species common to each vegetation community that would be crossed by the project is provided in table 4.6.1-1 (page 4-105).

The impact on wildlife species and their habitats from construction and operation of the Kern River 2003 Expansion Project would vary depending on the requirements of each species and the existing habitat present along the pipeline route. Construction and operation of the pipeline would directly impact wildlife through disturbance, displacement, and mortality. The project would also result in short- and long-term alterations of available habitats.

TABLE 4.6.1-1

Common Wildlife Species Occurring Along the Kern River 2003 Expansion Project Pipeline Route

State	Habitat Type	Common Species
WYOMING	Sagebrush/sagebrush scrub	Mule deer, elk, pronghorn antelope, coyote, Nuttall's cottontail, deer mouse, red-tailed hawk, northern harrier, sage grouse, mourning dove, black-chinned hummingbird, Say's phoebe, horned lark, black-billed magpie, sage thrasher, house finch, green-tailed towhee, vesper sparrow, chipping sparrow, Great Basin collared lizard, western fence lizard, sagebrush lizard, side-blotched lizard, short-horned lizard, western skink, striped whipsnake, racer, night snake.
	Desert scrub	White-tailed jackrabbit, Wyoming ground squirrel, least chipmunk, bushy-tailed woodrat, Great Basin pocket mouse, red-tailed hawk, northern harrier, black-chinned hummingbird, ash-throated flycatcher, Say's phoebe, horned lark, common raven, western meadowlark, house finch, sagebrush lizard, Great Basin collared lizard, northern tree lizard, side-blotched lizard, Great Basin gopher snake, striped whipsnake.
	Juniper woodland/pinyon-juniper woodland	Elk, mule deer, desert cottontail, desert woodrat, Townsend's big-eared bat, red-tailed hawk, mourning dove, common nighthawk, black-chinned hummingbird, northern flicker, ash-throated flycatcher, Say's phoebe, common raven, house finch, pine siskin, chipping sparrow, Brewer's sparrow, sagebrush lizard, tree lizard, short-horned lizard, western skink, striped whipsnake, racer, kingsnake, wandering garter snake.
	Wetlands and riparian woodlands	Beaver, muskrat, mink, desert cottontail, pocket gopher, Great Basin pocket mouse, meadow vole, western jumping mouse, broad-tailed hummingbird, violet-green swallow, black-billed magpie, robin, European starling, yellow warbler, common yellowthroat, Brewer's blackbird, house finch, Savannah sparrow, chipping sparrow, song sparrow, Woodhouse's toad, northern leopard frog, sagebrush lizard, western skink, striped whipsnake, racer, smooth green snake, Utah milk snake, wandering garter snake.
UTAH	Sagebrush/sagebrush scrub	Species similar to those in sagebrush/sagebrush scrub habitat in Wyoming.
	Juniper woodland/pinyon-juniper woodland	Species similar to those in juniper woodland/pinyon-juniper woodland habitat in Wyoming.
	Mojave creosote-bursage/ blackbush scrub/ greasewood scrub	Bighorn sheep, black-tailed jackrabbit, white-tailed antelope squirrel, desert cottontail, desert woodrat, least chipmunk, red-tailed hawk, northern harrier, black-chinned hummingbird, ash-throated flycatcher, Say's phoebe, horned lark, common raven, western meadowlark, Gambel's quail, mourning dove, thrashers, house finch, sagebrush lizard, Great Basin collared lizard, side-blotched lizard, striped whipsnake, desert tortoise.
	Utah grassland/desert grassland	Elk, mule deer, pronghorn antelope, coyote, bobcat, yellow-bellied marmot, desert cottontail, black-tailed jackrabbit, Great Basin pocket mouse, deer mouse, least chipmunk, striped whipsnake, night snake, racer, red-tailed hawk, American kestrel, vesper sparrow, broad-tailed hummingbird, violet-green swallow, western meadowlark, horned lark, common raven.
	Wetlands and riparian woodlands	Species similar to those in wetlands and riparian woodlands habitat in Wyoming.
NEVADA	Mojave creosote-bursage/ blackbush scrub/Mojave mixed scrub	Species similar to those in Mojave creosote-bursage/blackbush scrub/Mojave mixed scrub habitat in Utah.
	Wetlands and riparian woodlands	Species similar to those in wetland and riparian woodlands habitat in Wyoming.
	Sagebrush/sagebrush scrub	Species similar to those in sagebrush/sagebrush scrub habitat in Wyoming.

TABLE 4.6.1-1 (cont'd)

Common Wildlife Species Occurring Along the Kern River 2003 Expansion Project Pipeline Route

State	Habitat Type	Common Species
CALIFORNIA	Mojave creosote-bursage/ blackbush scrub/Mojave mixed scrub	Species similar to those in Mojave creosote-bursage/desert scrub/blackbush scrub habitat in Utah.
	Desert saltbush scrub	Species similar to those in Mojave creosote-bursage/blackbush scrub/greasewood scrub habitat in Utah.
	Juniper woodland/pinyon-juniper woodland	Species similar to those in juniper woodland/pinyon-juniper woodland habitat in Wyoming.
	Sagebrush/sagebrush scrub	Species similar to those in sagebrush/sagebrush scrub habitat in Wyoming.
	Utah grassland/desert grassland	Species similar to those in Utah grassland/desert grassland habitat in Utah.

The primary impact of the project on wildlife habitat would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. The degree of impact would depend on the type of habitat affected and the rate that the vegetation would regenerate after construction. Impact on grasslands or shrub-dominated habitats in the arid portions of the project would be long term. Sagebrush and salt desert scrub may take from 10 to 50 years to revegetate following construction, and if subjected to heavy grazing and drought, may not recover to preconstruction conditions for many additional years. Although the structural component of shrub-dominated habitats would recover slowly, successful restoration of non-woody vegetation may improve the value of forage for some wildlife within a relatively short time. The habitats that would be crossed by the project are not rare or significant in the general landscape area of the project. In addition, as discussed in section 4.5.2.1, less than 1 percent of regionally available desert vegetation would be affected by the project. Therefore, although the loss of wildlife habitat could be long term, the overall impact on wildlife resources would be less than significant.

Removal of woodland (juniper and pinyon juniper) would generally result in a long-term impact and could contribute to fragmentation of woodland habitat. However, because most of the proposed pipeline would be located adjacent to existing cleared rights-of-way, and the majority of woodlands crossed are open and sparsely forested, the proposed increase to the existing fragmentation would be minor. Therefore, the general impact on wildlife as a result of woodland clearing would be less than significant.

The removal of desert vegetation would have a localized but long-term impact on wildlife. The arid environment characteristic of desert habitat is not conducive to plant growth and would slow the regeneration of vegetation following construction. The reestablishment of woody desert plants may take decades, and in some areas may take over 50 years. KRGT proposes to minimize this impact by limiting the size of its right-of-way and by locating as much of the construction right-of-way as possible within areas that were previously disturbed during construction of its existing pipeline or other utility projects. KRGT has developed its site-specific Reclamation Plans in consultation with the BLM, the FS, the CDFG, and other soil authorities (see section 4.5.2.1). These plans include measures to promote right-of-way restoration after the pipeline is constructed.

To mitigate the loss of habitat along the right-of-way, the FS and the UDWR recommended that KRGT install a wildlife guzzler (water catchment) within the pipeline right-of-way near MP 402.0 within the Dixie National Forest. This guzzler would provide a rare source of water to the area and enhance use of the area for foraging. In accordance with this restoration and mitigation recommendation, KRGT would share in the cost of the guzzler jointly with the FS, the UDWR, and possibly the Mule Deer Foundation. Installation and the specific site design of the guzzler would be completed by the UDWR. KRGT would also provide funding for a guzzler in the Pinnacle Pass area (see section 3.3.3).

In addition to the loss of wildlife habitat, clearing the construction right-of-way would result in the displacement of wildlife from areas on or adjacent to the right-of-way. Depending on the season, construction could also disrupt the courting or nesting of birds and breeding of other wildlife on or adjacent to the right-of-way. Smaller, less mobile wildlife, such as small mammals and reptiles, could be crushed by construction equipment or entrapped in trenches. KRGT would reduce these impacts by placing earthen trench plugs, with ramps on either side, at maximum 1-mile intervals along the trench and at well-defined livestock and wildlife trails intersected by the trench. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.,* add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench. These plugs would provide a means for wildlife to escape if they fall into the trench and also provide a bridge for other wildlife to cross the open trench. The pipeline trench would be inspected on a regular basis during construction and immediately before backfilling to identify entrapped animals. Wildlife found in trenches during construction would be coaxed to the nearest ramp and either encouraged to exit the trench, removed by net, or trapped (if other methods are unsuccessful). If any animal

in the trench is determined to be a sensitive species (*e.g.*, desert tortoise), only authorized individuals would be allowed to remove it from the trench (see section 4.7).

Other wildlife, such as birds and larger mammals, would leave the vicinity of the right-of-way as construction activities approach. Many of these animals may relocate into similar habitats nearby; however, the lack of adequate territorial space could force some animals into suboptimal habitats, which could increase inter- and intra-specific competition and could lower reproductive success and survival. The influx and increased density of animals in some undisturbed areas caused by these dislocations could also reduce the reproductive success of animals that are not displaced by construction. These effects, however, would diminish after construction when wildlife return to the newly disturbed areas and adjacent, undisturbed habitats after right-of-way restoration is completed. Therefore, the proposed project would not result in a significant impact by substantially altering the numbers of local populations of wildlife.

Another potential long-term or permanent impact of the project would be the increased level of human-wildlife interaction in the project area. By expanding the existing right-of-way, the project could add to the existing matrix of open desert, jeep trails, dry washes, and cleared rights-of-way currently attracting OHV users. This impact would be lessened somewhat because about 99 percent of the pipeline route is adjacent to existing rights-of-way. In addition, KRGT would only use existing roads as access to the construction right-of-way and would implement OHV blocking measures in sensitive areas as determined by the landowner or land management agency (see section 4.8.6.2).

Fires inadvertently started by construction equipment or personnel could also impact wildlife in the project area by reducing the amount of available habitat. This habitat loss could cause crowding in adjacent habitats reducing productivity and increasing stress-induced mortality. KRGT has developed a Wildfire Protection Plan (see appendix Q) to minimize the potential impacts associated with project-related fires. The plan describes measures KRGT would implement for prevention, pre-suppression, and suppression of fires during construction of the proposed project. Implementation of this plan would reduce potential fire-related impacts to less than significant levels.

Aboveground Facilities

The proposed aboveground facilities do not occur in unique or sensitive wildlife areas or habitats. Wildlife that use the proposed Coyote Creek Compressor Station site and associated powerline right-of-way are similar to those described in table 4.6.1-1 (page 4-105) for the sagebrush/sagebrush scrub habitat adjacent to the site. Construction and operation of the Coyote Creek Compressor Station and associated powerline would permanently remove about 30.9 acres of sagebrush/sagebrush scrub habitat within an area classified as non-crucial big game wintering range.

The proposed Salt Lake Compressor Station site provides only marginal wildlife habitat due to its proximity to urban development. Wildlife species that use the site have adapted to human disturbance. Construction and operation of the proposed Salt Lake Compressor Station would permanently remove 32.0 acres of undeveloped pasture and cropland.

Wildlife that use the proposed Dry Lake Compressor Station site and associated powerline right-of-way are similar to species described in table 4.6.1-1 (page 4-105) for Mojave creosote-bursage habitat. Construction and operation of the Dry Lake Compressor Station and associated powerline would result in the permanent loss of about 22.9 acres of Mojave creosote-bursage.

Construction and operation of the powerlines to the Coyote Creek and Dry Lake Compressor Stations and noise associated with operation of the stations could affect wildlife over larger areas. Sagebrush/sagebrush scrub and Mojave creosote-bursage habitats are abundant in the areas surrounding the

Coyote Creek and Dry Lake Compressor Stations, and the effect of operational noise would probably be short term because wildlife are expected to acclimate to the noise and human activities at the stations. Additionally, emissions from compressor stations would not affect wildlife use of the area surrounding the stations.

Wildlife use of existing compressor and meter stations proposed for modification is likely limited to common passerine birds perching on fences and occasional reptiles traveling through or foraging within the maintained areas. Species expected to use these areas are similar to those described for the adjacent habitats described above. Modifications to existing compressor stations and meter stations would not have a significant effect on wildlife because these areas currently provide only marginal wildlife habitat.

4.6.1.2 Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer, then migrate south to the tropical regions of Mexico, Central and South America, and the Caribbean for the non-breeding season. A variety of migratory bird species use the vegetation communities identified along the proposed pipeline route. Bird diversity increases in the southern portion of the project area during spring and fall when neotropical migrants (*e.g.*, flycatchers, warblers, etc.) pass through en route to summer breeding or wintering grounds, and in winter when summer resident birds from the north (*e.g.*, robins) arrive to spend the winter.

Executive Order 13186 (January 2001) directs Federal agencies to consider the effects of agency actions and plans on migratory birds, with emphasis on species of concern. The Agency Staffs have determined that some impact on migratory birds could result from habitat loss and disturbance of nesting individuals associated with construction of the Kern River 2003 Expansion Project.

In its comments on the draft EIS/EIR, the FWS recommended that KRGT not be authorized to begin construction until after August 1 to reduce the possibility of take of migratory birds. Based on the time frame necessary to complete the permitting process for the project, construction would not begin before August 1, 2002.

In previous comments, the FWS recommended that KRGT complete construction in riparian areas identified along the proposed route in the Mojave Desert before May to avoid impacting migratory birds that may potentially nest in these areas (Krueger, 2001a). The only areas of defined riparian vegetation identified along the project corridor through the desert are along Meadow Valley Wash (MP 474.2) and the Muddy River (477.1). However, through coordination with the FWS and BLM, it was determined that suitable nesting habitat would not be affected near Meadow Valley Wash and only marginal habitat is present near the Muddy River. KRGT's current construction schedule is to begin construction through the Mojave Desert in November, clear vegetation by the end of February, and complete construction before May. This schedule would avoid impacting nesting migratory birds because chicks and nesting adults will have left their nests by November. Additionally, because clearing, which is scheduled to occur in February, would temporarily remove nesting habitat, it is unlikely that birds would attempt to nest on the right-of-way in late winter or early spring. Therefore, although the project activities could cause some migratory birds to avoid the area, this impact would be limited to the relatively short period of active construction and is not expected to result in a significant or long-term change in migration patterns through the area. Additional discussion of special status migratory birds is provided in section 4.7.3.

4.6.1.3 Sensitive or Managed Wildlife Areas

Big Game Ranges

Much of the pipeline route in Wyoming and Utah outside of urbanized areas crosses designated big game habitat, including yearlong, non-winter, non-crucial wintering/yearlong, and crucial wintering/yearlong habitats. These areas are described below.

- Yearlong ranges are those areas used by a population or portion of a population on a year-round basis, with the possible exception of severe winters. These ranges may include areas used for calving and fawning, as well as winter range.

- Non-winter ranges are those used by a population or portion of a population during the period between the end of one winter and the onset of the next winter (commonly May 1 through November 30).

- Non-crucial wintering/yearlong ranges (winter use areas) are used by a population or portion of a population year-round with a significant influx of additional animals into the areas when conditions on the higher elevation seasonal ranges become too severe. Use of winter ranges may vary considerably from year to year depending on the severity of the winter.

- Crucial wintering/yearlong ranges (critical winter use areas) are used throughout the year by a population or portion of a population, experience a significant influx of animals during winter, and have been documented as the determining factor in a population's ability to maintain itself at a certain level over the long term.

Wyoming - About 432.6 acres of non-crucial wintering/yearlong habitat would be affected by construction of the pipeline along about 37 miles of the route in Wyoming. Pipeline construction would also impact about 141.6 acres of crucial wintering/yearlong habitat for antelope and mule deer between MPs 14.0 and 27.0. Additionally, pipeline construction would affect about 556.9 acres of designated non-winter habitat that is used by antelope, mule deer, moose, and elk within about 54 miles of the proposed route.

Utah - In Utah, construction of the project would affect about 1,211.6 acres of non-crucial, high priority wintering/yearlong habitat and about 36.6 acres of crucial wintering/yearlong habitat for moose, mule deer, and elk. The non-crucial, high priority habitat would be crossed intermittently between MPs 62.7 and 420.1. Critical winter use area for elk would be crossed in three separate locations between MPs 87.8 and 91.1 on the Coyote Creek Loop 1. About 267.2 acres of critical mule deer winter range would be affected by construction between MPs 78.2 and 395.5.

Construction of the pipeline would also affect about 812.1 acres of designated non-winter elk, moose, mule deer, and antelope habitat in Utah between MPs 76.1 and 369.8. About 29.2 acres (between MPs 391.1 and 393.4) of this non-winter habitat are considered critical mule deer fawning area. The pipeline would also cross moderate to high value yearlong range for black bear (897.3 acres) and elk (329.9 acres).

Nevada - The BLM identified a bighorn sheep habitat management area in the Spring Mountains along the Dry Lake 2 Loop. Nelson's bighorn sheep (a BLM-sensitive species) and this management area are discussed in section 4.7.3.

California - The NPS identified a bighorn sheep migration corridor that would be crossed near the Mojave National Preserve along the Goodsprings Loop. A discussion of this migration corridor and Nelson's bighorn sheep is included in section 4.7.3.

Construction through big game crucial wintering ranges could force animals out of the designated ranges and into less suitable habitats. The potential for limited food availability could increase susceptibility to predation or freezing. The BLM Kemmerer Field Office requested that construction in big game ranges within Wyoming be completed before November 15. KRGT's proposed schedule is to complete construction in Wyoming and Utah before November 1, which would avoid the period when crucial big game wintering ranges along the pipeline route are occupied. However, if construction continues past November 15 in critical mule deer winter ranges, KRGT would install trench plugs every 0.25 mile. In other areas, KRGT would provide at least one wildlife crossover (*e.g.*, unexcavated breaks or trench plugs) at maximum 1-mile intervals

along the trench and at well-defined livestock and wildlife trails to facilitate passage of big game across the right-of-way. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench.

Construction could temporarily disrupt animals using non-winter ranges, including critical fawning areas. The FS recommended that construction be avoided between May 16 and July 1 in critical fawning areas. Based on the time frame necessary to complete the permitting process for the project, construction would not begin until after August 1. Therefore, no impacts on animals using non-winter ranges, including critical fawning areas are anticipated.

Construction activities would be limited to a fairly narrow corridor along an existing, disturbed right-of-way and would not result in substantial removal of habitat. Additionally, habitat similar to that occurring within the proposed construction right-of-way is relatively abundant in the general area surrounding the proposed route. Individuals disturbed by construction activities could likely find suitable habitat nearby, although crowding in adjacent habitat may temporarily affect reproduction and survival. KRGT proposes to implement conservation measures, including revegetation of the right-of-way with native species, in crucial wintering ranges. Through consultation with applicable state and Federal agencies, KRGT developed appropriate seed mixes for these areas that are discussed in its site-specific Reclamation Plans (see section 4.5.2.1). Overall, project impacts are not expected to substantially affect local wildlife population movements along the project corridor and implementation of KRGT's mitigation measures would reduce potential impacts to less than significant levels.

Moapa Valley

The only other sensitive wildlife areas identified along the pipeline route are in Nevada. The area generally between Meadow Valley Wash (MP 474.2) and the Muddy River (MP 477.1), known as the Moapa Valley, is considered to be a wildlife area of special concern because it is one of the few remaining locations with mesquite and defined riparian vegetation in Nevada. These vegetation types provide higher quality habitat than the Mojave creosote-bursage scrub community, which is found along the remainder of the pipeline route through the Mojave Desert. The Moapa Valley is also considered sensitive due to the potential presence of special status fish species (Moapa speckled dace and Virgin River chub) in the Muddy River. Impacts on vegetation communities and special status species in the Moapa Valley area are discussed in sections 4.5.3 and 4.7, respectively.

4.6.1.4 Wild Horses and Burros

The pipeline route in Nevada crosses an area identified as wild horse habitat between MPs 553.0 and 557.0 on the Dry Lake Loop 2 associated with the Red Rock Herd Management Area (HMA) (see section 4.8.6.1). This area includes an important water source (Wilson Tank at Tunnel Springs) and contains an active herd of wild horses, which consisted of about 30 horses during construction of the original KRGT pipeline. The BLM is currently evaluating ways to encourage the herd to relocate to the south of its existing range in order to reduce pressures on the herd associated with increasing development in the Las Vegas area.

Construction of the pipeline could affect wild horses in the Red Rock HMA by creating a safety hazard, restricting the horses' access to the water source (Wilson Tank at Tunnel Springs), and by creating temporary access ways that may be used by unauthorized OHVs that could intentionally or unintentionally disturb the herd. KRGT would place earthen trench plugs, with ramps on either side, at all well-defined livestock and wildlife trails, including those used by wild horses and burros, and every 0.25 mile within the Red Rock HMA if there is not a well-defined trail. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to

be insufficient to facilitate animal escape from the trench. These plugs would provide a means for horses and burros to escape if they fall into the trench and also provide a bridge to cross the open trench.

KRGT proposes to minimize the impact on the water source by limiting construction primarily to daylight hours, which would allow horses uninhibited after-hours access to the water tank. KRGT also proposes to transfer some water and create a temporary alternative water source away from the construction right-of-way. In the Red Rock HMA, temporary tanks holding 500 gallons of water would be placed in locations designated by the BLM, Las Vegas Field Office Wild Horse and Burro Specialist. The tanks would be installed and kept full of water 3 weeks before commencement of construction and during construction, and removed after the pipeline trench has been backfilled. KRGT would minimize the potential for increased OHV access by using only existing roads and implementing blocking measures such as placement of large rocks or construction of berms to prevent access following construction (see section 4.8.6.2). KRGT's implementation of these mitigation measures would reduce impacts on the wild horses in the Red Rock HMA to less than significant levels.

The pipeline route crosses the Clark Mountain HMA between MPs 579.4 and 603.7 on the Goodsprings Loop (see section 4.8.6.1). This HMA differs from the Red Rock HMA in that management of the Clark Mountain HMA focuses on wild burros. The number of burros in this HMA exceeds the appropriate management level and removal efforts are underway to reduce the herd. No significant impacts on this HMA are expected.

4.6.2 Aquatic Resources

4.6.2.1 General Impact and Mitigation

Pipeline Facilities

The Kern River 2003 Expansion Project would cross 21 waterbodies that are known to support or are capable of supporting fisheries. Twelve of these waterbodies support a coldwater fishery; the remainder are warmwater or nongame fisheries. Table 4.6.2-1 (page 4-113) lists the representative fish species that are known to occur in these streams or rivers. Thirteen of these waterbodies are known or suspected to contain federally or state-listed special status species. Special status species are discussed in section 4.7.

No new or invasive aquatic species would be introduced to the area as a result of the project. Construction-related impacts on fish within waterbodies could result from sedimentation and turbidity, streambank erosion, contamination from fuel and chemical spills, hydrostatic testing, water withdrawals for dust control, contaminant suspension and migration, and blasting. The extent of impact, if any, would depend on the construction method used to cross the waterbody and the seasonal timing of in-stream activities.

Sedimentation and Turbidity - Increased sedimentation and turbidity from construction are the greatest threats to fishery resources. Sedimentation can adversely affect fish eggs and juvenile fish survival, benthic community diversity and health, and spawning habitat. However, any sedimentation or turbidity resulting from construction would be short term, generally occurring only during periods of active construction within a waterbody.

It is unlikely that the overall population of most species in waterbodies crossed by the proposed route would be significantly impacted by temporary and localized increases in turbidity. KRGT would adhere to construction windows or implement special crossing methods to avoid or minimize potential impacts on coldwater or other sensitive, threatened, or endangered aquatic species during spawning seasons.

TABLE 4.6.2-1

Representative Fish Species Known to Occur Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Waterbodies	Fish Species
WYOMING		
Opal Loop, Muddy Creek Loop, Coyote Creek Loop 1	Hams Fork River, Little Muddy Creek, Bear River, Coyote Creek, Sage Creek Draw, Yellow Creek	Brown trout, rainbow trout, mountain whitefish, cutthroat trout, brook trout, mottled sculpin, mountain sucker, bluehead sucker, Utah sucker, carp, Utah chub, redside shiner, speckled dace, longnose dace
UTAH		
Coyote Creek Loop 1, Coyote Creek Loop 2, Salt Lake Loop	Chalk Creek, East Fork Chalk Creek, Unnamed Creek, South Fork Chalk Creek, Weber River, East Branch Weber River, Surplus Canal	Brown trout, rainbow trout, mountain whitefish, mottled sculpin, mountain sucker, Utah sucker, carp, white bass, speckled dace, longnose dace, redside shiner, catfish, walleye
Elberta Loop, Fillmore Loop, Veyo Loop	Sevier River, Chalk Creek, Beaver River, Magotsu Creek, Moody Wash, Beaver Dam Wash	Brown trout, rainbow trout, mountain sucker, Utah sucker, redside shiner, speckled dace, fathead minnow, Utah chub, carp, mosquito fish, catfish, largemouth bass, bluegill, green sunfish, yellow perch
NEVADA		
Veyo Loop	Muddy River	Redside shiner, fathead minnow, carp, mosquito fish, catfish, largemouth bass
CALIFORNIA		
Goodsprings Loop, Daggett Loop	Mojave River	Redside shiner, fathead minnow, mosquito fish, catfish, striped bass a/

a/ Species listed are typical of sections of the Mojave River with perennial flow and do not occur at the proposed project's crossing locations.

Of the proposed crossing methods, the open-cut crossing method has the greatest potential to increase sedimentation and adversely affect fishery resources. However, an open cut is typically the quickest crossing method, involving 1 day or less of in-stream construction for small streams, and 2 to 3 days for larger waterbodies. Therefore, sedimentation and increased turbidity in waterbodies would be temporary.

KRGT's use of proper construction techniques as outlined in its WWCM Procedures (see appendix F) would further minimize the impacts of open-cut crossings. Permits would be obtained from appropriate state agencies before construction. Each crossing would be completed in accordance with KRGT's WWCM Procedures and applicable permit conditions to reduce soil erosion into waterbodies. KRGT would store trench spoil above and set back from the streambank. KRGT would also use sediment barriers such as silt fence to prevent or significantly reduce runoff into a stream. Construction would be completed as quickly as possible to shorten the duration of sedimentation and turbidity. KRGT would stabilize the construction site, including the streambanks, immediately following completion of construction. If circumstances require a construction delay, adequate site stabilization measures would be employed in accordance with KRGT's WWCM Procedures and permit conditions. Implementation of these measures would reduce impacts associated with sedimentation and turbidity to less than significant levels.

Streambank Erosion - During construction, clearing and grading of vegetative cover could increase erosion along streambanks and turbidity levels in the waterbodies. Alteration of the natural drainage ways or compaction of soils by heavy equipment near streambanks during construction may accelerate erosion of the banks, runoff, and the transportation of sediment into waterbodies. The degree of impact on aquatic organisms due to erosion would depend on sediment loads, stream velocity, turbulence, streambank composition, and sediment particle size. To minimize these impacts, KRGT would use equipment bridges, mats, and pads to support equipment that must cross the waterbody or work in saturated soils adjacent to the waterbody. In accordance with its WWCM Procedures and where topography allows, during clearing and

grading, KRGT would preserve a minimum of 10 feet of vegetation along the waterbody banks and locate temporary extra workspaces at least 50 feet from the edge of perennial waterbodies and intermittent waterbodies that have riparian vegetation present on the banks except where site-specific approval is granted. At the remaining intermittent waterbody crossings, KRGT would locate extra workspaces 10 feet from the edge of the water (see section 4.3.2.5). KRGT would also install and maintain sediment barriers, such as silt fence, across the right-of-way at the edge of waterbodies throughout construction except for short periods when removal of these sediment barriers is necessary to dig the trench, install the pipeline, or restore the right-of-way. Implementation of these measures would reduce impacts associated with streambank erosion to less than significant levels.

Fuel and Chemical Spills - For any large construction project, there is the potential for spills of fuel or other hazardous liquids from storage containers, equipment working in or near streams, and fuel transfers. Any spill of fuel or other hazardous liquid that reaches a waterbody would be detrimental to water quality. The chemicals released during spills could have acute, direct effects on fish, or could have indirect effects such as altered behavior, changes in physiological processes, or changes in food sources. Fish could be killed if a large volume of hazardous liquid is spilled into a waterbody.

To minimize the potential for spills, KRGT would implement the measures in its Spill Plan (see appendix G). Adherence to the Spill Plan would prevent a large spill from occurring near surface waters. KRGT would prohibit the storage of fuels within 100 feet of the bank of a waterbody. Additionally, the fueling of construction equipment by mobile tankers or mobile tanks would not be allowed within 100 feet of a waterbody bank. KRGT would evaluate these setbacks on a case-by-case basis where agencies require a greater setback for resource protection. An exception to this 100-foot setback would be the refueling of hydrostatic test water pumps. Where this is necessary, temporary containment structures, such as straw bales or earth berms with impervious liners, would be installed around the pumps. Personnel would perform frequent maintenance and inspection of these structures. Should a small spill occur, the measures in the Spill Plan would decrease the response time for control and cleanup of the spill. KRGT's implementation of the measures in its Spill Plan would reduce impacts associated with a potential spill to less than significant levels.

Hydrostatic Testing - As discussed in section 4.3.2, both the Bear and Weber Rivers support coldwater fisheries and are potential sources for hydrostatic test water. To avoid uptake of organic debris or entrainment of aquatic species, test water intakes in these two waterbodies would have filtering and screening devices, and would be suspended above the streambottom.

No impacts on fisheries are anticipated as a result of surface water depletion associated with hydrostatic test water withdrawals or downstream sedimentation associated with hydrostatic test water discharges. Hydrostatic test water would be discharged to stable, upland areas along the construction right-of-way. KRGT would not discharge test water directly into surface waters unless authorized or required by its NPDES permits. Energy-dissipating devices and/or filter bags would be used to prevent erosion, streambed scour, suspension of sediments, and excessive streamflow. KRGT would not use chemical additives during hydrostatic testing. Discharge locations would depend on the length of the test section and applicable Federal, state, and local guidelines. Implementation of these measures would reduce impacts associated with hydrostatic testing to less than significant levels. Additional discussion regarding the general procedures and impacts of hydrostatic test water withdrawal and discharge is presented in section 4.3.2.10.

Dust Control - As discussed in section 4.3.2.11, KRGT expects that the same sources of hydrostatic test water would be used to provide the water for dust control activities. The impacts of the water withdrawals for dust control would be the same as those for hydrostatic test water withdrawals. Implementation of KRGT's measures to reduce impacts associated with hydrostatic test water withdrawals would reduce the impacts of water withdrawals for dust control activities to less than significant levels.

Contaminant Suspension and Migration - Pipeline construction could disturb and suspend existing sediments in the water column, temporarily degrading water quality and redistributing contaminants downstream. This may have an impact on aquatic and benthic species, and on downstream water uses. The potential to encounter contaminated sediments is discussed in section 4.3.2.9.

Blasting - If in-stream blasting is required, aquatic organisms close to the blast may be injured or killed. Based on construction of its existing pipeline, KRGT does not anticipate the need to conduct in-stream blasting. In the event it is needed, KRGT would use techniques such as scare charges or banging on a piece of pipe before the blast to scare aquatic organisms from the blast area before blasting is conducted. It is anticipated that the preparation of the rock for blasting (*i.e.*, drilling shot holes) would cause enough disturbance to displace most aquatic organisms from the immediate vicinity of the blast. Immediately following blasting, KRGT would remove shot rock that impedes stream flow. As a result, impacts on aquatic resources associated with blasting would be less than significant.

Timing of Construction and Construction Methods - The degree of impact associated with in-stream activities can be affected by the season of construction and the crossing method. Construction during periods of sensitive fish activity (*i.e.*, spawning and migration) can have a greater impact on fish than construction during other periods. Of the waterbodies with the potential to contain fisheries (see table 4.3.2-2 (page 4-48)), 11 have agency-recommended construction timing restrictions designed to protect sensitive fisheries (see table 4.6.2-2 (page 4-116)).

KRGT proposes to cross the Bear, East Branch Weber, and Weber Rivers using the HDD method. This method would eliminate in-stream disturbance and potential impacts on these waterbodies unless there is an inadvertent release of drilling mud into a waterbody (frac-out) or a chemical spill. A frac-out can cause sedimentation of the water column. KRGT has completed geotechnical investigations at these waterbodies to determine the feasibility for crossing them using the HDD method and has determined that the drills are likely to be completed successfully. KRGT prepared a Drilling Mud Release Contingency Plan that includes measures for the prevention, cleanup, and reporting of an inadvertent release of drilling mud (see appendix O). Implementation of this plan would minimize impacts from a frac-out to less than significant levels. Implementation of KRGT's Spill Plan (see appendix G) would minimize the potential for a chemical spill to less than significant levels and would provide for protection of sensitive resources (*e.g.*, waterbodies) in the event a spill does occur.

KRGT would adhere to the recommended timing restrictions for Beaver Dam Wash at MP 431.0 if water is present within this waterbody when encountered by the construction spread during normal progression. If this waterbody is dry when encountered by the construction spread, KRGT proposes to proceed with the crossing outside of the window. Crossing this waterbody during the recommended timing window if flowing or at any time under dry conditions would not result in significant impacts.

The remaining waterbodies with agency-recommended timing restrictions are known to contain special status species. A discussion of timing restrictions and potential impacts on special status species is included in section 4.7.

Aboveground Facilities

No fishery resources would be affected by the construction or operation of aboveground facilities or associated powerlines.

TABLE 4.6.2-2

Agency-Recommended Timing Restrictions for Fisheries Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Waterbody	Agency Recommendation	Proposed Crossing Method a/
WYOMING				
Muddy Creek Loop	47.5	Bear River	Avoid in-stream disturbance between 3/15 and 7/31	HDD
UTAH				
Coyote Creek Loop 1	66.8	Chalk Creek	Avoid in-stream disturbance between 4/15 and 7/31	F or DP during normal progression of the construction spread
	69.6	East Fork Chalk Creek	Avoid in-stream disturbance between 4/15 and 7/31	F or DP during normal progression of the construction spread
	71.1	Unnamed Creek	Avoid in-stream disturbance between 4/15 and 7/31	F or DP during normal progression of the construction spread
	81.1	South Fork Chalk Creek	Avoid in-stream disturbance between 4/15 and 7/31	F or DP during normal progression of the construction spread
	87.4	East Branch Weber River	Avoid in-stream disturbance between 4/15 and 7/15 and between 10/15 and 2/28	HDD
	87.6	Weber River	Avoid in-stream disturbance between 4/15 and 7/15 and between 10/15 and 2/28	HDD
Fillmore Loop	400.3	Magotsu Creek	Avoid in-stream disturbance between 3/1 and 7/1	F after 7/1 if water present; OC during normal progression of the construction spread if waterbody is dry
	403.3	Moody Wash	Avoid in-stream disturbance between 3/1 and 7/1	F after 7/1 if water present; OC during normal progression of the construction spread if waterbody is dry
Veyo Loop	431.0	Beaver Dam Wash	Avoid in-stream disturbance between 3/1 and 7/1	OC (after 7/1 if water present)
NEVADA				
Veyo Loop	477.1	Muddy River	Avoid in-stream disturbance after April 1	F before April 1

a/ HDD = horizontal directional drill, F = flume, DP = dam and pump, OC = open cut.

4.7 SPECIAL STATUS SPECIES

Significance Criteria

Adverse impact on federally or state-listed or other special status species would be considered significant and would require additional mitigation if project construction or operation would:

- reduce the abundance of sensitive species that occur within the project area;
- result in the loss of designated or proposed critical habitat for one or more listed species;
- cause a temporary alteration or loss of habitat important for one or more listed species that could result in avoidance by a listed species, or that could cause increased mortality or lowered reproductive success;
- result in direct or indirect impacts on candidate or sensitive species populations, or habitat, that would contribute to or result in the Federal or state listing of the species, *(e.g.,* by substantially reducing species numbers, or by resulting in the permanent loss of habitat essential for the continued existence of a species); or
- create a potential health hazard or involve the use, production, or disposal of materials that pose a hazard to special status species populations in the project area.

4.7.1 General Impact and Mitigation

Federal agencies are required by Section 7 of the ESA (Title 19 United States Code Part 1536(c)), as amended (1978, 1979, and 1982), to ensure that any actions authorized, funded, or carried out by the agency do not jeopardize the continued existence of a federally listed endangered or threatened species, or result in the destruction or adverse modification of the designated critical habitat of a federally listed species. The action agency (*e.g.*, the FERC) is required to consult with the FWS and/or the National Marine Fisheries Service (NMFS) to determine whether federally listed endangered or threatened species or designated critical habitat are found in the vicinity of the proposed project, and to determine the proposed action's potential effects on those species or critical habitats. For actions involving major construction activities with the potential to affect listed species or designated critical habitat, the Federal agency must prepare a Biological Assessment (BA) for those species that may be affected. The action agency must submit its BA to the FWS and the NMFS and, if it is determined that the action may adversely affect a listed species, the Federal agency must submit a request for formal consultation to comply with Section 7 of the ESA. In response, the FWS or the NMFS would issue a Biological Opinion (BO) as to whether or not the Federal action would likely jeopardize the continued existence of a listed species, or result in the destruction or adverse modification of designated critical habitat.

In compliance with Section 7 of the ESA, the FERC requested that the FWS consider the draft EIS/EIR, along with various survey reports prepared by KRGT, as the BA for the Kern River 2003 Expansion Project. The FWS is currently reviewing the BA and is in the process of preparing a BO. No species under the NMFS' jurisdiction would be affected by the project.

The CSLC is responsible for complying with all provisions of the CEQA covering special status species. CEQA Guidelines Section 15065 indicates a project may have a significant effect on the environment if it reduces the number or restricts the range of an endangered, rare, or threatened species, as defined in Section 15380. Under the CEQA, the CSLC must take into account the impacts on these species.

For purposes of this environmental analysis, special status species of plants and animals include:

- species officially listed by Wyoming, Utah, Nevada, California, and the Federal government as endangered, threatened, or rare;
- species that are proposed for Federal listing as threatened or endangered;
- species noted as sensitive or of special concern by the Wyoming Natural Diversity Database (WNDD), the Utah Conservation Data Center (UCDC), the Nevada Natural Heritage Program (NNHP), the CDFG, the BLM, the FS, and the FWS; and
- plants occurring on Lists 1B and 2 of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik, 1994).

With assistance from KRGT, the FERC and CSLC staffs informally consulted with the FWS, the WGFD, the UDWR, the Nevada Division of Wildlife (NDOW), the Nevada Division of Forestry (NDF), the CDFG, the WNDD, the UCDC, the NNHP, the CNPS, the FS, and the BLM to assess impacts on special status species. These consultations resulted in the identification of 141 special status species that might occur in the project area and therefore could require consideration in this NEPA/CEQA analysis. Biologists conducted focused habitat evaluations and species surveys between April and July 2001 to determine the potential for the occurrence of these special status species or their habitats in the project area. The design and methodology of all of the special status species surveys were based on established protocols and/or were developed in consultation with biologists from the FWS, BLM, and applicable state agencies. Detailed reports presenting the results of the special status species surveys were provided to the FWS, the BLM, and applicable state agencies.

Based on survey results, and additional information provided by KRGT or agencies, it has been determined that 77 of the 141 special status species originally identified by the FWS, the BLM, the FS, the WGFD, the UDWR, the NDOW, the NDF, and the CDFG do not warrant further consideration in this environmental analysis because they are not known to occur or lack suitable habitat in the project area leading to a "no effect" determination; or have transient habits (*i.e.*, migratory or highly mobile over large territories) that make any effects from the temporary or permanent impacts associated with the proposed facilities either insignificant or discountable. These 77 species, along with the justification for eliminating them from further consideration, are listed in table R-1 in appendix R (pages R-1 through R-5). The remaining 64 species either are known or likely to occur in the project area and could potentially be affected by the project or were identified as species of particular interest during the public scoping process. These 64 species are listed in table 4.7.1-1 (page 4-119) and discussed below. Site-specific impacts and species-specific conservation measures are also discussed below.

In general, the impacts of the project on special status species would be the same as described for vegetation, wildlife, and aquatic resources. However, the magnitude and duration of these impacts could be greater for special status species, because their distribution and relative abundance usually are more limited than species discussed in sections 4.5 and 4.6. Special status plants in the pipeline right-of-way would be lost when the right-of-way is cleared, and special status animals could be affected by the temporary loss of habitat during construction. However, since the project is within or adjacent to existing rights-of-way for about 99 percent of the route, vegetation clearing would not create substantial fragmentation of special status species habitat. Mobile individuals would likely be displaced to other habitat but could be lost because of intra-specific competition, predation, or other stresses. Immobile species and juveniles could be killed. Construction of aboveground facilities would result in a permanent loss of habitat. Special status species could also be affected where blasting is required.

TABLE 4.7.1-1

Special Status Species Potentially Occurring in the Vicinity of the Kern River 2003 Expansion Project

Species	Federal Status a/	State Status b/ WY	UT	NV	CA	General Locations Where Species May Occur
Birds						
American kestrel *Falco sparverius*	S c/					Potential habitat identified along the Opal, Muddy Creek, Coyote Creek 1, and Fillmore Loops.
Arizona Bell's vireo *Vireo bellii arizonae*	SOC, S				E	Potential habitat identified along Meadow Valley Wash and the Muddy River.
Bald eagle *Haliaeetus leucocephalus*	T		T		E	Potential habitat identified along the Opal, Muddy Creek, Coyote Creek 1, Salt Lake, Elberta, Fillmore, and Veyo Loops.
Bendire's thrasher *Toxostoma bendirei*	S				SOC	Potential habitat identified between MPs 580 and 600 of the Goodsprings Loop.
Blue grosbeak *Guiraca caerulea*	SOC, S		SP/SD			Potential habitat identified along the Muddy River.
Brewer's sparrow *Spizella breweri*	S					Potential habitat identified along the Opal, Muddy Creek, Coyote Creek 1, and Fillmore Loops.
Burrowing owl *Athene cunicularia*	SOC, S		SP	P	SOC	Potential habitat identified along the Muddy Creek, Elberta, Fillmore, Goodsprings, and Daggett Loops; often associated with desert tortoise and Utah prairie dog burrows. Individuals noted during field surveys along the Elberta and Fillmore Loops.
Ferruginous hawk *Buteo regalis*	S	SSC3	T	P	SOC	Potential habitat identified along the Muddy Creek and Coyote Creek Loops, the entire route in UT; potential nesting habitat identified between MPs 14 and 26 of the Muddy Creek Loop. Individuals noted during field surveys.
Golden eagle *Aquilia chrysaetos*	S c/				SFP	Potential breeding habitat identified along the Opal, Muddy Creek, Coyote Creek, and Fillmore Loops and between MPs 158 and 185 of the Salt Lake Loop. Individuals noted during field surveys. Potential to occur throughout project area.
Gray flycatcher *Empidonax wrightii*	SOC, S					Potential habitat identified along the Muddy River.
LeConte's thrasher *Toxostoma lecontei*	S				SOC	Potential habitat identified along the Goodsprings and Daggett Loops.
Lucy's warbler *Vermivora luciae*	SOC, S					Potential habitat identified along the Muddy River.
Mountain plover *Charadrius montanus*	PT		SP/SD			Potential habitat identified along the Opal and Muddy Creek Loops. Individuals noted during field surveys.

TABLE 4.7.1-1 (cont'd)

Special Status Species Potentially Occurring in the Vicinity of the Kern River 2003 Expansion Project

Species	Federal Status a/	State Status b/				General Locations Where Species May Occur
		WY	UT	NV	CA	
Northern goshawk *Accipiter gentilis*	S		SP		SOC	Potential habitat identified along the Opal, Muddy Creek, Coyote Creek 1, and Fillmore Loops.
Northern harrier *Circus cyaneus*	S c/				SOC	Potential habitat identified along the Opal, Muddy Creek, and Coyote Creek 1 Loops.
Peregrine falcon *Falco peregrinus*	S	SSC3	E	P	E	Potential nesting habitat identified between MPs 14 and 26 of the Muddy Creek Loop.
Phainopepla *Phainopepla nitens*	SOC, S			P		Potential habitat identified along Meadow Valley Wash and the Muddy River.
Prairie falcon *Falco mexicanus*	S c/				SOC	Potential habitat identified along the entire route. Individuals noted during field surveys.
Red-tailed hawk *Buteo jamaicensis*	S c/					Potential habitat identified along the entire route. Individuals noted during field surveys.
Sage grouse *Centrocercus urophasianus*	S		SP/SD			Potential habitat identified along the Opal, Muddy Creek, Coyote Creek 1, and Fillmore Loops. Individuals noted during field surveys.
Sage sparrow *Amphispiza billineata*	S					Potential habitat identified along the Opal, Muddy Creek, Coyote Creek 1, and Fillmore Loops.
Sage thrasher *Oreoscoptes montanus*	S					Potential habitat identified along the Opal, Muddy Creek, Coyote Creek 1, and Fillmore Loops.
Southwestern willow flycatcher *Empidonax traillii extimus*	E		E	P	E	Potential habitat identified along Meadow Valley Wash and the Muddy River.
Summer tanager *Piranga rubra*	SOC, S				SOC	Potential habitat identified along the Muddy River.
Swainson's hawk *Buteo swainsoni*	S		SP	P	T	Potential habitat identified along the route in Utah.
Vermillion flycatcher *Pyrocephalus rubinus*	SOC, S				SOC	Potential habitat identified along the Muddy River.
Western yellow-billed cuckoo *Coccyzus americanus*	C		T	P	E	Potential habitat identified along Meadow Valley Wash and the Muddy River.
Mammals						
Black-footed ferret *Mustela nigripes*	E	SSC1	E			Potential habitat identified along the Opal, Muddy Creek, and Coyote Creek 1 Loops.
Desert kangaroo rat *Dipodomys deserti*	S		SP/SD			Potential habitat identified along the Veyo, Dry Lake 1, Dry Lake 2, Goodsprings, and Daggett Loops.
Merriam's kangaroo rat *Dipodomys merriami*	S		SD			Potential habitat identified along the Veyo, Dry Lake 1, Dry Lake 2, Goodsprings, and Daggett Loops.

TABLE 4.7.1-1 (cont'd)

Special Status Species Potentially Occurring in the Vicinity of the Kern River 2003 Expansion Project

Species	Federal Status a/	State Status b/				General Locations Where Species May Occur
		WY	UT	NV	CA	
Mohave ground squirrel *Spermophilus mohavensis*					T	Potential habitat identified along the Goodsprings and Daggett Loops. Individuals noted during field surveys.
Nelson's bighorn sheep *Ovis canadensis nelsoni*	S					Potential habitat identified along the Goodsprings Loop.
Pygmy rabbit *Brachylagus idahoensis*	S	SSC3				Potential habitat identified along the Muddy Creek and Coyote Creek 1 Loops.
Ringtail *Bassariscus astutus*	S		SD			Potential habitat identified along the Salt Lake, Elberta, Fillmore, and Veyo Loops.
Swift fox *Vulpes velox*		SSC3				Potential habitat identified along the Muddy Creek Loop.
Utah prairie dog *Cynomys parvidens*	T		T			Potential habitat identified along the Fillmore Loop. Individuals noted during field surveys.
White-tailed prairie dog *Cynomys leucurus*	S					Potential habitat identified along the Opal and Muddy Creek Loops. Individuals noted during field surveys.
Wyoming ground squirrel *Spermophilus elegans*	S		SD			Potential habitat identified along the Opal, Muddy Creek, and Coyote Creek 1 Loops.
Reptiles						
Desert iguana *Dipsosaurus dorsalis*	S		SD			Potential habitat identified along the Veyo Loop.
Desert night lizard *Xantusia vigilis*	S		SD			Potential habitat identified along the Veyo Loop.
Desert tortoise *Gopherus agassizii*	T		E	P	T	Potential habitat identified along the Veyo, Dry Lake 1, Dry Lake 2, Goodsprings, and Daggett Loops. Critical habitat crossed by the Veyo, Goodsprings, and Daggett Loops. Individuals noted during field surveys.
Gila monster *Heloderma suspectum*	SOC, S		E	P	SOC	Potential habitat identified along the Veyo, Dry Lake 1, Dry Lake 2, Goodsprings, and Daggett Loops.
Mojave fringe-toed lizard *Uma scoparia*	S				SOC	Potential habitat identified along the Goodsprings and Daggett Loops. Individuals noted during field surveys.
Sidewinder *Crotalus cerastes*	S		SD			Potential habitat identified along the Veyo Loop.
Fish						
Bluehead sucker *Catostomus discobolus*	S		SP			Potential habitat identified in the Bear River.
Bonneville cutthroat trout *Oncorhynchus clarki utah*	SOC, S	SOC, SSC2	UCS			Potential habitat identified in the Bear River, Yellow Creek, Chalk Creek and tributaries, and the Weber River.

TABLE 4.7.1-1 (cont'd)

Special Status Species Potentially Occurring in the Vicinity of the Kern River 2003 Expansion Project

Species	Federal Status a/	State Status b/ WY	UT	NV	CA	General Locations Where Species May Occur
Flannelmouth sucker *Catostomus latipinnis*	S		SP			Potential habitat identified in the Hams Fork River and Little Muddy Creek.
Leatherside chub *Gila copei*	S		SP			Potential habitat identified in the Bear River.
Mountain sucker *Catostomus platyrhynchus*	S					Potential habitat identified in the Hams Fork River, Little Muddy Creek, the Bear River, Coyote Creek, and Yellow Creek.
Roundtail chub *Gila robusta*	S		T			Potential habitat identified in the Hams Fork River.
Virgin River chub *Gila seminuda*	E		E	P		Potential habitat identified in the Muddy River.
Virgin spinedace *Lepidomeda mollispinis mollispinis*	SOC, S		UCS	P		Potential habitat identified in Magotsu Creek, Moody Wash, and Beaver Dam Wash.
Plants						
Achnatherum aridum Mormon needle grass					2	Potential habitat identified along the Goodsprings Loop. Individuals noted during field surveys.
Androstephium breviflorum Small-flowered androstephium					2	Potential habitat identified along the Daggett Loop.
Astragalus geyeri var. triquetrus Three-cornered milkvetch	SOC, S			CE, T		Potential habitat identified along the Veyo Loop. Individuals noted during field surveys.
Astrolepis cochisensis Scaly cloak fern					2	Potential habitat identified along the Goodsprings Loop. Individuals noted during field surveys.
Cymopterus deserticola Desert cymopterus	SOC, S				1B	Potential habitat identified along the Daggett Loop.
Eriophyllum mohavense Barstow woolly-sunflower	SOC, S				1B	Potential habitat identified along the Daggett Loop.
Mimulus mohavensis Mojave monkeyflower	SOC, S				1B	Potential habitat identified along the Daggett Loop.
Penstemon bicolor ssp. bicolor Yellow two-tone beardtongue	SOC, S					Potential habitat identified along the Dry Lake 1 and Dry Lake 2 Loops. Individuals noted during field surveys.
Penstemon bicolorssp. roseus Rosy two-tone beardtongue	SOC, S				2	Potential habitat identified along the Dry Lake 1 and Dry Lake 2 Loops. Individuals noted during field surveys.
Phacelia parishii Parish's phacelia	SOC, S				1B	Potential habitat identified along the Goodsprings Loop. Individuals noted during field surveys.

TABLE 4.7.1-1 (cont'd)

Special Status Species Potentially Occurring in the Vicinity of the Kern River 2003 Expansion Project

Species	Federal Status a/	State Status b/				General Locations Where Species May Occur
		WY	UT	NV	CA	
Sphaeralcea rusbyi var. eremicola Rusby's desert mallow	SOC, S				1B	Potential habitat identified along the Goodsprings Loop. Individuals noted during field surveys.
Spiranthes diluvialis Ute ladies'-tresses	T, S			CE,T		Potential habitat identified along the Opal, Muddy Creek, Coyote Creek 1, Salt Lake, Elberta, and Fillmore Loops.

a/ Federal Status:
E = endangered.
T = threatened.
C = candidate.
SOC = species of concern.
S = BLM sensitive.
PT = proposed threatened.

b/ State Status:
SSC 1-3 = Wyoming Game and Fish, species of special concern, ranking system where 1 is the highest priority based on habitat and population variables.
SOC = California Department of Fish and Game species of concern.
SFP = State-fully protected in California
UCS = Utah Conservation Species.
SP = experiencing a substantial decrease in population, distribution, and/or habitat availability.
SD = occurs in limited areas and/or numbers due to restricted or specialized habitat.
SP/SD = has a declining population and a limited range.
P = legal state protection under Nevada Revised Statute (NRS) 501.
2 = plants rare in California, but more common elsewhere (California Native Plant Society (CNPS) ranking).
1B = plants that are rare and endangered in Califomia and elsewhere (CNPS ranking).
T = Threatened, believed to meet the Northern Nevada Native Plant Society (NNNPS) definition of threatened.
E = Endangered, believed to meet the NNNPS definition of endangered.
CE = Critically endangered under NRS 527.260-.300.

c/ Not specifically named as a BLM sensitive species, but considered sensitive based on Federal protection of raptors.

KRGT would implement general minimization and conservation measures to reduce the impact of the project on all special status species. KRGT would develop a construction environmental awareness program to educate contractors and inspectors of the species that have the potential to occur along the project, explain that wildlife must not be harassed or harmed, explain that all project traffic must be restricted to approved access roads and work areas, and discuss all agency requirements. Contractors would be informed during training sessions that they are not authorized to handle or otherwise move listed or other special status species at any time. Also, KRGT would employ at least two EIs per construction spread who would be responsible for overseeing project environmental protection measures, including those for special status species. As discussed in section 2.5, full-time third-party compliance monitors representing the agencies would be present on every spread during construction. These measures would reduce most impacts on special status species to less than significant levels. Site-specific impacts and additional species-specific conservation measures are discussed below.

4.7.2 Federally Listed or Proposed Threatened and Endangered Species

Based on consultations with the Cheyenne, Salt Lake City, Reno, Southern Nevada, and Barstow Field Offices of the FWS,[6/] 24 federally listed, proposed listed, or candidate species were initially identified as potentially occurring in the project area. Following preliminary field surveys and further consultations with those FWS offices, 15 of the 24 species were eliminated from further consideration. The remaining nine species are included in table 4.7.1-1 (page 4-119) and discussed below.

Additionally, KRGT consulted with the FWS regarding the potential for impacts on special status species due to depletion of water from the Colorado River system. KRGT originally identified the Muddy River, which is within the Colorado River system, as a potential source of water for hydrostatic testing. The FWS determined that the amount of water that would be withdrawn for hydrostatic testing would be insignificant compared to the capacity of the Colorado River system and that overall impacts on sensitive fisheries or other species that rely on that water would not occur (Goodchild, 2001). However, KRGT has since eliminated the Muddy River as a potential source of hydrostatic test water. Therefore, no water would be withdrawn from the Colorado River system and no impacts on species within this system would occur.

Bald Eagle

The bald eagle is a federally listed threatened species, a Utah state-listed threatened species, and a California-listed endangered species. Bald eagles generally nest in tall trees near large lakes, rivers, reservoirs, and some coastal areas between April and July, often using the same nest year after year. Bald eagles select perches such as large, stout-limbed trees, snags, broken-topped trees, or rocks near water that provide easy access to hunting or feeding areas. Historically, populations of bald eagles were drastically reduced principally due to low productivity as a result of bioaccumulation of pesticides. Since the banning of organochlorine pesticides such as DDT, bald eagle numbers have been increasing so much that the bald eagle was proposed for delisting on July 4, 1999 as "recovered." The bald eagle, however, remains protected as a threatened species by the ESA until delisting is finalized.

Although bald eagle habitat is known to occur in all of the counties crossed by the proposed project in Wyoming and Utah, breeding habitat generally does not occur in the project area. Wintering habitat occurs along the majority of the pipeline route because the bald eagle uses riparian low elevation forest and desert habitats during the non-breeding season. Direct and indirect impacts on eagles could occur depending on proximity of disturbance to an active nest and timing of that disturbance. Removal of an active nest

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6/ The Sacramento Field Office of the FWS was not consulted to identify protected species potentially occurring in the San Joaquin Valley because the project does not involve activities under the jurisdiction of the Sacramento Field Office.

during construction could result in the loss of eggs or death of nestlings. Construction near an active eagle nest could result in nest abandonment; overheating, chilling, or desiccation of unattended young causing nestling mortality; premature fledging; and ejection of eggs or young from the nest.

During surveys conducted in 2001, a single bald eagle was observed perched in a dead tree about 0.25 mile west of a proposed pipe/contractor yard (SP2-PY-5, SP2-CY2). No other bald eagles were observed during 2001 project-related field surveys. The *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* (FWS, 2002) include seasonal and spatial restrictions near active raptor nests, which require a 1-mile buffer around bald eagle nests until August 31. KRGT plans to conduct aerial surveys for raptor nests, including bald eagles, during the nesting season before construction in 2002. These surveys would cover 1 mile on either side of the outside edge of the construction work area. If an eagle nest is identified during the surveys, KRGT would follow the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* to minimize potential impacts of the project on bald eagles, unless site-specific treatment of a nest is approved by the BLM, the local FWS field office, and the UDWR (for nests in Utah).

With the implementation of KRGT's proposed survey and conservation measures, the project is *not likely to adversely affect* the bald eagle.

Mountain Plover

Mountain plovers are proposed for Federal listing as a threatened species and are considered a species of special concern in Utah due to declining population and limited range. Mountain plovers are typically found in areas of short grass plains, low rolling grassy fields, freshly plowed fields, newly sprouting grain fields, and occasionally sod farms. In southeastern Wyoming, mountain plovers nest in shortgrass prairie with a history of heavy grazing or in low shrub semideserts. Nesting and brood rearing occur between May and July, and broods may move over 1 mile from the nest within 2 or 3 days of hatching.

Surveys in 2001 identified potential habitat along the Opal and Muddy Creek Loops (between MPs 0.0 and 26.0), and identified mountain plovers at three sites along the pipeline route in this area. Although the surveys coincided with the plover's nesting period, no breeding activity was observed. Additionally, KRGT proposes to conduct surveys using FWS-approved survey protocols again during the early breeding season in 2002 to determine if plovers are nesting on or adjacent to the right-of-way.

Based on the latest *Mountain Plover Survey Guidelines* (FWS, 2001), construction after July 10 would not be likely to affect mountain plovers. Because of the time frame necessary to complete the permitting process for the project, construction would not begin before August 1, 2002. Therefore, construction of the project in areas of potential mountain plover habitat would not likely directly affect nesting or pre-fledging mountain plovers. Indirect impacts could occur in the short term if available forage and shelter are reduced due to clearing or if a lack of vegetation cover along the right-of-way made the plover more susceptible to predation. Positive indirect impacts could include an increase in young forbs and grasses for forage.

Per FWS and WGFD recommendations, KRGT would return the area of suitable plover habitat to preconstruction conditions using native seed mixes. No aboveground facilities, access roads, or two-tracks would be constructed in mountain plover habitat.

Based on the construction schedule, the Kern River 2003 Expansion Project is *not likely to adversely affect (and thus, is not likely to jeopardize)* the mountain plover or contribute to a trend towards Federal listing.

Southwestern Willow Flycatcher

The southwestern willow flycatcher is a federally listed, Utah state-listed, and California state-listed endangered species, and is protected under Nevada Revised Statute (NRS) 501 in Nevada. A small, insectivorous bird of riparian woodlands, the southwestern willow flycatcher migrates to wintering grounds between central Mexico and northern South America. During the breeding season (April to September), southwestern willow flycatchers may be found in suitable habitat in southern California, Arizona, New Mexico, extreme southern portions of Nevada and Utah, extreme southwest Colorado, and western Texas. This species is most frequently found along perennial streams, wetlands, and other riparian areas containing dense patches of willows, arrowweed, baccharis, and other species that provide foraging and nesting habitat.

In the project area, potentially suitable habitat for the southwestern willow flycatcher was found along Meadow Valley Wash (MP 474.2) and the Muddy River (MP 477.1) on the Veyo Loop. The FWS and the BLM visited Meadow Valley Wash and the Muddy River in 2001 to assess the quality of habitat in these locations and determined that habitat for the southwestern willow flycatcher is largely absent from the project area and is only of marginal suitability where present. These agencies noted that the proposed crossing locations did not contain suitable southwestern willow flycatcher habitat (Krueger, 2001b). Therefore, although the removal of even marginal habitat could indirectly affect flycatchers by eliminating potential future forage and nest habitat, the Kern River 2003 Expansion Project is *not likely to adversely affect* the southwestern willow flycatcher.

Western Yellow-billed Cuckoo

The western yellow-billed cuckoo is a Federal candidate for listing, a Utah state-listed threatened species, a California state-listed endangered species, and is protected under NRS 501 in Nevada. The western yellow-billed cuckoo primarily inhabits deciduous riparian woodlands (particularly woodlands with cottonwoods and willows) during the breeding season, and forest, woodland, and scrub habitats during the non-breeding season. Western yellow-billed cuckoos typically nest later (mid June through August) than many other bird species found in similar habitats. The primary threat to this species is loss or degradation of habitat as a result of conversion to agricultural uses, dams and river flow management, bank protection, overgrazing, and competition from exotic plants such as tamarisk.

During field surveys, suitable habitat for the western yellow-billed cuckoo was identified along Meadow Valley Wash (MP 474.2) and the Muddy River (MP 477.1) in Nevada. No suitable habitat for the species was identified in Utah or California. The crossing locations of Meadow Valley Wash and the Muddy River lack large riparian woodland areas. However, some large stands of mesquite are scattered throughout the Meadow Valley Wash area that could provide breeding habitat. The FWS and the BLM visited Meadow Valley Wash and the Muddy River to assess the quality of habitat in these locations and determined that habitat for the western yellow-billed cuckoo is largely absent from the project area and is only of marginal suitability where present. These agencies noted that the proposed crossing locations did not contain suitable western yellow-billed cuckoo habitat (Krueger, 2001b). Therefore, although the removal of even marginal habitat could indirectly affect cuckoos by eliminating potential future forage and nesting habitat, the Kern River 2003 Expansion Project is *not likely to adversely affect* the western yellow-billed cuckoo or contribute to a trend towards Federal listing.

Black-footed Ferret

The black-footed ferret is a federally and Utah-listed endangered species and is considered a species of special concern by the WGFD. Black-footed ferrets inhabit short grass prairie and rolling hills and depend almost exclusively on prairie dog colonies for food, cover, and breeding habitat. Black-footed ferrets once

ranged throughout the Great Plains, extending from the Rocky Mountains east through the Dakotas and south through Nebraska, Kansas, Oklahoma, Texas, New Mexico, and Arizona. Historic ferret habitat in the vicinity of the proposed project is limited to the Opal, Muddy Creek, and Coyote Creek 1 Loops.

To evaluate the potential for the black-footed ferret to occur in the project area, a daytime reconnaissance survey along the pipeline route for white-tailed prairie dogs was conducted. The survey was conducted in areas of historic black-footed ferret habitat (from MPs 0.0 to 60.1 in Wyoming). The survey protocol, approved by the FWS, was based on the *Black-Footed Ferret Survey Guidelines for Compliance with the Endangered Species Act* (FWS, 1989). The survey identified 84 individual white-tailed prairie dogs and 11 prairie dog colonies along the proposed right-of-way. Combined, the survey recorded a total of 1,407 active and 154 inactive burrows within the proposed construction right-of-way. White-tailed prairie dog habitat was also identified along two access roads and within one proposed pipe yard. No burrows were identified in these areas.

Because of the presence of prairie dogs, follow-up black-footed ferret surveys were conducted. Daytime surveys conducted on September 10 and 11, 2001 verified the white-tailed prairie dog survey findings from the previous surveys and identified an additional five prairie dog colonies. These surveys were conducted in accordance with FWS (1989) survey guidelines and encompassed a 0.5-mile area on either side of the proposed right-of-way. Based on colony location and topographic features, identified prairie dog colonies were grouped into four black-footed ferret survey areas that totaled 1,110 acres. Nocturnal ferret surveys were conducted for three consecutive nights in each of the four areas from September 18 to 23, 2001. Surveys did not identify black-footed ferrets in the project vicinity. If construction within any of the areas potentially containing black-footed ferrets would occur after September 23, 2002, KRGT would resurvey the areas to be affected and would consult with the FWS regarding survey results and the need for mitigation.

Because impacts of the proposed project on black-footed ferrets would be indirect and limited to temporary loss of suitable habitat through crushing of white-tailed prairie dog burrows, which are abundant outside of the proposed construction work area, the project is *not likely to adversely affect* the black-footed ferret.

Utah Prairie Dog

The Utah prairie dog is a federally and Utah-listed threatened species. The Utah prairie dog generally occupies grasslands in level mountain valleys and in areas with deep, well-drained soils in south central and southwestern Utah.

In accordance with BLM survey protocol, surveys for Utah prairie dogs were conducted throughout the area identified by the BLM as potential habitat along the pipeline route. These surveys identified four areas occupied by Utah prairie dogs in a 1-mile-long area along the proposed Fillmore Loop in Iron County, Utah, all within the Adam's Well prairie dog release site. These four occupied areas were evaluated as a single colony. The estimated impact on prairie dog habitat, based on KRGT's current right-of-way configuration and including areas of unoccupied habitat between occupied areas, would be 13.2 acres. Less than 3 acres were identified as actual occupied habitat. The UDWR estimated that approximately 420 acres of suitable habitat are available within the Adam's Well release site, of which about 150 acres are currently occupied. Therefore, construction would affect approximately 3 percent of available habitat within the Adam's Well area and about 2 percent of occupied habitat. The UDWR also estimated that prairie dog densities within this area are about 1.12 prairie dogs per acre of occupied habitat. Thus, construction of the project would be expected to directly affect about three or four prairie dogs (3 acres of occupied habitat with 1.12 prairie dogs per acre of occupied habitat). Potential indirect effects of the project on Utah prairie dogs include temporary loss of forage and shelter due to vegetation clearing and collapsing of burrows and

temporary disruption of foraging and resting activities due to disturbance associated with construction equipment.

The BLM, the FWS, and the UDWR stated that surveys conducted during 2001 would be adequate for planning purposes and to allow for an estimate of required mitigation. However, KRGT would conduct preconstruction surveys to determine if the extent of occupied prairie dog habitat and estimate of Utah prairie dogs within the occupied habitat require modification. KRGT would use agency-approved biologists and survey methods, and would survey the proposed right-of-way and access roads through prairie dog habitat.

To provide the maximum opportunity for Utah prairie dogs to vacate the right-of-way before construction, in accordance with the recommendations of the BLM, the FWS, and the UDWR, KRGT would:

- begin construction between July 1 and September 30 (the period when prairie dogs are most likely to be found aboveground); and
- initiate ground disturbance before September 30 in occupied habitat if the full construction spread is not anticipated to reach the area until after September 30.

KRGT would further minimize impacts by implementing the following agency-recommended conservation measures:

- provide the BLM and the UDWR 7 to 10 days notification before the initiation of construction within occupied prairie dog habitat;
- initiate a disturbance regime (*e.g.*, traverse the area with a few pieces of equipment daily) before construction to reduce the potential for prairie dogs to be within the right-of-way during active construction;
- install fencing (minimum of 3 feet tall, opaque, and durable) along the edge of the right-of-way within 2 days of initial disturbance;
- extend fencing a minimum of 150 feet beyond the edge of identified occupied habitat;
- install escape ramps and trench plugs central to each identified area of prairie dog activity;
- inspect the trench daily in prairie dog habitat for the presence of trapped individuals;
- encourage trapped individuals to exit the trench via escape ramps or physically remove individuals that do not use escape ramps;
- allow only the EI or other qualified biologist to physically remove trapped individuals; and
- maintain a speed limit of 15 mph along the construction right-of-way through prairie dog habitat.

Following construction, prairie dogs are expected to reoccupy construction work areas. To compensate for impacts on habitat, KRGT would:

- make a monetary contribution to an account specified by the BLM for restoration of disturbed prairie dog habitat in Iron County, Utah. Compensation would be based on the

acres of prairie dog habitat impacted and would be adjusted based on the results of the 2002 preconstruction survey.

Although KRGT's implementation of its proposed conservation measures would reduce impacts on the Utah prairie dog, construction of the proposed project could result in direct mortality of Utah prairie dogs and impact active burrow complexes. Therefore, the project remains *likely to adversely affect* the Utah prairie dog. The proposed action as described would not, however, make any irreversible or irretrievable commitments of resources that would foreclose formulation or implementation of any reasonable or prudent alternatives needed to avoid jeopardizing the continued existence of the species.

Desert Tortoise

The desert tortoise is a federally and California-listed threatened species, a Utah-listed endangered species, and is protected under NRS 501 in Nevada. The desert tortoise requires friable soil for burrow and nest construction, and is widely distributed throughout the Mojave Desert from below sea level to elevations of about 4,130 feet or higher. The desert tortoise is most common in desert scrub, desert wash, and Joshua tree habitats, but occurs in almost every desert habitat except on the most precipitous slopes. The highest tortoise densities are achieved in creosote bush communities with extensive annual wildflower blooms. Additional details of the desert tortoise habitat requirements and life history are discussed in the *1994 Recovery Plan for Desert Tortoise* (FWS, 1994).

The FWS, the BLM, and state agencies in Utah, Nevada, and California did not require desert tortoise surveys as part of the 2001 field survey effort. Instead, potential impacts on the desert tortoise were assessed using historical data and the data that were collected in 1990 for the original KRGT project. Based on these data, the proposed route crosses approximately 318.8 miles of potential desert tortoise habitat: 13.8 miles in Utah, 120.5 miles in Nevada, and 184.5 miles in California. Desert tortoise habitat was also identified along 171 access roads between MPs 404.0 and 681.9 (Veyo, Dry Lake 1 and 2, and Goodsprings Loops) and MPs 0.0 and 81.7 (Daggett Loop), and within five proposed off right-of-way yards.

About 305.0 of the 318.8 miles of desert tortoise habitat identified are classified as Category 1, 2, or 3 areas by the BLM. The BLM defines the most important desert tortoise habitat according to its relative importance, manageability, and the density of tortoises it supports. The goals [7/] of Category 1 habitat are to maintain viable populations, protect existing habitat values, and increase tortoise populations where possible. The goals of Category 2 habitat are to maintain viable populations and halt further declines in tortoise habitat values. The goal of Category 3 habitat is to limit tortoise habitat and population declines to the extent possible by mitigating impacts.

About 102.9 miles of the 318.8 miles of desert tortoise habitat are recognized by the FWS as critical habitat. Critical habitat areas for the desert tortoise were delineated in the *1994 Recovery Plan for Desert Tortoise* and are considered essential to maintain viable populations of the species (Mojave Population; FWS, 1994). Table 4.7.2-1 (page 4-130) lists the miles of desert tortoise habitat that would be crossed by state and loop.

As discussed in section 2.2.1, construction would generally disturb a 75- to 80-foot-wide construction right-of-way. In general, 50 feet of the construction right-of-way would comprise previously disturbed land that was affected by construction of KRGT's existing pipeline. The vegetation within these previously disturbed areas is less well developed than in undisturbed areas and consists predominantly of herbaceous native and weed species with a scattering of small woody shrubs. Because the vegetation within previously

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7/ As defined by *Current Desert Tortoise Management Situation in BLM-Administered Lands Portion of Northern and Eastern Mojave Planning Area*, 1998.

disturbed areas is qualitatively different than that in undisturbed areas, it is treated separately in the analysis of potential desert tortoise habitat impact below.

TABLE 4.7.2-1

Desert Tortoise Habitat Crossed by the Proposed Kern River 2003 Expansion Project Pipeline Route Based on 1990 Field Survey Data

State/Facility	Total Distance Crossed (miles)	BLM Habitat Crossed by Category (miles)			FWS Critical Habitat Crossed	
		1	2	3 a/	Unit Name	Distance (miles)
UTAH						
Veyo Loop	13.8	NA b/	NA	NA	Beaver Dam	9.1
NEVADA						
Veyo Loop	67.2	24.7	13.5	29.0	Beaver Dam	13.5
					Mormon Mesa	23.3
Dry Lake 1 Loop	17.4	NA	4.0	13.4	MM Coyote Springs	3.0 c/
Dry Lake 2 Loop	22.3	NA	11.3	11.0	NA	NA
Goodsprings	13.6	NA	13.6	NA	NA	NA
CALIFORNIA						
Goodsprings	102.5	20.0	30.6	51.9	Invapah	11.5
					Superior-Cronese	27.5
Daggett	82.0	14.0	11.0	57.0	Ord-Rodman	1.7
					Fremont-Kramer	16.3
Project Total	318.8	58.7	84.0	162.3		102.9 d/

a/ Includes areas not previously classified but which had tortoise sign present during field surveys.

b/ NA = habitat in this category would not be crossed by this loop.

c/ Adjacent to critical habitat area for this distance. Pipeline route parallels, but does not cross Apex Disposal Road, which is the boundary of critical habitat area.

d/ Does not include 3.0 miles of the Mormon Mesa Coyote Springs critical habitat unit adjacent to the project.

Based on the proposed construction right-of-way configuration, construction would affect about 3,765.0 acres of desert tortoise habitat. Of this total, about 1,653.2 acres would be previously undisturbed land, and approximately 541.6 acres would be within designated desert tortoise critical habitat (see table 4.7.2-2 (page 4-131)). Although the right-of-way would be restored following agency-approved site-specific Reclamation Plans (see section 4.5.2), future conditions of the pipeline alignment could harm desert tortoises if restoration is not successful for an extended period, or if non-native plant species out-compete native annuals and perennials necessary to the tortoise. If the right-of-way does recover a native annual and perennial plant composition similar to that currently found along the alignment, the impacts on tortoise habitat may be of shorter duration.

Construction of the project would contribute to a decline in value of a linear strip of habitat. This decline would be inconsistent with goals defined by the BLM for Category 1, 2, and 3 lands. To compensate for desert tortoise habitat affected during construction, KRGT would implement the following measures:

- Impacts on desert tortoise habitat would be offset through either an acceptable land acquisition or an assessed financial contribution. Compensation rates would be as follows:

  a. 5:1 for new disturbance in tortoise critical habitat;

  b. 3:1 where overlapping previously disturbed tortoise critical habitat; and

  c. 1:1 for all non-critical habitat.

- KRGT would provide funding to a third party to be used for desert tortoise habitat acquisition, including enhancement and management (endowment) fees. KRGT proposes to enter into a Memorandum of Agreement with the FWS and The Conservation Fund, a third-party organization specifically identified by the FWS through which KRGT could implement desert tortoise mitigation for impacts in Utah and Nevada. In California, KRGT proposes to provide monetary compensation to the CDFG through a third party. KRGT is currently in negotiations with the Desert Tortoise Preserve Committee (DTPC) to develop a third-party agreement between the DTPC, KRGT, and the CDFG outlining KRGT's commitment to use the DTPC for meeting desert tortoise compensation requirements on private lands crossed by the project. KRGT would pay compensation fees directly to the BLM for public lands crossed in California. If required, KRGT would post the necessary bond or letter of credit to guarantee with the BLM and the CDFG and/or the CSLC to ensure that mitigation would be implemented. Tables 4.7.2-1 (page 4-130) and 4.7.2-2 (below) provide an estimate of impact on critical habitat areas based on surveys conducted for the existing KRGT pipeline and the expected construction footprint for the proposed project. The final mitigation acreage would be based on actual construction impacts.

TABLE 4.7.2-2

Desert Tortoise Habitat Affected by the Kern River 2003 Expansion Project

Facility	Habitat Type	Length (miles)	Total Area Affected (acres)	Previously Disturbed Areas Affected (acres)	Total Extra Workspace Area Affected (acres)	Previous Extra Workspace Area Affected (acres)	Total Undisturbed Land Affected (acres)
Veyo Loop	Critical	45.9	666.8	415.8	25.2	1.9	274.3
	Non-critical	35.2	484.1	308.2	27.4	3.5	199.8
Veyo Loop Total		81.1	1,150.9	724.0	52.6	5.4	474.1
Dry Lake Loops 1 and 2	Critical	0.0	0.0	0.0	0.0	0.0	0.0
	Non-critical	39.7	433.1	299.5	100.1	35.7	198.0
Dry Lake Loops 1 and 2 Total		39.7	433.1	299.5	100.1	35.7	198.0
Goodsprings Loop	Critical	39.0	474.5	320.9	54.8	21.9	186.4
	Non-critical	77.0	835.6	528.3	150.4	107.3	350.4
Goodsprings Loop Total		116.0	1,310.1	849.2	205.2	129.2	536.8
Daggett Loop	Critical	18.0	201.7	126.3	9.0	3.6	80.9
	Non-critical	64.0	669.2	387.1	143.5	62.3	363.4
Daggett Loop Total		82.0	870.9	513.4	152.5	65.9	444.3
Critical Habitat Total		102.9	1,343.0	863.0	89.0	27.4	541.6
Non-Critical Habitat Total		215.9	2,422.0	1,523.1	421.4	208.8	1,111.6
Project Total		318.8	3,765.0	2,386.1	510.4	236.2	1,653.2

Acquisition and protection of the compensation acreage would offset the effects of habitat loss. In addition to the loss of potential habitat, tortoises could be killed or injured as a result of being crushed by vehicles, movement of soil, or entrapment in burrows or open trenches. Earth moving equipment could crush tortoises that remain in undetected burrows, or tortoises could wander into the construction work area into the path of vehicles. Tortoises could also suffer injury or death if they fall into the uncovered trench or venture into pipe segments during construction. In order to minimize the extent of injury, death, and harassment of tortoises during construction of the proposed project, KRGT would conduct an agency-approved preconstruction survey in areas of suitable habitat to identify actual tortoise locations and take appropriate measures, in accordance with specified guidelines, to either protect or relocate burrows and tortoises. The primary means to reduce the immediate danger of tortoises during construction would be through relocation. However, relocation could also impose physical stress on relocated individuals. Therefore, KRGT developed 39 conservation measures to minimize potential impacts on desert tortoises during construction. These proposed conservation measures are listed in their entirety in appendix S. Some of the measures are summarized below.

- KRGT would designate a field contact representative (FCR) who would be responsible for overseeing compliance with protective stipulations for listed species. The FCR would be onsite during all project activities. The FCR would have the authority to halt all activities that are in violation of the stipulations. The FCR would have a copy of all stipulations when work is being conducted on the site. The FCR could be a project manager, KRGT representative, or a contract biologist.

- KRGT would submit the names and a statement of qualifications of all proposed authorized biologists to the BLM and the FWS, and the CSLC and the CDFG in California, for review and approval at least 30 days before initiation of any desert tortoise clearance surveys. Project activities would not begin until authorized biologists have been approved.

- KRGT would restrict all activities to the right-of-way and approved access roads/storage areas. If unforeseen circumstances require expansion of this width, the potential expanded work areas would be surveyed for desert tortoise before use of the area.

- Within desert tortoise range, authorized biologists would conduct preconstruction surveys of the right-of-way as follows:

  a. Within suitable tortoise habitat: During the tortoise active season (March 1 - October 31), or when temperatures and environmental conditions are conducive to tortoise activity, as determined by the authorized biologist, two surveys would occur. The first survey would be conducted within 14 days before surface disturbance. The second survey would occur immediately before surface disturbance. During the inactive season (November 1 - February 28) and as noted above, one survey would occur within 72 hours of surface disturbance.

  b. Outside suitable tortoise habitat: During the desert tortoise active season, or as stipulated above, a survey would be conducted between 7 and 21 days before surface disturbance. A second survey would occur immediately before surface disturbance unless the BLM and the FWS, and the CSLC and the CDFG in California, concur that a second survey is not required. During the inactive season, one survey would occur within 72 hours of surface disturbance. The jurisdictional Federal land manager would determine which areas are suitable desert tortoise habitat on public land.

- All desert tortoise burrows or pallets in the construction zone that cannot be avoided would be excavated by an authorized biologist or blocked. All desert tortoise burrows and pallets that fall outside of the right-of-way but within 50 feet of the construction work area, would be flagged for avoidance. All handling of desert tortoises and their eggs and excavation of burrows would be conducted by an authorized biologist in accordance with recommended protocol (Desert Tortoise Council, 1999).

- Desert tortoises that are found aboveground and need to be moved from harm's way would be placed in the shade of a shrub in adjacent undisturbed habitat a minimum of 300 feet from the right-of-way where access is available. Where access is restricted, tortoises would be placed under a shrub as far from the right-of-way as possible. All desert tortoises removed from burrows would be placed in an unoccupied burrow of approximately the same size as the one from which it was removed.

- Desert tortoises would only be moved by an authorized biologist and solely for the purpose of moving the tortoises out of harm's way. Tortoises excavated from unavoidable burrows along the route would be relocated to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or natural burrow would be located 150 to 300 feet from the original burrow and would be similar in size, shape, and orientation to the original burrow. Relocated tortoises would not be placed in existing occupied burrows. Procedures for handling tortoises would follow those described in *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council, 1999).

- Desert tortoises moved during inactive periods would be monitored for at least 2 days after their placement in the new burrows to ensure their safety. The authorized biologist would be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely.

- The Dry Lake Compressor Station, and any proposed modifications at the Goodsprings Compressor Station, would include a tortoise-proof fence around the facility. Before grading activities, the site would be fenced and surveyed for the presence of desert tortoises. No construction activities would begin until two consecutive surveys yield no individuals.

- Whenever a vehicle or construction equipment is parked longer than 2 minutes in desert tortoise habitat, the ground around and under the vehicle or equipment would be inspected for desert tortoises before the vehicle or equipment is moved. If a desert tortoise is observed, it would be left to move on its own. If this does not occur within 15 minutes, an authorized biologist would remove and relocate the tortoise.

- Within desert tortoise habitat, any construction pipe, culvert, or similar structure with a diameter greater than 3 inches stored less than 8 inches above the ground on the construction site for one or more nights would be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored on the construction site.

- Open trenches and other open excavations would be fenced with temporary tortoise-proof fencing, covered at the close of each work day, or provided with tortoise escape ramps. All excavations in tortoise habitat would be inspected periodically throughout and at the end of each work day and immediately before backfilling. Temporary tortoise-proof fencing would consist of silt fence buried at least 6 inches and supported by wooden stakes.

In its comments on the draft EIS/EIR, the CDFG expressed concern that neonates and juveniles could be killed by falling into the open trench. While the majority of project construction is expected to occur during the desert tortoise hibernation/estivation period, construction could continue into February, a time of increasing neonate juvenile dispersal. Therefore, **the Agency Staffs recommend the following measure:**

- **If active construction in desert tortoise habitat would continue after January 31, KRGT shall coordinate with the FWS, the BLM, and the CDFG (in California) to identify site-specific locations where KRGT would install temporary tortoise-proof fence or cover open trenches at the end of each work day. The results of these consultations shall be filed with the FERC and the CSLC before construction in desert tortoise habitat may continue after January 31.**

KRGT would apply water to the construction right-of-way for dust control and to the topsoil piles as necessary to prevent the loss of topsoil due to wind erosion (see sections 4.2.3.1, 4.3.2.11, and 4.11.1.3). The application of water in desert areas could attract desert tortoises to the construction right-of-way. KRGT may be able to reduce the applications of water to the construction right-of-way by adding a non-toxic, organic tackifier to the dust control water in desert tortoise habitat during the tortoise active season (generally March 1 to October 31). However, the effectiveness of tackifier is dependent on the structure and moisture holding capabilities of the soil. Frequently these soil properties can only be determined after the removal of the topsoil and application of water. KRGT does propose to apply tackifier to segregated topsoil piles in areas designated as highly susceptible to wind erosion in table 4.2.2-1 (page 4-32). During the desert tortoise active season, an authorized biologist would be assigned to patrol each area being watered. The biological monitor would patrol the area immediately after the water is applied and at approximate 60-minute intervals until the ground is no longer wet enough to attract tortoises.

The majority of disturbance to tortoises would occur during construction. However, ongoing operation and maintenance of the pipeline could also adversely affect the desert tortoise. Pipeline maintenance would require periodic travel into tortoise habitat via existing access roads. Tortoises could be crushed by vehicles during inspections. To supplement its Desert Tortoise Assessment, KRGT prepared a Maintenance Addendum that discusses conservation measures that would be implemented during various potential maintenance activities (see appendix S). The conservation measures to be applied during maintenance are generally consistent with those to be implemented during construction and would minimize impacts on desert tortoises during maintenance activities or provide a mechanism to mitigate for unavoidable impacts.

Predation is a serious threat, primarily for juvenile tortoises. Pipeline markers could provide perches for aerial predators in areas where natural perches are not available. KRGT has agreed to fit all pipeline marker signs within desert tortoise habitat with "bird-be-gone" or similar bird repellent devices to minimize the potential for increased predation from aerial predators during operation of the proposed pipeline (see appendix S).

The proposed project would cross a Large Scale (desert tortoise) Translocation Site between MPs 564.8 and 578.5. This area is an experimental site for relocation of desert tortoises affected by development activities within and near Las Vegas. Tortoise densities within this translocation site are about 10 times greater than densities outside of the area. Through consultation with the FWS, KRGT agreed to implement the conservation measures for critical habitat for construction through the translocation site, even though the area is not critical habitat. These measures are provided in appendix S.

Although KRGT's proposed conservation measures would reduce impacts on the desert tortoise and its habitat, the quality of habitat crossed and the number of desert tortoise that are likely to be encountered lead to a conclusion that construction and operation of the Kern River 2003 Expansion Project is *likely to adversely affect* the desert tortoise and its designated critical habitat. The proposed action as described would not, however, make any irreversible or irretrievable commitments of resources that would foreclose

formulation or implementation of any reasonable or prudent alternatives needed to avoid jeopardizing the continued existence of the species and adverse modification of its critical habitat.

Virgin River (Moapa) Chub (FWS, BLM, UT, NV)

The Virgin River chub is a federally and Utah-listed endangered species and receives protection under NRS 501 in Nevada. The Virgin River chub is a minnow that generally occupies swift, shallow, sand-bottomed streams associated with the Virgin River system.

Although this species is thought to occur in the counties crossed by the Veyo, Dry Lake 1 and 2, and Goodsprings Loops, the only waterbody it inhabits that is crossed by the pipeline route is the Muddy River (Sjoberg, 2001). The FWS recommended avoiding construction in the Muddy River from April 1 through July 31 to avoid the spawning period for the Virgin River chub. Further, the FWS recommended that KRGT complete the Muddy River crossing using a dry crossing method (*i.e.*, flume or dam and pump). KRGT proposes to complete the crossing of the Muddy River using the flume method before April 1 (see section 4.3.2.9 and table 4.6.2-2 (page 4-116)). Although sediment could be released into the waterbody during installation and removal of the in-stream barriers associated with the flume method, the resulting temporary changes in water quality and foraging ability would not likely affect the chub. Therefore, through implementation of KRGT's proposed crossing method, the project is *not likely to adversely affect* the Virgin River chub.

Ute Ladies'-Tresses

The Ute ladies'-tresses is a federally threatened orchid and is considered sensitive by the BLM and critically endangered in Nevada under NRS 507. The Ute ladies'-tresses inhabits wet meadows, stream banks, abandoned oxbow meanders, marshes, and raised bogs. Because the specific range of this species is not known, general habitat surveys were conducted in coordination with wetland delineations along the proposed route in Wyoming and Utah in spring 2001. Potential habitat was identified along the Opal, Muddy Creek, Coyote Creek 1, Salt Lake, Elberta, and Fillmore Loops.

Species-specific surveys for the Ute ladies'-tresses were conducted in August and September 2001 to coincide with this species' flowering period. Surveys included all potential habitat areas identified in Wyoming and Utah during wetland delineations conducted in spring 2001 and included a review of habitat quality. No individuals or populations of Ute ladies'-tresses were identified during the late summer surveys. However, the FWS reported that much of Wyoming experienced drought conditions during 2001 and recommended follow-up surveys be conducted in areas of moderate-to-high quality potential habitat during the 2002 flowering season (July 20 - August 31). The FWS also recommended that if Ute ladies'-tresses are found during the follow-up surveys, KRGT should bore under the population or adjust the route. KRGT's late summer surveys identified five areas of moderate quality habitat and no areas of high quality habitat in Wyoming. KRGT agreed to conduct follow-up surveys for Ute ladies'-tresses at the five areas of moderate quality habitat (MPs 0.63, 0.83, 1.33, 27.3, and 34.9); however, KRGT did not agree to avoid the plant populations if Ute ladies'-tresses are identified during the follow-up surveys. Therefore, to minimize potential impacts on Ute ladies'-tresses if they are identified within areas to be disturbed by construction, **the Agency Staffs recommend the following measure:**

- **If a population of Ute ladies'-tresses is identified at MPs 0.63, 0.83, 1.33, 27.3, or 34.9, KRGT shall bore the area or adjust its route to avoid impacting this species, unless otherwise permitted by the FWS. Such route modifications shall be filed with the FERC for the review and written approval of the Director of OEP <u>before construction</u>.**

By implementing the Agency Staffs' recommendation, the proposed project is *not likely to adversely affect* the Ute ladies'-tresses.

4.7.2.1 Cumulative Impacts

Section 7 of the ESA requires the Federal action agency to provide an analysis of cumulative effects when it requests initiation of formal consultation. Under the ESA, cumulative effects include the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered because they would require a separate consultation pursuant to Section 7 of the ESA.

Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Several other existing or planned activities in the general vicinity of the Kern River 2003 Expansion Project could have a cumulative impact when considered with the proposed project (see section 4.13). In general, the projects that are most likely to have a cumulative impact on listed species are those that have a potential to affect the same wildlife or vegetation as the proposed project.

It is not possible to speculate on potential acreage affected or the extent to which any given species would be affected by the other activities in the project area because the Agency Staffs have no control over actual routes, facilities, or project feasibility. However, the Kern River 2003 Expansion Project, considered together with other non-Federal actions, is not likely to appreciably reduce the likelihood of survival and recovery of the species considered in this analysis for the following reasons:

- Construction would occur within or adjacent to existing rights-of-way for 99 percent of the proposed route.
- The effects of the proposed project on listed species habitats would be reduced through revegetation and restoration efforts.
- The implementation of KRGT's proposed species-specific conservation measures (including offsite compensatory mitigation) and the additional recommendations of the Agency Staffs would reduce the potential effects on federally listed species to less than significant levels.

4.7.2.2 Summary of Determinations of Effect for Federally Listed Species

KRGT, acting as the FERC's non-Federal representative for purposes of complying with Section 7 of the ESA, informally consulted with the FWS regarding the presence of federally listed or proposed listed species in the project area. Based on these consultations, KRGT determined that 24 federally listed, proposed listed, or candidate species potentially occur in the general vicinity of (within the counties crossed by) the project. After further consultations with the FWS, the BLM, and the respective state wildlife agencies, KRGT conducted surveys of the pipeline route during 2001 to identify the presence of listed species in the project area. After completing the field surveys, KRGT submitted its survey reports and conservation plans to the FERC, the BLM, the FWS, and the CSLC. On the basis of KRGT's field survey reports, analysis of the potential effects of the proposed action, and informal consultations with the FWS, the Agency Staffs developed a determination of effect for all of these species. Table 4.7.2-3 (page 4-137) summarizes effects for federally listed, proposed, and candidate species potentially occurring in the vicinity of the Kern River 2003 Expansion Project.

The FWS commented that unmitigated impacts from construction and operation of the existing KRGT pipeline will require mitigation. The determinations of effect, as noted in table 4.7.2-3 (page 4-137), were based on conservation measures described above, which are sufficient to reduce project impacts to below levels of significance. Consultation and coordination with state and Federal agencies with jurisdiction along the project route has facilitated development of improved conservation measures that would minimize the potential for unmitigated impacts. Additionally, the use of monitors during construction, post-construction inspections, and appropriate enforcement of agreements by regulatory agencies would ensure implementation of conservation measures during and following construction.

TABLE 4.7.2-3

Determination of Effects for Federally Listed Species Potentially Occurring Along the Kern River 2003 Expansion Project Pipeline Route

Species	Determination	Justification
Birds		
Bald eagle *Haliaeetus leucocephalus*	May affect - is not likely to adversely affect	Individuals are not likely to be present along the project route. If present, they are not likely to adversely respond to impacts associated with the proposed facilities. Construction would be outside of the nesting season. Individuals potentially encountered would likely avoid construction disturbance.
Least Bell's vireo *Vireo bellii pusillus*	No effect	Suitable habitat not present along the project corridor.
Mountain plover *Charadrius montanus*	May affect - is not likely to jeopardize	Suitable habitat present in the project area; individuals observed during 2001 surveys. Construction may overlap brood-rearing period. KRGT has developed adequate mitigation through agency consultation.
Southwestern willow flycatcher *Empidonax traillii extimus*	May affect - is not likely to adversely affect	Suitable habitat is largely absent from the project corridor.
Western yellow-billed cuckoo *Coccyzus americanus*	May affect - is not likely to adversely affect a/	Suitable habitat is largely absent from the project corridor.
Whooping crane *Grus americana*	No effect	Species is not likely to occur in the project area.
Mammals		
Black-footed ferret *Mustela nigripes*	May affect - is not likely to adversely affect	Loss of suitable habitat would be minor and temporary. No individuals noted during surveys.
Canada lynx *Lynx canadensis*	No effect	Suitable habitat not present along the project corridor.
Gray wolf *Canis lupus*	No effect	Species is not likely to occur in the project area.
Utah prairie dog *Cynomys parvidens*	May affect - is likely to adversely affect	Individuals occur within the proposed construction right-of-way. Construction could result in direct mortality of individuals and impact active burrow complexes.
Amphibians		
Boreal toad *Bufo boreas boreas*	No effect a/	Suitable habitat not present along the project corridor.
Columbia spotted frog *Rana luteiventris*	No effect	Suitable habitat not present along the project corridor.
Reptiles		
Desert tortoise *Gopherus agassizii*	May affect - is likely to adversely affect	Individuals occur within the proposed construction right-of-way and would require relocation. Critical habitat would be affected.
Fish		
June sucker *Chasmistes liorus*	No effect	Suitable habitat not present along the project corridor.
Mojave tui chub *Gila bicolor mohavensis*	No effect	Suitable habitat not present along the project corridor.

TABLE 4.7.2-3 (cont'd)

Determination of Effects for Federally Listed Species Potentially Occurring Along the Kern River 2003 Expansion Project Pipeline Route

Species	Determination	Justification
Virgin River chub *Gila seminuda*	May affect - is not likely to adversely affect	This species is likely to occur in the Muddy River. Construction methods and timing in this waterbody would adhere to agency recommendations and minimize impacts on this species.
Plants		
Arctomecon humilis Dwarf bearclaw poppy	No effect	Surveys indicate species is not found in the project area. Outside of known range of species.
Astragalus ampullarioides Shivwits or Shem milkvetch	No effect	Surveys indicate species is not found in the project area.
Astragalus desereticus Desert milkvetch	No effect	Surveys indicate species is not found in the project area.
Astragalus holmgreniorum Holmgren milkvetch	No effect	Surveys indicate species is not found in the project area.
Opuntia whipplei var. multigeniculata Blue diamond cholla	No effect a/	Surveys indicate species is not found in the project area.
Pediocactus sileri Siler pincushion cactus	No effect	Surveys indicate suitable habitat is not found in the project area.
Phacelia argillacea Clay phacelia	No effect	Surveys indicate species is not found in the project area.
Spiranthes diluvialis Ute ladies'-tresses	May affect - is not likely to adversely affect	Although this species was not found during 2001 botanical surveys, as requested by the FWS, KRGT would resurvey potential habitat in 2002. If found, impacts on this species would be avoided through the Agency Staffs' mitigation measure to bore the identified population or modify the route.

a/ This species is a federally designated candidate species and is not afforded protection under the ESA.

4.7.3 Federally Designated Special Status Species

In addition to the federally listed endangered or threatened species discussed in section 4.7.2, initial consultations with the FWS, the BLM, and the FS identified 97 federally designated special status species that may occur in the project area. These consultations generally consisted of either presenting sensitive species lists to agencies to solicit responses regarding the adequacy of the lists (*e.g.*, most state agencies) or meeting with the agencies to identify specific species concerns. The BLM maintains state Sensitive Species Lists that identify rare or protected species of concern to the BLM in a given state. Specific BLM Field Offices were consulted in order to narrow the state lists to species with the potential to occur along the Kern River 2003 Expansion Project. As a result, this analysis includes species on the BLM Sensitive Species Lists that were initially determined by the BLM Field Offices to be of potential concern along the project. Based on subsequent agency contacts and other information, 47 of these species are not likely to occur near the pipeline route and would not be affected by the project (see table R-1 in appendix R (pages R-1 through R-5)). These species were therefore eliminated from further consideration in this EIS/EIR. The remaining 50 species could potentially occur along the pipeline route. Except for the white-tailed prairie dog, which was jointly discussed with the black-footed ferret in section 4.7.2, these remaining species are discussed below. In some cases, several species are discussed together because they share similar habitats or traits.

Raptors (BLM, CA)

In consultation with appropriate agencies, it has been determined that nine raptor species could potentially occur in the vicinity of the proposed pipeline route. These nine species are listed in table 4.7.3-1 (below) (also see table 4.7.1-1 (page 4-119)). Four of these raptors, the ferruginous hawk, northern goshawk, peregrine falcon, and Swainson's hawk, are listed by the BLM as sensitive species. The remaining five raptors, the American kestrel, golden eagle, northern harrier, prairie falcon, and red-tailed hawk, although not on the BLM's lists of sensitive species, are considered sensitive based on Federal protection afforded raptors under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. These species are also assigned various statuses by the States of Utah, Nevada, and California.

TABLE 4.7.3-1

Raptors Potentially Occurring Along the Kern River 2003 Expansion Project Pipeline Route

Species	Typical Breeding Season	Suitable Nesting Habitat Identified Along the Pipeline Route a/	Individuals Observed During Spring 2001 Field Surveys
American kestrel	April - September	None noted during surveys	None noted during surveys
Ferruginous hawk	March - late July	Wyoming: MPs 14.0, 16.0-22.0, and 26.0 Utah: MPs 166.0-182.0	Yes - Wyoming and Utah
Golden eagle	February - August	Wyoming: MPs 14.0 and 16.0-22.0 Utah: MPs 166.0-174.0 and 178.0-180.0	Yes - Wyoming and Utah
Northern goshawk	April - late July	None noted during surveys	None noted during surveys
Northern harrier	April - mid July	None noted during surveys	None noted during surveys
Peregrine falcon	Early March - late August	Wyoming: MPs 14.0, 16.0-22.0, and 26.0	None noted during surveys
Prairie falcon	April - July	Wyoming: MPs 14.0, 16.0-22.0, and 26.0 Utah: MPs 166.0-174.0, and 178.0-180.0	Yes - Wyoming and Utah
Red-tailed hawk	February - September	Wyoming: MPs 14.0, 16.0-22.0, and 26.0 Utah: MPs 166.0-174.0, and 178.0-180.0; powerline stanchions Nevada: powerline stanchions California: powerline stanchions	Yes - Wyoming and Utah
Swainson's hawk	March - August	Utah: powerline stanchions	None noted during surveys

a/ Based on 2001 field surveys.

Field surveys identified suitable foraging habitat for raptors along much of the proposed project corridor. In addition, powerline stanchions, which are relatively common in the project area, could provide suitable nesting platforms for most raptor species. Suitable nesting habitat, other than powerline stanchions, was limited to relatively few locations along the proposed pipeline corridor, primarily along the Muddy Creek and Salt Lake Loops. Potential habitat was also identified along five access roads (near MPs 14.4, 90.3, 137.4, 237.5, and 412.5) and three off right-of-way yards. Individuals of several species were also observed in the general vicinity of the proposed project area during field surveys.

As shown in table 4.7.3-1 (page 4-139), suitable breeding habitat for several raptor species is present in the project vicinity. The greatest potential impact on raptors would be the lowering of reproductive success through the disruption of nesting or breeding activities. Impacts on breeding habitat would be minor. The majority of suitable breeding sites are associated with powerline stanchions. These sites would not be affected by construction. However, construction near nests along the corridor during brood rearing could result in nest abandonment; overheating, chilling, or desiccation of unattended young causing nestling mortality; premature fledging; and ejection of eggs or young from the nest. Disturbances of this nature could be considered a violation of the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

KRGT proposes to complete aerial surveys during the breeding season in the spring of 2002 to determine if active raptor nests are present near or within the proposed construction right-of-way along the Opal, Muddy Creek, Coyote Creek 1 and 2, Salt Lake, Elberta, and Fillmore Loops. The surveys would cover 1 mile on either side of the outside edge of the construction work area. If active nests are identified during aerial surveys, KRGT would follow the FWS' established guidelines (*Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances*; FWS, 2002) to protect raptors from human disturbances, unless site-specific treatment of a nest is approved by the local FWS field office, the BLM, and the UDWR (for nests in Utah) that takes into account the status of the nest, the proposed construction schedule, and the location of the nest.

In California, raptors are provided additional protection under Section 3503.5 of the California Fish and Game Code. As such, the CDFG has recommended that if raptors are found nesting within the state, KRGT not conduct work within 1,000 feet of active raptor nests. However, KRGT has agreed to exceed this recommendation by adhering to the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbance* (FWS, 2002), which call for establishing a spatial buffer of at least 1,320 feet around active raptor nests.

The UDWR expressed concern about the potential for aerial surveys conducted in the early breeding season to miss late arriving and late nesting raptors. Because optimal survey dates may vary from year to year depending on the severity of the winter, KRGT proposes to continue coordinating with the state and Federal agencies to develop the appropriate survey dates based on the 2001/2002 winter conditions.

Construction along the portion of the project in the Mojave Desert (about MPs 406.5 to 681.9 (Veyo, Dry Lake 1 and 2, and Goodsprings Loops) through MPs 0.0 to 82.4 (Daggett Loop)) is currently scheduled to begin in November 2002 and be completed in May 2003. Therefore, although suitable nesting habitat may be present along the project corridor in the form of Joshua trees and adjacent powerline stanchions, the breeding season would be largely avoided by KRGT's construction schedule. However, the potential exists for raptors to initiate nesting along the right-of-way in late April or early May. Individuals nesting in a location where construction has yet to begin could be disturbed, resulting in unsuccessful breeding efforts. To ensure nesting raptors are not disturbed during construction along the Mojave Desert portion of the project, KRGT would conduct preconstruction surveys for raptors in the Mojave Desert in accordance with methods and timing recommendations obtained through consultation with the FWS, the BLM, and applicable state agencies. If nesting raptors are identified during these surveys, KRGT would follow the *Utah Field*

Office Guidelines for Raptor Protection from Human and Land Use Disturbances (FWS, 2002), unless other site-specific conservation measures are approved by the applicable agencies.

Installation of powerlines and poles to supply power to the Coyote Creek and Dry Lake Compressor Stations could result in raptor electrocution or collisions with powerline structures. To avoid raptor collisions and electrocution due to KRGT's associated powerline facilities, KRGT would provide written instructions to the utility companies constructing the powerlines requiring that the powerlines comply with applicable raptor protection guidelines, including *Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 1996* (Avian Power Line Interaction Committee, 1996). By implementing the proposed conservation measures, KRGT would minimize the potential for the project to affect raptors to less than significant levels.

Riparian Migratory Birds (FWS, BLM, UT, NV, CA)

The migratory bird species included in this section are FWS-designated species of concern, and are considered sensitive species by the BLM. They are also assigned various statuses by the States of Utah, Nevada, and California (see table 4.7.1-1 (page 4-119)). These species include Arizona Bell's vireo, blue grosbeak, gray flycatcher, Lucy's warbler, phainopepla, summer tanager, and Vermilion flycatcher. The preferred and principal breeding habitat of these species is dense, shrubby, mostly riparian vegetation, including mesquite woodland.

KRGT identified riparian vegetation near the crossing location of Meadow Valley Wash (MP 474.2) and along the Muddy River (MP 477.1). Based on the proposed construction schedule, work in these riparian areas is planned for late fall and early winter, and would avoid the breeding season of migratory birds (late spring). However, construction through these areas could result in long-term removal of breeding habitat. The FWS and the BLM are particularly concerned about a potential loss of breeding habitat in the case of the phainopepla, which breeds only in mesquite woodlands. The FWS has records of 100-year-old mesquite woodlands in the Meadow Valley Wash area (Krueger, 2001a) and recommended that KRGT avoid cutting mesquite trees during construction.

To address this concern, KRGT proposes to locate the pipeline in the Meadow Valley Wash area in a previously disturbed area between the existing KRGT right-of-way and an existing powerline. Surveys did not identify any mesquite trees in this area. Therefore, no clearing of mesquite trees would be necessary near Meadow Valley Wash. The FWS and the BLM assessed the quality of mesquite stands potentially affected by construction along the Muddy River and reported that vegetation is largely absent from the construction work area in the vicinity of the Muddy River. Therefore, the proposed project is not expected to affect nesting habitat for riparian birds in this area. Additionally, KRGT's site-specific Reclamation Plans, developed in consultation with the BLM and other resource agencies, specifically discuss restoration of riparian areas.

Although the Muddy River and Meadow Valley Wash area do not contain defined riparian vegetation within the proposed right-of-way, there is still a potential for the project to adversely affect birds nesting adjacent to the construction work area. Construction activities near an active nest could result in nest abandonment, reduced care of young causing mortality, or ejection of eggs or young from a nest. Additionally, construction near suitable habitat may preclude birds from selecting a nest site or may cause birds to select nest sites in less suitable habitat, potentially reducing nest success. To minimize potential impacts on nesting birds, KRGT has agreed to the FWS' recommendation that construction be completed in areas with defined riparian vegetation before May 1. KRGT proposes to have the majority of construction completed in these areas before March 1. However, access through these areas, as well as some restoration activities, may still be necessary past March 1. These activities would be less disruptive than trenching,

lowering-in, and backfilling and would not be expected to preclude nesting in the riparian habitat adjacent to the right-of-way. Therefore, although the loss of breeding habitat during construction of the proposed project could occur, with KRGT's implementation of the proposed conservation measures, potential impacts on sensitive migratory birds would be less than significant.

Bendire's Thrasher and LeConte's Thrasher (BLM, CA)

The Bendire's and LeConte's thrashers are listed as sensitive species by the BLM and species of special concern by the CDFG. The Bendire's thrasher uses both desert habitats with fairly large shrubs or cacti and open ground, and open woodland habitats with scattered shrubs and trees. The Bendire's thrasher generally avoids dense vegetation habitats (*e.g.*, riparian woodland, uninterrupted brushy cover) and continuous grasslands. The LeConte's thrasher is found in arid habitats, particularly cholla and creosote bush scrub communities, where it frequents open, desert washes and flats with scattered shrubs and large areas of open, sandy, or alkaline terrain. The Bendire's thrasher breeds from late February into early August, and the LeConte's thrasher breeds from late January into early June with a peak from mid March through mid April (CDFG, 2001).

Neither species was observed during spring 2001 field surveys; however, potential habitat was identified along the pipeline route and along access roads for both species in California. Habitat for the Bendire's thrasher was noted near the Clark Mountains, and habitat for the LeConte's thrasher was found near the end of the Goodsprings Loop and the beginning of the Daggett Loop. The CDFG reported several historical records of previous sightings for each species in these respective areas.

Construction of the pipeline project would involve clearing of suitable habitat and could result in destruction of nests and, if nests are occupied, direct mortality of individuals. The potential effects of construction on these species would depend on the number of nests within or adjacent to the right-of-way and the developmental stage of young in occupied nests.

Construction is currently scheduled in the California portion of the project from November through May, which overlaps the breeding period of both species. Based on this schedule, construction could affect nesting individuals, including the potential for mortality of nestlings. Through contacts with the BLM and the CDFG it was originally determined that neither agency would require specific mitigation to reduce potential impacts on these species. However, in its comments on the draft EIS/EIR, the CDFG reported recent evidence of an apparent significant decrease in Bendire's thrasher populations in California. Thrashers nesting near the right-of-way could be affected by noise and activity associated with construction. Spatial buffers could provide protection for nesting individuals. Consequently, the CDFG recommended that KRGT maintain a 1,000-foot buffer around active Bendire's thrasher nests. Other thrashers may initiate nesting in the vicinity of the project after construction has commenced. These individuals would likely be acclimated to construction-related disturbance and would not likely benefit from spatial buffers.

KRGT included both of these thrasher species in its formal application submitted to the CDFG for a Section 2081 Incidental Take Permit. It is expected that specific protection measures would be included in the Section 2081 Permit issued by the CDFG. However, to avoid contributing to a further decline in Bendire's thrashers in California, **the Agency Staffs recommend the following measure:**

- **KRGT shall conduct preconstruction surveys for nesting Bendire's thrashers in areas of suitable habitat that would be disturbed by construction activities. If any active Bendire's thrasher nests are found, KRGT shall adhere to the CDFG-recommended 1,000-foot buffer unless otherwise permitted by the CDFG.**

Additionally, KRGT's implementation of mitigation for desert tortoise impacts could indirectly benefit the Bendire's and LeConte's thrashers through the reestablishment and long-term protection of desert habitats. Along with the indirect benefits afforded these species through desert tortoise mitigation, implementation of the Agency Staffs' recommendation would reduce potential impacts on these species to less than significant levels.

Brewer's Sparrow, Sage Sparrow, and Sage Thrasher (BLM)

The Brewer's sparrow, sage sparrow, and sage thrasher are BLM-sensitive species closely associated with or dependent upon sagebrush communities. The preferred habitat of these species is a sparse (10 to 15 percent) cover of sagebrush interspersed with bare ground. In the project area, the breeding season for these species can begin in late April and extend into early June. Field surveys for these species were conducted during the late spring and early summer of 2001. No Brewer's sparrows, sage sparrows, or sage thrashers were observed; however, suitable habitat for these species was identified throughout much of the Wyoming portion of the pipeline route.

Construction of the project would involve clearing of suitable habitat and could result in destruction of nests and, if nests are occupied, direct mortality of individuals. Because the sagebrush community that would be disturbed by construction is fairly extensive off the right-of-way, individuals displaced by construction would relocate to adjacent habitats. Therefore, long-term impacts from the loss of habitat would not occur. The potential effects of construction on these species would depend on the number of nests within or adjacent to the right-of-way and the developmental stage of young in occupied nests. Given that abundant habitat for these species exists outside of the construction work area, and that these birds may tend to shy away from the sparsely vegetated, previously disturbed right-of-way when selecting nest sites, the number of nests potentially impacted during construction would likely be few. Additionally, the period of egg-laying through fledging of young generally takes less than 1 month for these species. Therefore, it is likely that the majority of nests along the right-of-way would be vacated before construction. The BLM and the UDWR were contacted to determine if additional surveys or mitigation would be necessary for these species. The agencies responded that impacts on these species were unlikely and specific mitigation would not be necessary. As a result, potential impacts on these species would be less than significant.

Burrowing Owl (FWS, BLM, UT, NV, CA)

The burrowing owl is considered a species of concern by the FWS; this species is also listed as a sensitive species by the BLM and as a species of special concern by the CDFG. The burrowing owl has experienced a substantial decrease in population and a loss of habitat in Utah. It is also protected under NRS 501 in Nevada. The historic range of the owl is throughout much of the western United States. Burrowing owls inhabit open, dry grasslands, deserts, and scrublands characterized by low-growing vegetation. Burrowing owls are subterranean nesters that typically use burrows made by small mammals or desert tortoises.

The potential impacts of the project on burrowing owls include disturbance of habitat and destruction of active burrows. Destruction of burrows could result in displacement of owls into less suitable habitats, potentially increasing susceptibility to predation, reducing cover or forage habitat, or reducing reproductive success. Direct mortality could result if active burrows are occupied at the time of destruction.

Surveys conducted in 2001 identified burrowing owl habitat along much of the proposed pipeline route and individual burrowing owls along the Elberta and Fillmore Loops. Follow-up surveys were conducted in April 2002 in areas of suitable habitat in Wyoming and Utah where construction would be likely to occur before August 31. No burrowing owls were observed in Wyoming. In Utah, 31 active

burrows and 14 adult burrowing owls were identified in five different areas between MPs 189 and 350. Burrows in two of these five areas are not located within the construction right-of-way and would not be directly disturbed by construction activities. The remaining three areas are located within the proposed construction right-of-way. In these areas, 12 active burrows and 6 adult burrowing owls were identified. Originally, the FWS and the UDWR recommended that burrowing owl nests be relocated at the time of spring surveys. In April 2002, the FWS and the UDWR reconsidered its previous recommendation based on the proposed construction start date of August 1 and recommended that burrowing owl nests not be relocated in the spring. The FWS and the UDWR expect that most young owls would fledge before the initiation of construction. As a result, the FWS and UDWR recommended that KRGT resurvey the areas with nesting owls in June or July to determine nesting status and then again immediately before the start of construction in those areas. If nests with unfledged young are identified during the surveys conducted immediately before construction, the FWS and the UDWR would work with KRGT to relocate any active nests.

In accordance with agency recommendations in Nevada and California, preconstruction burrowing owl surveys would be conducted concurrently with desert tortoise surveys. In areas where tortoise surveys would not occur until after February 2003, burrowing owl surveys would be conducted separate from and before the desert tortoise surveys. To minimize the potential for impacts on owls, KRGT would relocate burrowing owls from their burrows during preconstruction surveys. Burrowing owls would be relocated to artificial burrows constructed by KRGT or to naturally occurring, abandoned desert tortoise burrows. KRGT would crush all burrows on the right-of-way following relocations, unless owl surveys are separate from tortoise surveys, in which case active desert tortoise burrows would be treated during tortoise surveys.

Implementation of these mitigation measures would reduce impacts on the burrowing owl to less than significant levels.

Sage Grouse (BLM, UT)

The sage grouse is designated as a sensitive species by the BLM and is considered a species of special concern in Utah due to a declining population and limited range. Sagebrush is the primary year-round source of food for the sage grouse. Sagebrush also serves as the critical component in leks (breeding grounds), nesting, feeding sites, rearing sites, and wintering grounds. Although the sage grouse typically prefers taller sagebrush plants and stands for nesting and roosting cover, lekking grounds are generally open areas with low, sparse sagebrush, such as swales, meadows, and burned areas. Lekking grounds are generally surrounded by areas of 20 to 50 percent low-height, sagebrush cover. Secondary to sagebrush habitat, sage grouse require moist wetland and wet meadows to aid in brood rearing.

UDWR resource specialists and the BLM Fillmore and Cedar City Field Offices originally identified about 71 miles (MPs 285 to 356) of potential sage grouse habitat along the proposed pipeline route in Utah. Additionally, the WGFD identified the entire pipeline route (about 69.3 miles) in Wyoming as potential habitat. Based on this information, habitat-level surveys were conducted along the Fillmore Loop from May 29 through June 1, 2001 and along the Opal, Muddy Creek, and Coyote Creek 1 Loops from July 9 through July 12, 2001 to determine the actual extent and quality of sage grouse habitat along the pipeline route. Habitat quality was determined to be high, medium, or low quality based on an evaluation of sagebrush height and density, amount of available forage, patch size, and adjacency to other areas of suitable habitat. Of the approximately 144.0 miles surveyed, it was determined that about 92.6 miles are suitable habitat (see table 4.7.3-2 (page 4-145)). Of the suitable habitat, about 62.0 miles are high quality, 17.6 miles are medium quality, and 13.0 miles are low quality. The remaining 51.4 miles surveyed consisted of large patches of grassland, desert salt scrub, or agricultural lands and are considered unsuitable habitat.

TABLE 4.7.3-2

Sage Grouse Habitat Identified Along the Kern River 2003 Expansion Project Pipeline Route During 2001 Surveys

State/Facility	Habitat Quality	Habitat Cover Type	Distance Traversed
WYOMING			
Opal Loop	Low	—	—
	Medium	Sagebrush	3.5
	High	—	—
Opal Loop Total			3.5
Muddy Creek Loop	Low	Sagebrush	1.0
	Medium	Sagebrush	3.8
	High	Sagebrush	37.7
Muddy Creek Loop Total			42.5
UTAH			
Coyote Creek Loop 1	Low	—	—
	Medium	—	—
	High	Sagebrush	6.7
Coyote Creek Loop 1 Total			6.7
Fillmore Loop	Low	Sagebrush, sagebrush/grassland, sagebrush/pinyon pine-juniper, sagebrush/juniper/grassland	12.0
	Medium	Sagebrush	10.3
	High	Sagebrush	17.6
Fillmore Loop Total			39.9
Subtotal	Low	Sagebrush, sagebrush/grassland, sagebrush/pinyon pine-juniper, sagebrush/juniper/grassland	13.0
	Medium	Sagebrush, sagebrush/grassland	17.6
	High	Sagebrush	62.0
Project Total			92.6

Based on the proposed construction right-of-way width through areas identified as suitable sage grouse habitat, about 954 acres of sage grouse habitat would be cleared during construction of the proposed project. However, more than half of this acreage (about 542.2 acres) is located on previously disturbed land associated with the existing pipeline right-of-way, which is only sparsely vegetated and provides limited value habitat, primarily as alternate feeding areas for sage grouse broods.

The potential impacts of construction on sage grouse include the loss of suitable habitat, possible disruption of breeding activities or brood rearing, and direct mortality. Construction and operation of the Coyote Creek Compressor Station would result in the permanent conversion of about 30.9 acres of suitable habitat to industrial and grassland cover. Additionally, although the proposed project would not result in a permanent loss of habitat along the pipeline right-of-way, based on the condition of the existing right-of-way, the regeneration of sagebrush would be slow and could take up to several decades.

Most, if not all, grouse activity at the lekking grounds would be completed by August 1 (the earliest potential start date for construction) because grouse typically move from lekking grounds to brooding areas by late May. Although construction would result in the loss of brooding habitat, the majority of females and chicks that may be using this habitat would be expected to be mobile by late summer and capable of avoiding construction activities, thereby minimizing the potential for mortality. Individuals flushed or otherwise relocated from construction activities may be required to occupy suitable, but lower quality habitat, or may be more susceptible to predation, either while in lower quality habitat or during relocation to that habitat.

However, these factors would not result in high levels of mortality as disturbance and movements would be temporary.

Given the abundant suitable habitat in the general area adjacent to the construction right-of-way, it is not likely that the minor yet long-term loss of habitat along the pipeline right-of-way would affect sage grouse populations in the vicinity of the proposed project. However, the Coyote Creek Compressor Station would add to the cumulative degradation of habitat in the project area.

Preconstruction surveys were conducted in late March and early April 2002 to identify sage grouse occurring along the right-of-way and to assess the degree of activity at lekking sites. KRGT coordinated with the WGFD, the UDWR, and the BLM to determine the specific location and number of transects required for the 2002 surveys. Surveys were completed following agency-recommended protocols at historic lek locations within 2 miles of the proposed right-of-way in Wyoming, and between MPs 63 and 65, MPs 89 and 96, MPs 203 and 210, and MPs 285 and 348 in Utah. Surveys of some of the historic lek sites in Wyoming were not completed due to heavy snow conditions. KRGT proposes to complete surveys of these sites following snow melt. During the spring 2002 surveys, grouse activity was identified at five historic leks in Wyoming and at one lek in Utah. As recommended by the UDWR and the BLM, KRGT proposes to conduct brood surveys in June or July 2002 that would focus primarily on the areas of historic leks or other areas specified by the agencies. KRGT also proposes to conduct surveys immediately before construction through areas with high potential to contain sage grouse as identified by the UDWR. These areas include MPs 63 to 65, MPs 89 to 96, MPs 203 to 210, MPs 286 to 324, and MPs 332 to 348.

Potential impacts on sage grouse habitat would be minimized by collocating the proposed right-of-way with the right-of-way disturbed during construction of the existing KRGT pipeline. Additionally, critical breeding and brood rearing stages of sage grouse would be avoided by an August 1 construction start date. KRGT would recontour and reseed disturbed areas immediately following construction in accordance with its site-specific Reclamation Plans (see section 4.5.2.1). KRGT also proposes to make a contribution to either the BLM or the UDWR for assistance with sage grouse protection.

Given the abundant habitat for sage grouse adjacent to the proposed construction right-of-way and KRGT's implementation of its proposed mitigation, the project would result in less than significant impacts on sage grouse.

Desert Kangaroo Rat and Merriam's Kangaroo Rat (BLM, UT)

The desert kangaroo rat is a BLM-sensitive species with a declining population and limited range in Utah. The Merriam's kangaroo rat is a BLM-sensitive species with a restricted or specialized habitat in Utah. Both species are primarily nocturnal and generally occupy low deserts with sandy soil and sparse creosote bush scrub vegetation. They prefer sandier wash areas because the substrate is more amenable to digging burrows. Species-specific surveys for these species were not conducted; however, habitat for both species was identified throughout the Mojave Desert portion of the pipeline route in Utah. Scattered additional areas of suitable habitat were identified in Nevada and California.

Construction of the project could affect these species either by disturbing their habitat or by direct mortality of individuals (*e.g.*, the crushing of occupied burrows). Because the range of these species generally overlaps with that of the desert tortoise, KRGT's implementation of conservation measures for the desert tortoise would also reduce potential impacts on these species to less than significant levels.

Nelson's Bighorn Sheep (BLM)

The Nelson's bighorn sheep is listed as a sensitive species by the BLM. Nelson's bighorn sheep usually occur in small herds of about 10 animals in open, rocky, steep areas with available water and herbaceous forage. The sheep generally have two distinct, separate ranges in summer and winter, with corresponding spring and fall migrations. The summer ranges for Nelson's bighorn sheep are typically smaller than winter ranges due to their dependence on water sources in the summer. Potential habitat for the Nelson's bighorn sheep was identified along the Goodsprings Loop.

In the location where the Goodsprings Loop traverses the Clark Mountains in California, the right-of-way would cross through Keeney Pass and avoid the higher elevations generally inhabited by bighorn sheep. The NPS raised concerns about the project crossing a known migration route along the boundary of the Mojave National Preserve. This migration route is used in winter by sheep avoiding heavy snowfall at higher elevations. Direct impacts on individuals are not expected because Nelson's bighorn sheep would likely avoid construction activities. However, sheep could be indirectly affected if construction activities temporarily block the migration corridor during winter and expose the bighorn sheep to periods of heavy snowfall at higher elevations, thereby increasing their susceptibility to predation, starvation, and freezing.

The BLM noted that the pipeline would cross an area of bighorn sheep habitat between MPs 550.3 and 557.4 and between MPs 558.2 and 565.2. This area, which is part of the South Spring Mountain Bighorn Sheep Habitat Management Area, includes about 5 miles (MPs 552.2 to 557.4) of crucial habitat. This habitat is considered crucial because it is within 2 miles of a water source, specifically Wilson Tank at Tunnel Springs. Construction through this area could restrict access to the water source or limit travel corridors. This impact would, however, be temporary. Also, although the project would affect 222.8 acres of suitable habitat, this impact would not be significant (less than 1 percent) because approximately 111,000 acres of habitat are present in this habitat management area.

KRGT proposes to install trench plugs at a maximum of 1-mile intervals and at well-defined wildlife and livestock trails along the route. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench. Along with ramps to allow wildlife to escape the trench, the trench plugs would provide the bighorn sheep with a path across the open trench. Additionally, construction in the area of the bighorn sheep's migration route would occur only during daylight hours. Therefore, sheep would be able to traverse the project area from dusk until dawn with no active construction disturbance. These proposed conservation measures would facilitate movement of migrating Nelson's bighorn sheep to lower elevation winter ranges during construction. As a result, impact on Nelson's bighorn sheep would be less than significant.

Pygmy Rabbit and Wyoming Ground Squirrel (BLM, WY, UT)

The pygmy rabbit is considered sensitive by the BLM and a species of special concern by the WGFD. Pygmy rabbits are nearly completely dependent on tall, dense sagebrush habitat for forage and cover. The WNDD identified past pygmy rabbit occurrences within 1 mile of the proposed project near the end of the Muddy Creek Loop and the beginning of the Coyote Creek Loop 1. Based on 2001 surveys, suitable habitat for the pygmy rabbit is present along much of the proposed pipeline route in Wyoming.

No sightings of pygmy rabbits were reported during 2001 field surveys. However, KRGT would include pygmy rabbits as a target species during 2002 preconstruction surveys, as approved by the WGFD (Stelter, 2001). Where the proposed right-of-way traverses high quality rabbit habitat, KRGT would conduct

surveys for rabbits within 0.25 mile of the pipeline route. KRGT's primary conservation measure to minimize impacts on pygmy rabbits would be to avoid the rabbit's breeding season, which starts in February and ends in May. With construction currently planned to start after August 1 in areas potentially containing pygmy rabbits, adults and young would be able and expected to vacate the right-of-way ahead of construction. Following construction, KRGT would restore the right-of-way with sagebrush, native grasses, and forbs, as requested by the WGFD. Implementation of these measures would reduce potential impacts on the pygmy rabbit to a less than significant level.

The Wyoming ground squirrel is also considered sensitive by the BLM and is considered rare in Utah due to a limited range within the state. Wyoming ground squirrels inhabit well-drained slopes covered primarily by sagebrush. Although no sightings of Wyoming ground squirrels were reported, based on 2001 surveys, suitable habitat for the Wyoming ground squirrel is present along the Opal, Muddy Creek, and Coyote Creek 1 Loops. As previously discussed, KRGT proposes to conduct preconstruction surveys in 2002. KRGT would include the Wyoming ground squirrel as a target species during the preconstruction surveys. Following construction, KRGT would revegetate the right-of-way using seed mixes containing native and adapted forbs and grasses beneficial to the Wyoming ground squirrel and other species of concern that inhabit similar vegetative community types. Once reestablished following construction, the right-of-way corridor may provide higher quality habitat than is currently present. The UDWR has concurred (Kramer, 2001) that implementation of these measures would reduce potential impacts on the Wyoming ground squirrel to a less than significant level.

Ringtail (BLM, UT)

The ringtail is listed as a sensitive species by the BLM and is considered a species of special concern in Utah due to its restricted or specialized habitat. This cat-sized carnivore occurs in a variety of rocky habitats including jumbles of boulders, canyons, talus slopes, and rock piles, and can also be found in wooded habitats. Ringtails occur throughout much of the southwest, including central and southern Utah and southern Nevada. Field surveys identified suitable ringtail habitat along the Salt Lake, Elberta, Fillmore, and Veyo Loops in Utah. No suitable ringtail habitat was found along the pipeline route in Nevada.

Since the ringtail is almost exclusively nocturnal and construction would occur during daylight hours, it is not likely that the ringtail would be directly affected by construction activities. Ringtails could be indirectly affected by disturbance of foraging or denning areas (rocky areas, canyons, and hollowed trees). For the most part, however, the proposed route is located on lower bajada slopes and broad valleys and avoids the extreme topographic areas favored by the ringtail. Similarly, the potential for the project to cross active denning areas is low. Therefore, the potential for the project to adversely impact ringtails is less than significant.

Desert Iguana, Desert Night Lizard, and Sidewinder (BLM, UT)

The desert iguana, desert night lizard, and sidewinder are considered sensitive species by the BLM and species of special concern in Utah. This status in Utah is primarily attributed to these reptiles being desert species restricted to the extreme southwestern portion of the state. The desert iguana can be found in areas of creosote bush scrub and occasionally uses rodent burrows for shelter. The desert night lizard occupies semi-arid granite outcroppings and rocky areas among trunks of yuccas (including Joshua trees) and agaves. Sidewinders are found in arid deserts, flatlands, loose, sandy washes, and rocky areas, often in hummocks topped with creosote. Suitable habitat for these species was identified along the Veyo Loop.

Surveys for these species were not conducted due to their mobile and nocturnal nature. However, because all three species are generally common throughout the Mojave Desert region, they are likely to occur

along or near the pipeline route. Impacts on these species could include direct mortality due to crushing by construction equipment, reduction of suitable habitat, and temporary disturbance and displacement; however, these impacts are not expected to be significant. Although KRGT does not propose to develop species-specific mitigation, these species would be discussed in KRGT's environmental training program to raise the awareness of construction personnel regarding the presence and protection of special status species during construction. The environmental training would include educating the construction personnel not to harm or harass these or any species of wildlife encountered during construction. As a result, potential impact on these species would be less than significant.

Gila Monster (FWS, BLM, UT, NV, CA)

The Gila monster is classified as a species of concern by the FWS and a sensitive species by the BLM. It is also listed as endangered in Utah, receives protection under NRS 501 in Nevada, and is considered a species of concern in California. The Gila monster is a stout-bodied lizard that occupies desert and semi-arid shrublands with gravelly and sandy soils. Surveys were not specifically conducted for this reclusive, nocturnal species. However, based on its habitat requirements, the Gila monster has the potential to occur in desert habitats crossed by the proposed route and access roads along the Veyo, Dry Lake 1 and 2, Goodsprings, and Daggett Loops.

Construction of the proposed project could result in temporary displacement or direct mortality of individual Gila monsters, and temporary alteration of habitat. The NDOW stated that it was concerned with the potential effect of the project on the Gila monster (Hardenbrook, 2001). To minimize impacts on Gila monsters, KRGT would:

- relocate individuals identified along the right-of-way using measures set forth by the NDOW, which include the use of long-handled instruments to coax an individual into an open bucket or box;
- submit a report to the FWS, the BLM, and the NDOW following construction detailing the locations where Gila monsters were found and released;
- report all sightings of Gila monsters in California to the CDFG; and
- incorporate the following specific provisions into its construction environmental awareness program;
  - a. procedures to identify Gila monsters and distinguish them from other lizards such as chuckwallas and banded geckos;
  - b. a requirement for reporting observations of Gila monsters to the NDOW and a requirement that observations in California should also be reported to the CDFG;
  - c. consequences of a bite resulting from carelessness or unnecessary harassment of Gila monsters; and
  - d. protective measures for Gila monsters provided under Nevada state law.

KRGT's implementation of these measures would reduce potential impacts on the Gila monster to less than significant levels.

Mojave Fringe-toed Lizard (BLM, CA)

The Mojave fringe-toed lizard is classified as a sensitive species by the BLM and is designated a species of concern by the CDFG. The Mojave fringe-toed lizard occupies fine, loose, wind-blown deposits in sand dunes, dry lakebeds, riverbanks, desert washes, sparse alkali scrub, and creosote bush and desert shrub habitats.

During rare plant surveys conducted from April through early June 2001, potential habitat for the Mojave fringe-toed lizard was identified throughout the Mojave River wash system. Surveys were then conducted for the lizard in four suitable habitat locations according to the approved CDFG protocol on June 18 and 19, 2001. Individual Mojave fringe-toed lizards were identified at two of the four locations: between MPs 676.6 and 677.2 of the Goodsprings Loop and between MPs 17.0 and 18.0 of the Daggett Loop.

Impacts on Mojave fringe-toed lizards could include direct mortality, increased susceptibility to predation during displacement to adjacent habitats, and temporary loss of habitat. Because the lizards were observed near proposed crossings of the Mojave River, and the river is a broad wash system extending for many miles upstream and downstream of the proposed crossing locations, it is likely Mojave fringe-toed lizard populations extend throughout the wash system. Therefore, although construction of the project has the potential to impact individuals, population-level impacts on the Mojave fringe-toed lizard would not be expected.

To further minimize impacts on the Mojave fringe-toed lizard, KRGT proposes to implement the following species-specific conservation measures:

- resurvey areas of suitable habitat before construction in the summer of 2002 to confirm the extent of the Mojave fringe-toed lizard in the vicinity of the project;
- in areas where lizards are observed during preconstruction surveys, in consultation with the CDFG, evaluate the potential to install fencing along the right-of-way to prevent lizards from entering the construction area; and
- have a qualified biologist inspect the right-of-way immediately before the onset of trenching or other surface-disturbing activities in areas of suitable Mojave fringe-toed lizard habitat.

KRGT's implementation of these measures would reduce potential impacts on the Mojave fringe-toed lizard to less than significant levels.

Bluehead Sucker, Flannelmouth Sucker, Leatherside Chub, Mountain Sucker, and Roundtail Chub (BLM, UT)

The bluehead sucker, flannelmouth sucker, leatherside chub, mountain sucker, and roundtail chub are listed as sensitive species by the BLM. The bluehead sucker, flannelmouth sucker, and leatherside chub are considered species of special concern in Utah due to declining populations. The roundtail chub is considered a threatened species by the UDWR. The bluehead sucker inhabits a wide range of habitats ranging from cold, clear mountain streams to warm, turbid waterbodies, regardless of waterbody size. Adults are generally found in moderate to fast flowing water above rubble-rock substrates. The leatherside chub occupies pools or riffles in moderate currents of cool to coldwater creeks and rivers. Spawning for both species may extend into the late summer.

Through consultation with the WGFD it was determined that the Bear River at MP 47.5 is the only waterbody along the pipeline route capable of supporting the bluehead sucker and leatherside chub. KRGT proposes to cross the Bear River using the HDD method, which would reduce the potential for impact on the bluehead sucker and the leatherside chub to less than significant levels. KRGT's geotechnical investigations support the use of a drill at this location and concluded the drill would likely be successful. If the HDD of the Bear River fails and conventional crossing techniques are required, KRGT would implement its WWCM Procedures to minimize impacts on the waterbody. KRGT would also develop additional conservation measures (*e.g.*, construction methods, timing restrictions) in consultation with the WGFD to reduce the potential for impacts on the bluehead sucker and the leatherside chub to less than significant levels.

The flannelmouth sucker, mountain sucker, and roundtail chub inhabit moderate to large rivers, typically in pools. According to the WGFD, these species may occur in the following waterbodies crossed by the pipeline route:

- Flannelmouth sucker: Hams Fork River and Little Muddy Creek;
- Mountain sucker: Hams Fork River, Little Muddy Creek, Bear River, Coyote Creek, and Yellow Creek; and
- Roundtail chub: Hams Fork River.

Construction through the waterbodies potentially occupied by these fish species would increase sedimentation and turbidity. This increased sedimentation and turbidity could reduce available habitat or stress individuals such that they are more susceptible to predation or disease, or temporarily cause downstream areas to be unsuitable for spawning. Actual construction impacts, however, would be temporary and not likely to result in the direct mortality of fish.

As discussed previously, KRGT is proposing to cross the Bear River using the HDD method. The WGFD did not recommend timing restrictions for the Hams Fork River or Little Muddy, Coyote, or Yellow Creeks. KRGT would adhere to its WWCM Procedures for waterbody crossings, which would minimize the potential for long-term or permanent impacts. Therefore, the temporary increase in turbidity within these waterbodies would not be expected to affect populations of flannelmouth sucker, mountain sucker, or roundtail chub. As a result, potential impacts on these species in Wyoming would be less than significant.

Additionally, the UDWR identified the Weber River, Chalk Creek, and the Sevier River as providing suitable habitat for mountain suckers in Utah. The Weber River would be crossed using the HDD technique, which would avoid impacts on mountain suckers and their habitat. Chalk Creek and its tributaries would be crossed using the flume technique, thereby minimizing impacts on the waterbodies or supported fish populations. Additional details of the crossings of Chalk Creek and its tributaries are included with the Bonneville cutthroat trout discussion. Finally, although the Sevier River would be crossing using the open-cut method, the UDWR has indicated that no impacts on mountain suckers are expected (Thompson, 2001). Therefore, potential impacts on this species in Utah are expected to be less than significant.

Bonneville Cutthroat Trout (FWS, BLM, WY, UT)

The Bonneville cutthroat trout is classified as a species of concern by the FWS, a BLM-sensitive species, a species of special concern in Wyoming, and a conservation species in Utah. The Bonneville cutthroat trout occupies various habitat types, but requires a functional stream riparian zone to provide structure, cover, shade, and bank stability. This species spawns in streams over gravel substrates between mid April and mid July.

Through consultations with various state agencies, it was determined that the Bonneville cutthroat trout is known to occur in the Bear River (MP 47.5) and Yellow Creek (MP 59.6) in Wyoming; and Chalk Creek (66.8), East Fork Chalk Creek (MP 69.6), an unnamed creek (MP 71.1), South Fork Chalk Creek (MP 81.1), and the Weber River (MP 87.6) in Utah.

The WGFD recommended avoiding in-stream disturbance of the Bear River between March 15 and July 31 (Wolff, 2001). Additionally, the UDWR recommended avoiding in-stream construction in the Weber River between April 15 and July 15 and between October 15 and February 28. As discussed previously, KRGT proposes to use the HDD method to cross the Bear and Weber Rivers. KRGT's use of this method would avoid in-stream disturbance of the rivers and would presumably eliminate the need for a timing restriction for the river crossing. The only potential risk to the rivers would be if an inadvertent release of drilling mud surfaces during drilling operations. This risk would be small because KRGT's geotechnical investigations revealed a high likelihood of successful completion of the drills. Additionally, KRGT developed a contingency plan to minimize the impact of an inadvertent release of drilling mud (see appendix O).

The WGFD has not recommended a crossing time window for Yellow Creek because fisheries in the proposed crossing area are limited. KRGT received approval from the COE to use the open-cut method to cross Yellow Creek. This construction method would result in a temporary increase in sedimentation and turbidity of the creek downstream of the crossing location. However, due to the limited duration of active construction within the waterbody, it is not likely that Bonneville cutthroat trout or other fisheries would be adversely affected by KRGT's proposed Yellow Creek crossing.

The FWS specifically requested that Chalk Creek and its tributaries (East Fork Chalk Creek, an unnamed creek, and South Fork Chalk Creek) not be crossed between April 15 and July 31 to avoid impacting spawning adults and young fish in the vicinity of the crossing locations. The FWS also requested that KRGT employ dry crossing techniques (*i.e.,* flume method or dam and pump method) at Chalk Creek and its tributaries (see section 2.3.2 for a discussion of dry crossing techniques). KRGT proposes to use dry crossing construction methods to complete these crossings and, based on the time frame necessary to complete the permitting process for the project, could not begin construction until after August 1. Therefore, impacts on spawning adults and young fish near the crossing location would be eliminated. Additionally, as recommended by the FWS, KRGT has agreed to offset potential impacts on the Bonneville cutthroat trout through a monetary contribution to the Summit Soil Conservation District to aid in restoration activities in the Chalk Creek watershed.

The FWS and the NRCS reported concerns with restoration of waterbodies in the Chalk Creek watershed following installation of the original KRGT pipeline in 1991. Riprap placed at the crossing location to stabilize the banks had restricted the channel and disconnected the waterbodies from the floodplain. This in turn resulted in disturbances to waterbody geomorphology. Overall, the NRCS recommended that rehabilitation should be based on current technology and best management practices to stabilize banks and prevent erosion while allowing natural river function. Specifically, the NRCS recommended stabilizing the outer bends of the waterbodies with riprap or other rock materials and stabilizing the inner bends with geotextile fabric or bioengineering structures that allow the waterbodies to maintain a natural connection to the floodplain. Implementation of KRGT's WWCM Procedures during and following construction would return waterbodies to near preconstruction contours and is expected to allow the waterbodies to function naturally. Additionally, riprap would be limited to areas where flow conditions preclude effective vegetative stabilization techniques such as seed erosion control fabric. Thus, KRGT would use geotextile fabric on inner bends of the waterbodies and only use riprap on the outer bends if flow conditions dictate.

By implementing its proposed conservation measures, KRGT would minimize potential impacts on the Bonneville cutthroat trout to less than significant levels and the project is not likely to adversely affect this species or contribute to a trend towards Federal listing.

Virgin Spinedace (FWS, BLM, UT, NV)

The Virgin spinedace is classified as a species of concern by the FWS, a sensitive species by the BLM, a conservation species by the State of Utah, and receives protection under the NRS 501 in Nevada. The Virgin spinedace is a small minnow that is most often associated with clear, cool, relatively swift streams with pools, runs, and riffles. It usually spawns over gravel and sand substrates from April through June. The Virgin spinedace is restricted to the Virgin River drainage basin, which includes three waterbodies that would be crossed by the pipeline: Magotsu Creek (MP 400.3), Moody Wash (MP 403.3), and Beaver Dam Wash (MP 431.0). Of these, the proposed crossing location at Beaver Dam Wash is devoid of riparian vegetation and generally dry, and therefore is not likely to support this species. However, the FWS reported that Virgin spinedace populations can expand into ephemeral segments of waterbodies when water is present. At such times, the segments that are temporarily flowing are critical to population connectivity. The proposed crossing locations of Magotsu Creek and Moody Wash flow more regularly and may provide suitable habitat.

The FWS and FS recommended that KRGT avoid construction through Magotsu Creek, Moody Wash, and Beaver Dam Wash from March 1 through July 1 to minimize potential impacts on the Virgin spinedace. KRGT proposes to cross Magotsu Creek and Moody Wash using the flume method if water is present. If water is not present when the normal construction spread progresses to that location, KRGT proposes to complete the crossings using the open-cut method. Additionally, if water is present in Moody Wash during construction, at the request of the UDWR, KRGT would place nets upstream and downstream of the crossing location to prevent fish from entering the construction area. Based on the current proposed construction start date of August 1, construction through these waterbodies would occur outside the timing restriction.

The FWS has expressed concern about impacts on the Virgin spinedace, even if Moody Wash and Magotsu Creek are crossed using dry crossing methods (*i.e.*, flume). This concern relates primarily to the loss of habitat and potential for increased erosion of the streambank following construction, as well as riparian and in-stream habitat disturbances that would occur during construction if water is present at the time of construction. As stated above, if water is flowing at the time of construction, KRGT proposes to cross these waterbodies using the flume method. Following installation of the flume, in-stream biota would be able to traverse the project area freely. Use of the flume method would also minimize impacts on water quality by limiting the amount of downstream sedimentation during construction. In accordance with its WWCM Procedures, KRGT would restore the bed and banks of waterbodies to preconstruction contours or a more stable configuration after construction. Additionally, KRGT has agreed to implement specific mitigation measures recommended by the FS for Moody Wash, including the replacement of boulders and using locally collected willow cuttings during restoration efforts. These measures would minimize the potential for post-construction impacts on fish species, including the Virgin spinedace, in these waterbodies.

Implementation of KRGT's WWCM Procedures and the additional measures recommended by the FS would reduce potential impact on the Virgin spinedace to less than significant levels.

Three-cornered Milkvetch, Yellow Two-tone Beardtongue, and Rosy Two-tone Beardtongue (FWS, BLM, NV, CA)

The three-cornered milkvetch, yellow two-tone beardtongue, and rosy two-tone beardtongue are considered species of concern by the FWS and sensitive species by the BLM. The three-cornered milkvetch is also considered critically endangered in Nevada under NRS 527, and the rosy two-tone beardtongue is designated a CNPS list 2 species (plants that are rare, threatened, or endangered in California but more common elsewhere). Two-tone beardtongues are found in shallow, gravelly washes within areas of Mojave creosote bush scrub. The three-cornered milkvetch occurs in deep, semi-stabilized sand deposits.

During botanical field surveys, 1 three-cornered milkvetch plant was identified near MP 495.0, 45 populations of yellow two-tone beardtongue were identified between MPs 550.7 and 564.6, and 9 populations of rosy two-tone beardtongue were identified between MPs 502.4 and 506.9. Two-tone beardtongue plants were also identified along six access roads and three-cornered milkvetch plants were identified along two access roads. KRGT proposes to avoid and protect plants located adjacent to the construction right-of-way by installing exclusion fencing. Many of the plants, however, are located within the proposed construction right-of-way or within access roads and cannot be avoided. These plants would be crushed and, where grading is required, uprooted.

In its comments on the draft EIS/EIR, the FWS reported that in areas where Palmer's penstemon was seeded during revegetation efforts following construction of the existing KRGT pipeline (between about MPs 554.7 and 557.2 of the proposed project) two-tone beardtongue and Palmer's penstemon have been hybridizing. KRGT proposes to conduct new surveys in the spring of 2002 to determine if other three-cornered milkvetch or two-tone beardtongue plants are present in the general area and to assess the extent of potential hybridization elsewhere along the right-of-way. To facilitate recolonization of disturbed areas by these plants, KRGT would:

- collect ripe seed from existing plant populations and, following site preparation, spread collected seeds over the same approximate area that contained the species before disturbance. As recommended by the FWS, KRGT would not collect ripe seed from two-tone beardtongue or reseed with two-tone beardtongue between MPs 554.7 and 557.2;
- attempt to redistribute seeds beyond the active access road edges, if known populations are restricted to access roads; and
- monitor topsoil segregation in areas containing sensitive species to ensure adequate topsoil is segregated and would replace the topsoil to ensure the seed bank is returned to the affected area.

The CDFG recommended that post-construction abundance of special status plant species be equivalent to preconstruction abundance. KRGT would monitor revegetation efforts for 6 years. If, at the end of the 6-year monitoring period plant abundance is not similar, the CDFG recommended, and KRGT has agreed, that KRGT provide monetary compensation to the CDFG, potentially through the acquisition of additional lands for the CDFG. The amount and type of compensation in California would be determined in consultation with the CDFG and pursuant to the Incidental Take Permit under Section 2081 and/or pursuant to the SAA under Section 1600, respectively, of the California Fish and Game Code. Enhancement and management (endowment) fees would be applied to all mitigation lands in California.

Implementation of these measures would reduce potential impacts on these species to less than significant levels.

Desert Cymopterus, Barstow Woolly-sunflower, and Mojave Monkeyflower (FWS, BLM, CA)

The desert cymopterus, Barstow woolly-sunflower, and Mojave monkeyflower are designated as species of concern by the FWS, sensitive species by the BLM, and CNPS list 1B species (plants that are rare, threatened, or endangered in California and elsewhere). All three species are restricted to the Mojave Desert and are generally found in the Mojave creosote bush scrub community. Surveys for these species were conducted along the Goodsprings Loop in spring of 2001. No individuals or habitat for any of the three species were identified during the surveys. Field surveys were conducted on the Daggett Loop during June 2001 and along access roads and in proposed off right-of-way yards in September and October 2001. Although the Daggett Loop access road and off right-of-way yard surveys were conducted too late to observe the actual plants, habitat was identified along the loop and associated facilities for all of these species. To determine the potential for the project to affect these species, KRGT would conduct surveys along the Daggett Loop and associated facilities during the spring of 2002. The CDFG does not expect reseeding of the right-of-way to result in successful recolonization by these species. Therefore, if any of the three species are found, per a recommendation by the CDFG, KRGT would evaluate areas being considered for acquisition as desert tortoise mitigation for suitable habitat for desert cymopterus, Barstow woolly-sunflower, or Mojave monkeyflower. KRGT would then prioritize and incorporate lands containing suitable habitat for both the desert tortoise and the affected plant species into the overall desert tortoise habitat acquisition strategy for the project. The amount and type of compensation in California would be determined in consultation with the CDFG and pursuant to the Incidental Take Permit under Section 2081 and/or pursuant to the SAA under Section 1600, respectively, of the California Fish and Game Code. Enhancement and management (endowment) fees would be applied to all mitigation lands in California.

Implementation of these measures would reduce potential impacts on these species to less than significant levels.

Parish's Phacelia (FWS, BLM, CA)

Parish's phacelia is listed as a species of concern by the FWS, a sensitive species by the BLM, and a CNPS list 1B species. This species occurs in creosote bush scrub, Joshua tree woodland, salt desert shrublands, and dry lakebeds on desert alkaline flats. Spring 2001 botanical surveys identified a single population of this species, estimated to contain more than 5,000 individual plants, in a dry lakebed adjacent to the right-of-way near MP 665.5 along the Goodsprings Loop. Direct impacts on these plants would be avoided because they are outside of the construction right-of-way. KRGT would protect this large population from indirect impacts by placing exclusion fencing along the right-of-way near the existing population. If individuals are identified within the right-of-way during preconstruction surveys, KRGT would collect ripe seed from individuals occurring within the proposed construction right-of-way before construction and distribute the collected seeds after construction over the approximate area where the plants were located before disturbance. Implementation of these measures would reduce potential impacts on these species to less than significant levels.

Rusby's Desert Mallow (FWS, BLM, CA)

The Rusby's desert mallow is designated as a species of concern by the FWS and a sensitive species by the BLM. This species is a CNPS list 1B species. The Rusby's desert mallow can be found in desert scrub in the Clark Mountains near the proposed pipeline route. Spring 2001 botanical surveys identified Rusby's desert mallow growing at two areas along the pipeline right-of-way and along two access roads. One population, located along the route north of the Mojave National Preserve near MP 591.5, is fairly large and occurs on both south- and north-facing slopes of rocky limestone soils. This population of Rusby's desert mallow is collocated with a population of scaly cloak fern, another CNPS category 1 species (see discussion

in section 4.7.4). The second population was located throughout the Clark Mountains with individual plants scattered widely between MPs 585.0 and 590.0. This population is restricted to the existing right-of-way, indicating that these individuals are largely adapted to disturbed conditions and may be a result of restoration activities following construction of the existing pipeline.

KRGT would avoid and protect plants located adjacent to the construction right-of-way by installing exclusion fencing. Many of the plants, however, are located within the proposed construction right-of-way. These plants would be crushed and, where grading is required, uprooted.

KRGT would conduct preconstruction surveys to determine the extent of the population near MP 585.0 and along the access roads with known populations, and would collect ripe seeds from existing populations. To minimize impacts on Rusby's desert mallow, KRGT would:

- monitor topsoil segregation in areas containing sensitive species to ensure adequate topsoil is segregated and would replace the topsoil to ensure the seed bank is returned to the affected area;
- after construction and site preparation, and following CDFG recommendations, distribute the collected seeds over the approximate area where the plants were located before disturbance; and
- if known populations are restricted to access roads, attempt to redistribute seeds beyond the active access road edges.

Implementation of these measures would reduce potential impacts on this species to less than significant levels.

4.7.4 State-listed Threatened and Endangered or Special Concern Species

Wyoming

Wyoming does not have an endangered species law for plants or animals; however, the WGFD developed a matrix of habitat and population variables to determine the conservation priority of all native, breeding bird, and mammal species in the state. Through this matrix, the WGFD has developed a system to rank the state's species of special concern. Species in Wyoming are designated with a Species of Special Concern rating of 1 through 7. Classes 1, 2, and 3 are considered to be high priorities for conservation attention; therefore, species within these categories are discussed in this section. The WGFD originally identified 13 class 1, 2, and 3 species as potentially occurring in the project area in Wyoming. Through subsequent agency consultations and review of other information, it was determined that seven of these species are not likely to occur along the pipeline route and would not be affected. These species were eliminated from further consideration (see table R-1 in appendix R (pages R-1 through R-5)). Of the remaining six species (see table 4.7.1-1 (page 4-119)), only one species, the swift fox, was not also of concern to a Federal agency and discussed in previous sections. This species is discussed below.

Swift Fox - The swift fox primarily inhabits shortgrass prairies and deserts, and dens in sandy soils on open prairies, along fences, or in plowed fields, often in locations with expansive views of the surrounding area. The swift fox historically occurred along much of the proposed pipeline route in Wyoming, using both open sagebrush and grassland communities. The swift fox may be found in conjunction with the white-tailed prairie dog colonies located along the Muddy Creek Loop (see section 4.7.2). Impacts on the swift fox from construction would be limited to the conversion of shrub habitats to open areas. This change in habitat type

would reduce available cover and could cause a change in foraging behavior. No swift fox were identified during field surveys. Any swift fox using the area would likely be adapted to disturbed conditions and would be expected to avoid construction activities. Therefore, impacts on the swift fox would be short term and less than significant and would not likely result in adverse population-level effects.

Utah

Utah does not have an endangered species law for plants or animals, although the state maintains a Sensitive Species List to identify those species in the state that are most vulnerable to population or habitat loss. An additional purpose of the Sensitive Species List is to identify species for which development and implementation of timely and sufficient conservation measures would preclude listing of the species under the ESA.

Through consultation with the UDWR and review of the UCDC database, 41 species on the Sensitive Species List were originally identified as potentially occurring along the project corridor in Utah. Following additional consultation with these agencies and completion of field surveys, 12 species were determined to be not likely to occur along the pipeline route and would not be affected by the project. These species were eliminated from further consideration (see table R-1 in appendix R (pages R-1 through R-5)). The 29 remaining species included on Utah's Sensitive Species List with the potential to occur in the project area are shown in table 4.7.1-1 (page 4-119). These 29 species are also either designated as federally listed threatened or endangered, or considered sensitive by a Federal agency and are discussed in previous sections.

In addition to the 41 species originally identified, 14 other species on Utah's Sensitive Species list (chisel-toothed kangaroo rat, cactus mouse, southern grasshopper mouse, Arizona toad, lowland leopard frog, Utah banded gecko, Mojave zebra-tailed lizard, desert glossy snake, Sonora lyre snake, Utah blind snake, Mojave patch-nosed snake, southwestern speckled rattlesnake, Mojave rattlesnake, and western chuckwalla) were noted by the UDWR as potentially occurring along the pipeline route. Twelve of these 14 species are desert endemic species that are widespread throughout the Mojave Desert. As such, these species are considered sensitive in Utah primarily because the state includes only a small portion of the Mojave Desert. Additionally, these desert endemic species could occur commensally with the desert tortoise. Therefore, although significant impacts on populations of these species are not anticipated, KRGT's proposed desert tortoise mitigation would also reduce potential impacts on these species to less than significant levels. The Arizona toad and the lowland leopard frog are the remaining two species identified by the UDWR. No waterbodies that contain sufficient water to support breeding populations of Arizona toad or lowland leopard frog would be crossed by the project in the ranges of these species in the southwestern corner of Utah. Consequently, no impacts on these species are expected.

Nevada

Nevada maintains lists of species that are protected either under NRS 501 (wildlife) or Nevada Administrative Code 527 (plants). These regulations require a permit from the NDOW to take any protected species of wildlife and a special permit from the NDF before engaging in an activity that may result in removal or destruction of any protected plants. Based on consultations with the appropriate agencies, 25 Nevada state-listed species were initially identified as potentially occurring in the project area. Based on additional consultations with agencies or other information, it was determined that 12 of these species are not likely to occur along the pipeline route and would not be affected. These species were eliminated from further consideration (see table R-1 in appendix R (pages R-1 through R-5)). The remaining 13 species are also either federally listed threatened or endangered or considered sensitive or species of concern by a Federal agency (see table 4.7.1-1 (page 4-119)) and are discussed in previous sections.

The Clark County Multi-Species Habitat Conservation Plan (MSHCP) covers 79 sensitive species, including those listed by a Federal or state agency. Forty-one of the 79 species are designated as species of local concern, of which 14 are also listed or proposed for listing by a Federal agency or protected under Nevada law. The remaining 38 species are primarily desert endemic species with about 2 to 4 million acres of suitable habitat within Clark County. The habitats for the desert endemic species generally overlap with desert tortoise habitat for which KRGT is proposing mitigation. Therefore, implementation of KRGT's desert tortoise mitigation would also reduce impacts on other desert endemic species considered species of local concern in the Clark County MSHCP to less than significant levels.

California

The California Endangered Species Act (CESA) requires California state agencies to protect and promote the recovery of state-listed endangered or threatened species. Similar to the ESA, the CESA requires that state lead agencies consult with the CDFG to ensure that actions are not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat. On January 16, 2002, KRGT submitted to the CDFG an application for a Section 2081 (b) and (c) Incidental Take Permit for the proposed project. The permit application includes mitigation measures that KRGT would implement in California that were developed with specific agency input regarding the California species of special concern. The following species are addressed in the permit application: burrowing owl, golden eagle, red-tailed hawk, prairie falcon, Bendire's thrasher, Le Conte's thrasher, Nelson's bighorn sheep, Mojave ground squirrel, desert tortoise, Mojave fringe-toed lizard, Mormon needle grass, small-flowered androstephium, scaly cloak fern, desert cymopterus, Barstow woolly-sunflower, Mojave monkeyflower, Parish's phacelia, and Rusby's desert mallow. Based on consultation with the CDFG and review of lists maintained by the CNPS, 58 species that are regulated under the CESA or listed by the CNPS were initially identified that could potentially occur within the project area. Based on subsequent agency contacts and other information, 29 of the species were determined to be not likely to occur along the pipeline route and would not be affected by the proposed project. These were eliminated from further consideration (see table R-1 in appendix R (pages R-1 through R-5)). Of the remaining 29 species (see table 4.7.1-1 (page 4-119)), 24 are also of concern to a Federal agency and are discussed in previous sections. The remaining four species are discussed below.

Mohave Ground Squirrel - The Mohave ground squirrel is a California-listed threatened species that typically inhabits areas with deep sandy or gravelly friable soils and abundant herbaceous vegetation interspersed with creosote bush and/or Joshua trees. Although suitable habitat for the Mohave ground squirrel is found throughout the Mojave Desert in California, the Daggett Loop is the only proposed KRGT facility that would be located within the generally accepted range of this species.

Surveys for the Mohave ground squirrel were not conducted because it was determined through consultation with the CDFG that a species-specific survey would not confirm the presence or absence of the species. Based on the presence of suitable habitat and through consultation with the CDFG, it was determined that Mohave ground squirrels may occur between MPs 18.1 and 82.4 along the Daggett Loop, including associated access roads. If occupied burrows are crushed during construction, mortality of individuals could result. Loss of burrows could also increase ground squirrel susceptibility to predation. Given that the ground squirrel's general area of occurrence overlaps with that of the desert tortoise, KRGT would:

- implement the recommendation of the CDFG to mitigate for impacts on the Mohave ground squirrel as part of its desert tortoise mitigation by providing additional compensation to the CDFG through a third party for each acre of desert tortoise habitat affected within the area

defined as Mohave ground squirrel range (about 667 acres) to cover additional ground squirrel research and study; and

- notify the CDFG if a dead Mohave ground squirrel is encountered during preconstruction botanical and desert tortoise surveys or during construction.

Implementation of these measures would reduce potential impacts on the Mohave ground squirrel to less than significant levels.

Mormon Needle Grass - Mormon needle grass is a CNPS list 2 species. Mormon needle grass inhabits shrub-steppe, pinyon/juniper communities, and rocky limestone outcrops. Along the proposed pipeline route, suitable habitat for the Mormon needle grass is limited to the Clark Mountains along the Goodsprings Loop as well as access roads to this area. During 2001 field surveys, Mormon needle grass was identified at three locations. One location consisted of a population of 30 plants. The other two locations consisted of single, individual plants. About half of the 32 plants are located within the proposed construction right-of-way.

Construction would likely crush plants occurring within the construction right-of-way. KRGT would conduct surveys during the spring of 2002 in the area where plants were observed during 2001 field surveys and in areas of suitable habitat identified during fall 2001 access road and off right-of-way yard surveys. To minimize potential impacts on Mormon needle grass, in addition to marking the locations of populations or plants, KRGT's 2002 survey teams would:

- collect ripe seeds from individual Mormon needle grass plants to reseed the right-of-way following construction;
- install fencing along the right-of-way to avoid and protect Mormon needle grass individuals located adjacent to, but off of, the construction right-of-way;
- monitor topsoil segregation in areas containing sensitive species to ensure adequate topsoil is segregated and replace the topsoil to ensure the seed bank is returned to the affected area; and
- place rock mulch on the right-of-way over the areas reseeded with Mormon needle grass.

Implementation of these measures would reduce potential impacts on this species to less than significant levels.

Small-flowered Androstephium - The small-flowered androstephium is a CNPS list 2 species. This species inhabits creosote bush scrub and dry, rocky slopes. Habitat for this species occurs roughly from the Clark Mountains on the Goodsprings Loop to around MP 20.0 of the Daggett Loop. A survey of suitable habitat identified a single individual adjacent to an access road near MP 642.7 of the Goodsprings Loop. This individual would not be affected by the proposed project.

Field surveys were conducted on the Daggett Loop during June 2001 and along access roads and in proposed off right-of-way yards in September and October 2001. Although the Daggett Loop access road and off right-of-way yard surveys were conducted too late to observe the actual plants, habitat for the small-flowered androstephium was identified along the loop and associated facilities. To determine the potential for the project to affect this species, KRGT proposes to conduct new surveys along the Daggett Loop and associated facilities during the spring of 2002. If small-flowered androstephium are found, KRGT would:

- install exclusion fencing to protect plants located adjacent to the construction right-of-way;
- monitor topsoil segregation in areas containing sensitive species to ensure adequate topsoil is segregated and replace the topsoil to ensure the seed bank is returned to the affected area; and
- in accordance with CDFG recommendations, collect ripe seeds from existing populations and, following construction, distribute those seeds over the approximate area where the plants were located before disturbance.

Implementation of these measures would reduce potential impacts on this species to less than significant levels.

Scaly Cloak Fern - Scaly cloak fern is a CNPS list 2 species. Scaly cloak fern occurs in the project area on limestone slopes and in crevices in the Clark Mountains. Surveys conducted during the spring of 2001 identified a population of about 600 individual plants along the route north of the Mojave National Preserve. This population was found on a limestone outcrop along with the Rusby's desert mallow (see section 4.7.3). Suitable habitat was identified along two access roads near the Clark Mountains.

Construction would directly impact these plants by crushing and, where grading is necessary, uprooting individual plants located within the construction right-of-way. Construction may also result in the permanent loss of habitat. The limestone outcrop that supports the plants would be damaged during construction and it is not likely that KRGT would be able to recreate the exact preconstruction conditions. As approved by the CDFG, KRGT proposes to mitigate for construction impacts on the scaly cloak fern by:

- conducting surveys in the spring of 2002 to determine if the scaly cloak fern is present along the two access roads where suitable habitat was identified and to adequately characterize the existing population beyond the right-of-way to aid the CDFG in future management of this species; and
- providing funding to the CDFG, or to a fund identified by the CDFG, for native plant research based on the work effort required to adequately research and monitor affected species. The amount and type of compensation in California would be determined in consultation with the CDFG and pursuant to the Incidental Take Permit under Section 2081 and/or pursuant to the SAA under Section 1600, respectively, of the California Fish and Game Code. KRGT would provide the CDFG with the agreed upon compensation before construction through scaly cloak fern habitat in the Clark Mountains.

Implementation of these measures would reduce impacts on this species to less than significant levels.

4.7.5 Summary

Based on informal consultation with the FWS, 24 federally listed, proposed listed, or candidate species were identified as potentially occurring in the general vicinity of (within the counties crossed by) the project. After further consultations with the FWS, the BLM, and the respective state wildlife agencies, and completion of field surveys, a determination of effect for all of these species was developed. Two of the 24 species (Utah prairie dog and desert tortoise) were identified as likely to be adversely affected by the proposed project. Although the FWS' BO has not yet been issued, in its comments on the draft EIS/EIR the FWS concurred with these determinations. Table 4.7.2-3 (page 4-137) summarizes effects for federally

listed, proposed, and candidate species potentially occurring in the vicinity of the Kern River 2003 Expansion Project.

As required by the CESA, consultation has occurred with the CDFG to determine the proposed project's effect on California-listed or proposed listed species. As described above, it is expected that the Kern River 2003 Expansion Project would avoid adverse impacts on the following California-listed threatened or endangered species: Arizona Bell's vireo, bald eagle, peregrine falcon, Swainson's hawk, southwestern willow flycatcher, and western yellow-billed cuckoo. However, the Federal and California-listed threatened desert tortoise would likely be adversely affected by construction of the project. Because this species is California-listed as well as federally listed, the CDFG would review the BO prepared by the FWS and consider the issuance of a consistency determination pursuant to Section 2080.1 of the California Fish and Game Code. Additionally, because other species (*e.g.*, the Mohave ground squirrel) may be affected by the project, the CDFG would consider issuance of an Incidental Take Permit pursuant to Section 2081 of the California Fish and Game Code for all state-listed endangered or threatened species occurring along the route in California. The CDFG may choose to include the desert tortoise in the Incidental Take Permit (*i.e.*, the permit would cover bother federally and state-listed species) instead of issuing a consistency determination on the BO prepared by the FWS. As discussed in section 4.7.4, Wyoming, Utah, and Nevada do not have an endangered species law that is equivalent to the ESA or the CESA. Nevertheless, NDOW policy and a native plant law provide protection for some rare species in Nevada.

To ensure that potential impacts on special status species would be avoided or mitigated to less than significant levels, as well as to comply with the ESA and the CESA and address the UDWR concerns regarding special status species, **the Agency Staffs recommend the following measures:**

- **KRGT shall not begin construction activities <u>until</u>:**

  a. **KRGT completes any outstanding species-specific surveys and the FERC receives comments from the FWS regarding the preconstruction survey reports;**

  b. **the FERC completes formal consultation with the FWS;**

  c. **KRGT has completed and filed with the FERC the results of consultations with the UDWR regarding measures to avoid or minimize impacts on special status species in Utah;**

  d. **KRGT has completed and filed with the FERC the results of consultations with the BLM regarding measures to avoid or minimize impacts on special status species on lands managed by the BLM; and**

  e. **KRGT has received written notification from the Director of OEP that construction or use of conservation measures may begin.**

- **<u>In California</u>, KRGT shall not begin construction activities <u>until</u>:**

  a. **KRGT completes any outstanding species-specific surveys in California and the FERC and the CSLC receive comments from the FWS and the CDFG regarding the applicable preconstruction survey reports;**

b. the FERC completes formal consultation with the FWS;

c. the CDFG makes a consistency determination on the FWS' BO pursuant to Section 2080.1 of the California Fish and Game Code or issues an Incidental Take Permit that covers both federally and state-listed species that may be affected;

d. KRGT obtains an Incidental Take Permit under Section 2081 of the California Fish and Game Code for all state-listed species that may be affected, or receives concurrence from the CDFG that an Incidental Take Permit is not required;

e. KRGT has completed and filed with the FERC and the CSLC the results of consultations with the BLM regarding measures to avoid or minimize impacts on special status species on lands managed by the BLM in California; and

f. KRGT has received written notification from the Director of OEP and the CSLC that construction or use of conservation measures may begin in California.

4.8 LAND USE, TRANSPORTATION, RECREATION AND SPECIAL INTEREST AREAS, AND VISUAL RESOURCES

Significance Criteria

Adverse impacts on land use, transportation, recreation and special interest areas, and visual resources would be considered significant and would require additional mitigation if project construction or operation would:

- conflict with existing land use plans, policies, or regulations established by a jurisdiction directly affected by the project (see section 1.5);
- cause long-term reduction of more than 1 percent in rangeland in a county;
- convert more than 1 percent of agricultural lands in a county to a non-agricultural use or impair the productivity of more than 1 percent of agricultural land in a county;
- result in the loss of more than 1 percent of the acreage planted in a county's most valuable crop;
- displace a business or permanent residence from its established location, or disrupt access to a business or permanent residence for more than 14 days;
- conflict with any approved residential or commercial development plans;
- result in a short- or long-term decrease in the level of service of a roadway;
- result in the loss of 10 percent or more of an established or planned recreation site, or prevent access to the site, during its peak use periods or for more than 1 year;
- adversely affect ACECs, wilderness areas, WSAs, or other areas of special environmental concern;
- provide access to previously inaccessible, environmentally sensitive areas; or
- cause inconsistency with adopted VRM plans or local ordinances. In those areas where no VRM plans exist, significant impacts are determined by examining the study area for sensitive viewsheds, areas of high user volumes, and areas of unique visual resources. Sensitive resources are then examined on a case-by-case basis to determine level of impact. Significant impacts are those that dominate the viewshed from sensitive locations and change the character of the landscape both in terms of physical characteristics and land uses.

4.8.1 Land Use

4.8.1.1 General Impact and Mitigation

Pipeline Facilities

The Kern River 2003 Expansion Project includes a total of 717.5 miles of new 12-, 36-, and 42-inch-diameter pipeline in Wyoming (Lincoln and Uinta Counties), Utah (Summit, Morgan, Salt Lake, Utah, Juab,

Millard, Beaver, Iron, and Washington Counties), Nevada (Lincoln and Clark Counties), and California (San Bernardino and Kern Counties). Approximately 634.5 miles (88.4 percent) of the pipeline would be constructed adjacent to the existing KRGT pipeline using the standard 25-foot offset or less. Another 35.6 miles (5.0 percent) would be located adjacent to the existing KRGT pipeline using an atypical offset (25 to 200 feet), and 37.6 miles (5.2 percent) would be located adjacent to other various existing rights-of-way. The remaining 9.8 miles (1.4 percent) would be constructed on newly created right-of-way (defined as a deviation greater than 200 feet from an existing utility).

Table 4.8.1-1 (page 4-165) shows the current land uses that would be crossed by the proposed pipeline. The predominant land use that would be crossed is rangeland, comprising 635.2 miles of the pipeline route (88 percent). Other land uses that would be crossed by the pipeline route include 39.6 miles (5 percent) of agricultural land, 33.0 miles (5 percent) of forested land, 5.5 miles (1 percent) of wetland areas, 2.9 miles (<1 percent) of developed areas, and 1.3 miles (<1 percent) of open water.

Land use impacts associated with the project would include disturbance of existing land uses within the construction right-of-way during construction and retention of an expanded or new permanent right-of-way for operation of the pipeline. KRGT proposes to generally use a 75-foot-wide construction right-of-way for 36-inch-diameter pipe and an 80-foot-wide construction right-of-way for 42-inch-diameter pipe. Where the new pipeline is adjacent to the 50-foot-wide permanent right-of-way of KRGT's existing pipeline, an additional 25 feet of new permanent right-of-way would be retained. A 50-foot-wide new permanent right-of-way would be retained where the proposed pipeline deviates from the existing pipeline right-of-way. In addition to the construction right-of-way, various temporary extra workspaces, access roads, and contractor/pipe storage/offloading yards would be used for construction.

Construction of KRGT's pipeline facilities would affect about 10,497.4 acres of land including temporary extra workspace, access roads, and contractor/pipe storage/offloading yards. During construction, about 7,910.1 acres of land would be disturbed for the construction right-of-way, 1,318.2 acres for temporary extra workspace, 155.5 acres for access roads, and 1,113.6 acres for contractor/pipe storage/offloading yards. Table 4.8.1-2 (page 4-166) summarizes the acres of each land use that would be affected by construction and operation of the proposed pipeline facilities.

Rangeland would be the primary land use affected by the pipeline facilities totaling about 7,996.0 acres (76 percent). The remaining land uses that would be disturbed consist of 978.9 acres (9 percent) of developed land, 897.8 acres (9 percent) of agricultural land, 542.3 acres (5 percent) of forested land, 57.6 acres (1 percent) of wetlands, and 24.8 acres (<1 percent) of open water. Definitions of these land uses are provided in table 4.8.1-1 (page 4-165).

TABLE 4.8.1-1

Land Uses Crossed by the Kern River 2003 Expansion Project Pipeline Route a/

State/Facility	Rangeland b/	Agriculture c/	Forested d/	Wetlands e/	Developed f/	Open Water g/	Total Miles
WYOMING							
Opal Loop	6.1	0.0	0.0	0.1	0.0	0.0	6.2
Muddy Creek Loop	53.9	1.8	2.1	1.6	0.0	0.0	59.4
Coyote Creek Loop 1	2.9	0.0	0.0	0.0	0.0	0.0	2.9
Anschutz Lateral	0.8	0.0	0.0	0.0	0.0	0.0	0.8
Wyoming Subtotal	63.7	1.8	2.1	1.7	0.0	0.0	69.3
	(92%)	(3%)	(3%)	(2%)	(0%)	(0%)	(100%)
UTAH							
Coyote Creek Loop 1	32.1	0.9	0.0	0.5	0.0	0.0	33.5
Coyote Creek Loop 2	3.0	1.3	0.0	2.9	0.0	0.0	7.2
Salt Lake Loop	38.6	17.6	0.5	0.3	2.5	0.0	59.5
Elberta Loop	67.4	11.7	5.9	0.1	0.0	0.0	85.1
Fillmore Loop	103.3	3.1	23.4	0.0	0.0	0.0	129.8
Veyo Loop	25.2	0.0	1.1	0.0	0.0	0.0	26.3
Utah Subtotal	269.6	34.6	30.9	3.8	2.5	0.0	341.4
	(79%)	(10%)	(9%)	(1%)	(1%)	(0%)	(100%)
NEVADA							
Veyo Loop	66.8	0.5	0.0	0.0	0.0	0.0	67.3
Dry Lake Loop 1	17.5	0.0	0.0	0.0	0.0	0.0	17.5
Dry Lake Loop 2	22.3	0.0	0.0	0.0	0.0	0.0	22.3
Goodsprings Loop	13.5	0.0	0.0	0.0	0.0	0.0	13.5
Nevada Subtotal	120.1	0.5	0.0	0.0	0.0	0.0	120.6
	(99%)	(<1%)	(0%)	(0%)	(0%)	(0%)	(100%)
CALIFORNIA							
Goodsprings Loop	101.4	1.8	0.0	0.0	0.4	0.4	104.0
Daggett Loop	80.4	0.9	0.0	0.0	0.0	0.9	82.2
California Subtotal	181.8	2.7	0.0	0.0	0.4	1.3	186.2
	(98%)	(1%)	(0%)	(0%)	(<1%)	(<1%)	(100%)
Project Total	635.2	39.6	33.0	5.5	2.9	1.3	717.5
	(88%)	(5%)	(5%)	(1%)	(<1%)	(<1%)	(100%)

a/ Measured in miles.

b/ Rangeland includes herbaceous and scrub-shrub areas and arid desert shrub communities.

c/ Agricultural land includes cropland and pastureland.

d/ Forested land includes areas of evergreen and mixed forest.

e/ Palustrine emergent wetlands.

f/ Developed land includes residential, commercial, industrial, transportation, and communication areas.

g/ Open water includes the crossing of open expanses of water including streams and canals.

TABLE 4.8.1-2

Acres of Land Affected by Construction and Operation of the Pipeline Facilities for the Kern River 2003 Expansion Project

State	Rangeland a/		Developed b/		Agriculture c/		Forested d/		Open Water e/		Wetlands f/		Total	
Facility	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
WYOMING														
Pipeline Right-of-Way														
Opal Loop	58.9	19.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	59.5	19.7
Muddy Creek Loop	525.9	216.5	0.0	0.0	25.2	7.5	27.3	8.5	0.0	0.0	17.2	9.3	595.6	241.8
Coyote Creek Loop 1	25.8	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	26.4	8.8
Anschutz Lateral	5.9	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	2.5
Subtotal	616.5	246.8	0.0	0.0	25.2	7.5	27.3	8.5	0.0	0.0	18.4	10.0	687.4	272.8
Temporary Extra Workspace														
Opal Loop	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.8	0.0
Muddy Creek Loop	77.2	0.0	0.0	0.0	3.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	83.4	0.0
Coyote Creek Loop 1	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0
Anschutz Lateral	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	95.5	0.0	0.0	0.0	3.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	101.7	0.0
Access Roads	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0
Contractor Yards	0.0	0.0	79.0	0.0	73.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	152.0	0.0
Wyoming Subtotal	712.0	246.8	89.0	0.0	101.2	7.5	30.5	8.5	0.0	0.0	18.4	10.0	951.1	272.8
UTAH														
Pipeline Right-of-Way														
Coyote Creek Loop 1	284.3	109.4	0.5	0.0	7.9	3.4	4.7	1.5	0.0	0.0	1.1	0.6	298.5	114.9
Coyote Creek Loop 2	17.1	1.8	2.8	1.0	17.9	11.6	0.0	0.0	0.0	0.0	32.5	17.2	70.3	31.6
Salt Lake Loop	340.1	127.2	27.0	3.4	217.6	100.4	5.8	1.9	0.0	0.0	5.0	2.5	595.5	235.4
Elberta Loop	655.3	199.2	1.6	0.4	137.4	40.0	93.3	28.2	0.0	0.0	0.6	0.4	888.2	268.2
Fillmore Loop	1,064.5	325.2	0.0	0.0	47.3	13.9	320.8	73.9	0.0	0.0	0.0	0.0	1,432.6	413.0
Veyo Loop	354.1	78.1	0.0	0.0	0.0	0.0	12.7	2.7	0.0	0.0	0.0	0.0	366.8	80.8
Subtotal	2,715.4	840.9	31.9	4.8	428.1	169.3	437.3	108.2	0.0	0.0	39.2	20.7	3,651.9	1,143.9
Temporary Extra Workspace														
Coyote Creek Loop 1	120.9	0.0	0.2	0.0	2.7	0.0	1.6	0.0	0.0	0.0	0.0	0.0	125.4	0.0
Coyote Creek Loop 2	11.8	0.0	1.1	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.9	0.0
Salt Lake Loop	100.9	0.0	2.5	0.0	47.7	0.0	1.3	0.0	0.0	0.0	0.0	0.0	152.4	0.0
Elberta Loop	110.5	0.0	0.3	0.0	26.9	0.0	16.6	0.0	0.0	0.0	0.0	0.0	154.3	0.0
Fillmore Loop	164.8	0.0	0.0	0.0	7.3	0.0	49.3	0.0	0.0	0.0	0.0	0.0	221.4	0.0
Veyo Loop	34.8	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	35.3	0.0

TABLE 4.8.1-2 (cont'd)

Acres of Land Affected by Construction and Operation of the Pipeline Facilities for the Kern River 2003 Expansion Project

State	Rangeland a/		Developed b/		Agriculture c/		Forested d/		Open Water e/		Wetlands f/		Total	
Facility	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Subtotal	543.7	0.0	4.1	0.0	99.6	0.0	69.5	0.0	0.0	0.0	0.0	0.0	716.9	0.0
Access Roads	0.0	0.0	62.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.2	0.0
Contractor Yards	0.0	0.0	379.9	0.0	202.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	582.3	0.0
Utah Subtotal	3,259.1	840.9	478.1	4.8	730.1	169.3	506.8	108.2	0.0	0.0	39.2	20.7	5,013.3	1,143.9
NEVADA														
Pipeline Right-of-Way														
Veyo Loop	915.5	206.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	915.5	206.8
Dry Lake Loop 1	191.9	54.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	191.9	54.6
Dry Lake Loop 2	238.8	46.9	4.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	243.2	48.1
Goodsprings Loop	188.2	40.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	188.2	40.9
Subtotal	1,534.4	349.2	4.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,538.8	350.4
Temporary Extra Workspace														
Veyo Loop	36.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.6	0.0
Dry Lake Loop 1	27.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27.9	0.0
Dry Lake Loop 2	68.9	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	70.4	0.0
Goodsprings Loop	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0
Subtotal	142.5	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	144.0	0.0
Access Roads	0.0	0.0	73.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	73.1	0.0
Contractor Yards	0.0	0.0	200.2	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	260.2	0.0
Nevada Subtotal	1,676.9	349.2	279.2	1.2	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,016.1	350.4
CALIFORNIA														
Pipeline Right-of-Way														
Goodsprings Loop	1,142.8	352.2	2.1	0.0	0.0	0.0	4.3	1.1	3.9	1.9	0.0	0.0	1,153.1	355.2
Daggett Loop	855.4	266.4	0.8	0.2	5.5	2.9	0.0	0.0	17.2	9.3	0.0	0.0	878.9	278.8
Subtotal	1,998.2	618.6	2.9	0.2	5.5	2.9	4.3	1.1	21.1	11.2	0.0	0.0	2,032.0	634.0
Temporary Extra Workspace														
Goodsprings Loop	197.1	0.0	0.3	0.0	0.0	0.0	0.7	0.0	0.6	0.0	0.0	0.0	198.7	0.0
Daggett Loop	152.7	0.0	0.1	0.0	1.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	156.9	0.0
Subtotal	349.8	0.0	0.4	0.0	1.0	0.0	0.7	0.0	3.7	0.0	0.0	0.0	355.6	0.0
Access Roads	0.0	0.0	10.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.2	0.0
Contractor Yards	0.0	0.0	119.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	119.1	0.0
California Subtotal	2,348.0	618.6	132.6	0.2	6.5	2.9	5.0	1.1	24.8	11.2	0.0	0.0	2,516.9	634.0

TABLE 4.8.1-2 (cont'd)

Acres of Land Affected by Construction and Operation of the Pipeline Facilities for the Kern River 2003 Expansion Project

State	Rangeland a/		Developed b/		Agriculture c/		Forested d/		Open Water e/		Wetlands f/		Total	
Facility	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.	Const.	Oper.
Project Subtotal														
Pipeline Right-of-Way	6,864.5	2,055.5	39.2	6.2	458.8	179.7	468.9	117.8	21.1	11.2	57.6	30.7	7,910.1	2,401.1
Temporary Extra Workspace	1,131.5	0.0	6.0	0.0	103.6	0.0	73.4	0.0	3.7	0.0	0.0	0.0	1,318.2	0.0
Access Roads	0.0	0.0	155.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	155.5	0.0
Contractor Yards	0.0	0.0	778.2	0.0	335.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,113.6	0.0
Project Total	7,996.0	2,055.5	978.9	6.2	897.8	179.7	542.3	117.8	24.8	11.2	57.6	30.7	10,497.4	2,401.1

a/ Rangeland includes herbaceous and scrub-shrub areas and arid desert shrub communities.

b/ Developed includes residential, commercial, industrial, and transportation and communication areas.

c/ Agricultural land includes cropland and pastureland.

d/ Forested includes areas of evergreen and mixed forest land.

e/ Open water includes the crossing of open expanses of water including streams and canals.

f/ Palustrine emergent wetlands.

Of the 10,497.4 acres of land affected by construction of the pipeline facilities, about 2,401.1 acres would be retained as new permanent right-of-way.[8/] Of the 2,401.1 acres permanently retained, 2,055.5 acres are rangeland, 179.7 acres are agricultural land, 117.8 acres are forested land, 30.7 acres are wetlands, 11.2 acres are open water, and 6.2 acres are developed. The land retained as permanent right-of-way would be allowed to revert to former use; however, tree crops such as orchards and aboveground structures would be prohibited on the permanent right-of-way. The remaining 8,096.3 acres used for temporary construction right-of-way and temporary extra workspace would be allowed to revert to prior uses following construction with no restrictions. The right-of-way associated with the proposed pipeline facilities would not result in the conversion of more than 1 percent of agricultural lands to a non-agricultural use or impair the productivity of more than 1 percent of rangeland or agricultural land in a county. The project would also not result in the loss of more than 1 percent of the acreage planted in a county's most valuable crop. As a result, impacts on land use associated with the pipeline right-of-way would be less than significant.

Approximately 58 percent of the land affected by construction and operation of the Kern River 2003 Expansion Project would be on public lands managed by the BLM (46 percent), the FS (3 percent), the States of Wyoming, Utah, or Nevada (3 percent), local governments (3 percent), Native Americans (2 percent), the military (1 percent), and the CSLC (<1 percent). The remainder of the land that would be affected (42 percent) is privately owned. Table 4.8.1-3 (page 4-170) summarizes the land ownership along the pipeline route.

Comments were received during the scoping process regarding the consideration of the State of Utah's School and Institutional Trust Lands Administration (SITLA) land swap recently completed with the BLM in western Utah, the Lincoln County Land Act of 2000, and the Reid Ensign legislation when calculating ownership of land crossed by the project. The West Desert Land Exchange transferred 106,000 acres of SITLA lands inside Federal wilderness study areas (WSA) to the BLM while SITLA received a similar quantity of land from the BLM (Utah Trust Lands, 2001). None of the lands involved in the land swap would be crossed by or located within 0.25 mile of the proposed pipeline route (DeMille, 2001; Utah Trust Lands, 2001).

Phase I of the Lincoln County Land Act of 2000 would transfer about 6,480 acres of land administered by the BLM to private ownership in the southeastern corner of Lincoln County, near the City of Mesquite, Nevada (BLM, 2001b). The parcels involved in the land transfer are located about 10 miles southeast of the proposed Veyo Loop and would not be affected by the project. Nevada Senators Harry Reid and John Ensign are currently working on legislation to resolve wilderness status issues and provide public service sectors and corridors through certain portions of Nevada (referred to as the Reid/Ensign legislation or Clark County Public Lands Bill). Meetings are being conducted on the subject but so far a draft proposal is not in place and the legislation has not been formally introduced. At this time, no impact on the Kern River 2003 Expansion Project is anticipated.

The BLM requested that land ownership information on Federal lands be provided in both acres affected and miles. Table 4.8.1-4 (page 4-171) summarizes acreage of Federal land affected by the construction and operational right-of-way.

8/ The pipeline right-of-way crossing California State School Lands is granted through a lease for right-of-way use with a term of 30 years.

TABLE 4.8.1-3

Summary of Land Ownership Along the Kern River 2003 Expansion Project Pipeline Route a/

	Federal				State				
State/Facility	BLM	FS	Native American	Military b/	CSLC	Other	Local	Private	Total Miles
WYOMING									
Opal Loop	2.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2	6.2
Muddy Creek Loop	20.1	0.0	0.0	0.0	0.0	2.6	0.3	36.4	59.4
Anschutz Lateral	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8
Coyote Creek Loop 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	2.9
Wyoming Subtotal	22.1	0.0	0.0	0.0	0.0	2.6	0.3	44.3	69.3
	(32%)	(0%)	(0%)	(0%)	(0%)	(4%)	(<1%)	(64%)	(100%)
UTAH									
Coyote Creek Loop 1	0.0	0.0	0.0	0.0	0.0	0.1	0.1	33.3	33.5
Coyote Creek Loop 2	0.0	0.0	0.0	0.0	0.0	0.0	2.2	5.0	7.2
Salt Lake Loop	0.9	0.0	0.0	2.4	0.0	6.2	2.7	47.3	59.5
Elberta Loop	16.9	0.0	0.0	0.0	0.0	1.3	0.2	66.7	85.1
Fillmore Loop	64.9	17.2	0.0	0.0	0.0	9.4	0.4	37.9	129.8
Veyo Loop	14.7	0.0	0.0	0.0	0.0	2.9	0.0	8.7	26.3
Utah Subtotal	97.4	17.2	0.0	2.4	0.0	19.9	5.6	198.9	341.4
	(28%)	(5%)	(0%)	(1%)	(0%)	(6%)	(2%)	(58%)	(100%)
NEVADA									
Veyo Loop	52.1	0.0	14.6	0.0	0.0	0.0	0.0	0.6	67.3
Dry Lake Loop 1	14.3 c/	0.0	0.0	3.2	0.0	0.0	0.0	0.0	17.5
Dry Lake Loop 2	21.3	0.9	0.0	0.0	0.0	0.0	0.0	0.1	22.3
Goodsprings Loop	13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.5
Nevada Subtotal	101.2	0.9	14.6	3.2	0.0	0.0	0.0	0.7	120.6
	(84%)	(<1%)	(12%)	(3%)	(0%)	(0%)	(0%)	(<1%)	(100%)
CALIFORNIA									
Goodsprings Loop	82.4	0.0	0.0	0.2	1.6	0.0	12.7	7.1	104.0
Daggett Loop	23.5	0.0	0.0	4.8	0.0	0.0	2.1	51.8	82.2
California Subtotal	105.9	0.0	0.0	5.0	1.6	0.0	14.8	58.9	186.2
	(57%)	(0%)	(0%)	(3%)	(<1%)	(0%)	(8%)	(32%)	(100%)
Project Total	326.6	18.1	14.6	10.6	1.6	22.5	20.7	302.8	717.5
	(46%)	(3%)	(2%)	(1%)	(<1%)	(3%)	(3%)	(42%)	(100%)

a/ Measured in miles.

b/ Includes lands owned and administered by the National Guard, United States Marine Corps, United States Air Force, and the United States Department of the Army.

c/ Includes 1.4 miles currently in the process of a land transfer between the BLM and the Nevada National Guard (see section 4.8.6.1).

TABLE 4.8.1-4

Acres of Federal Land Affected by the Construction and Operational Right-of-Way

State/Facility	Bureau of Land Management a/		Forest Service		Military b/	
	Const.	Oper.	Const.	Oper.	Const.	Oper.
WYOMING						
Opal Loop	12.1	6.0	0.0	0.0	0.0	0.0
Muddy Creek Loop	122.1	61.1	0.0	0.0	0.0	0.0
Anschutz Lateral	0.0	0.0	0.0	0.0	0.0	0.0
Coyote Creek Loop 1	0.0	0.0	0.0	0.0	0.0	0.0
Wyoming Subtotal	134.2	67.1	0.0	0.0	0.0	0.0
UTAH						
Coyote Creek Loop 1	0.0	0.0	0.0	0.0	0.0	0.0
Coyote Creek Loop 2	0.0	0.0	0.0	0.0	0.0	0.0
Salt Lake Loop	5.4	2.7	0.0	0.0	7.9	4.0
Elberta Loop	85.2	42.6	0.0	0.0	0.0	0.0
Fillmore Loop	390.7	195.4	104.5	52.2	0.0	0.0
Veyo Loop	136.3	68.2	0.0	0.0	0.0	0.0
Utah Subtotal	617.6	308.9	104.5	52.2	7.9	4.0
NEVADA						
Veyo Loop	404.1	202.1	0.0	0.0	0.0	0.0
Dry Lake Loop 1 c/	86.8	43.4	0.0	0.0	19.4	9.7
Dry Lake Loop 2	129.0	64.5	5.5	2.7	0.0	0.0
Goodsprings Loop	82.3	41.2	0.0	0.0	0.0	0.0
Nevada Subtotal	702.2	351.2	5.5	2.7	19.4	9.7
CALIFORNIA						
Goodsprings Loop	522.5	261.3	0.0	0.0	0.0	0.0
Daggett Loop	128.5	64.2	0.0	0.0	27.8	13.9
California Subtotal	651.0	325.5	0.0	0.0	27.8	13.9
Project Total	2,105.0	1,052.7	110.0	54.9	55.1	27.6

a/ Includes acreage affected on the Moapa River Indian Reservation.

b/ and Includes lands owned and administered by the National Guard, United States Marine Corps, United States Air Force, the United States Department of the Army.

c/ Includes land currently in the process of a land transfer between the BLM and the Nevada National Guard (see section 4.8.6.1).

The San Bernardino County Land Services Department raised concerns about the purchase of private lands for transfer to public ownership as part of compensation for habitat loss. As discussed in section 4.7, KRGT would be required to acquire land as part of its mitigation for habitat loss associated with the Kern River 2003 Expansion Project. The specific locations of land involved in such transfers would be negotiated between KRGT through a third party, the appropriate land management agency, and the landowner to identify mutually agreeable locations that meet the mitigation requirements for the type of habitat lost as a result of the project.

A landowner raised concerns regarding the effect of the project on existing easement and compensation issues; replacement of the landowner's survey markers; pipe material and compatibility with the landowner's water and sewage pipes; the landowner's right to install a fence on the right-of-way; use of access roads for pipeline inspection; and the visual impact of KRGT's pipeline markers. The easement

process and associated compensation issues are discussed in general terms below. Specific details would be finalized between the landowner and KRGT during easement negotiations. These negotiations could also include details about the replacement of survey markers and allowable uses of the permanent right-of-way after construction. The epoxy-coated steel pipeline would not be incompatible with the landowner's water and sewage pipes. As previously discussed, no new access roads would be created for the project. KRGT would use only existing roads to construct and inspect the pipeline right-of-way. The pipeline facilities would be clearly marked at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would indicate the presence of the pipeline and provide a telephone number and address where a company representative may be reached in the event of an emergency or before any excavation in the area of the pipeline by a third party. The required markers are relatively small and would have minor impacts on visual resources. Additional discussion of visual resources is presented in section 4.8.7. An easement would be used to convey both temporary (for construction) and permanent rights-of-way to the pipeline company. The easement gives the company the right to construct, operate, maintain the pipeline, and establish a permanent right-of-way. In return, the company compensates the landowner for use of the land. The easement agreement between the company and landowner typically specifies compensation for loss of use during construction, loss of nonrenewable or other resources, damage to property during construction, and allowable uses of the permanent right-of-way after construction.

If an easement cannot be negotiated with a landowner and the project has been certificated by the FERC, the company may use the right of eminent domain granted to it under Section 7(h) of the NGA and the procedure set forth under the Federal Rules of Civic Procedure (Rule 71A) to obtain the right-of-way and extra workspace areas. The company would still be required to compensate the landowner for the right-of-way and for any damages incurred during construction. However, the level of compensation would be determined by a court according to state law. In either case, KRGT would compensate landowners for use of the land.

Eminent domain does not apply to lands under Federal ownership (*e.g.,* BLM, FS, military bases). As stated in section 1.2, the BLM would issue one right-of-way grant that would apply to all affected Federal lands after receipt of concurrence from the other Federal land management agencies.

Aboveground Facilities

KRGT proposes to construct three new compressor stations, modify six existing compressor stations, modify five existing meter stations, construct 24 pig launcher/receiver facilities, and construct 55 MLVs. Of these aboveground facilities, only the three new compressor stations, modification to one of the existing compressor stations, and five of the pig launcher/receiver facilities would result in additional disturbance of land. A total of 94.3 acres would be required for construction and 89.8 acres would be permanently affected for operation. Of the 89.9 acres, 57.8 acres would be rangeland and 32.0 acres would be agricultural land. Table 4.8.1-5 (page 4-173) summarizes land requirements and land use for the proposed aboveground facilities where additional land is required.

The remaining modifications to the compressor and meter stations would be performed within the fencelines of the existing sites. All but three of the pig launcher/receiver facilities would be installed within the fencelines or adjacent to other aboveground facility sites. All of the MLVs would be installed within the permanent right-of-way and would not require any additional land. In addition, all but one of the MLVs would be constructed within existing MLV sites.

The proposed Coyote Creek Compressor Station, access road, and 1.3-mile-long powerline would be located on 30.9 acres of rangeland at MP 60.1 in Uinta County, Wyoming. The 30.9 acres of land would be converted to an industrial/developed use for construction and operation of the facility. An additional 0.1 acre would be needed during construction of the access road to the site. The land for the proposed site is privately owned.

TABLE 4.8.1-5

Aboveground Facility Land Requirements and Land Use a/

Facility	Milepost	County, State	Land Affected During Construction (acres)	Land Affected During Operation (acres)
New Compressor Stations				
Coyote Creek Compressor Station b/	60.1	Uinta, Wyoming	31.0	30.9
Salt Lake Compressor Station b/	132.0	Salt Lake, Utah	32.0	32.0
Dry Lake Compressor Station b/	500.1	Clark, Nevada	23.3	22.9
Modifications to Existing Compressor Stations				
Veyo Compressor Station c/	406.5	Washington, Utah	4.0	0.0
Pig Launcher/Receivers				
End of Coyote Creek Loop 1	96.4	Morgan, Utah	0.8	0.8
Beginning of Coyote Creek Loop 2	124.5	Salt Lake, Utah	0.8	0.8
End of Dry Lake Loop 1	517.5	Clark, Nevada	0.8	0.8
Beginning of Dry Lake Loop 2	543.6	Clark, Nevada	0.8	0.8
End of Daggett Loop	82.4	Kern, California	0.8	0.8
Total			94.3	89.8

a/ Existing land use for all listed facilities is rangeland with the exception of the Salt Lake Compressor Station, which is considered agricultural land.

b/ Includes construction and improvement of the access road and powerline to the facility.

c/ Modifications would require an additional 4.0 acres of land outside of the existing fenced facility during construction.

The proposed Salt Lake Compressor Station, access road, and 100-foot-long powerline to the site would be located at MP 132.0 in Salt Lake County, Utah and would permanently convert 32.0 acres of agricultural land to an industrial/developed use. The land for the proposed site is privately owned.

The proposed Dry Lake Compressor Station, access road, and 0.3-mile-long powerline would be located on 22.9 acres of rangeland that would be converted to an industrial/developed use for construction and operation of the facility. An additional 0.4 acre of rangeland would be required during construction of the access road. This station would be located at MP 500.1 in Clark County, Nevada on land administered by the BLM.

The existing Veyo Compressor Station is located on a 15-acre parcel at MP 406.5 in Washington County, Utah. Modifications to this compressor station would require an additional 4.0 acres of previously disturbed rangeland administered by the BLM. There would be no permanent increase in the size of the facility.

The five pig launcher/receiver facilities at MPs 96.4 (Coyote Creek Loop 1), 124.5 (Coyote Creek Loop 2), 517.5 (Dry Lake Loop 1), 543.6 (Dry Lake Loop 2), and 82.4 (Daggett Loop) would be constructed within a 0.8-acre fenced area. Three of the sites would be located at the beginning or ending of pipeline loops that do not correspond to other major aboveground facilities. The other two sites would be located adjacent to existing MLVs. Approximately 4.0 acres of rangeland would be permanently converted to an industrial/developed use for construction and operation of these facilities. No additional land is needed for access to the sites. The sites at MPs 517.5 and 543.6 of the Dry Lake Loops 1 and 2, respectively, and MP 82.4 of the Daggett Loop are managed by the BLM. The remaining sites are privately owned.

Land used for the aboveground facilities would be permanently converted to a utility use. However, the permanent conversion of rangeland for the Coyote Creek and Dry Lake Compressor Stations would not cause a long-term reduction of more than 1 percent of rangeland in Uinta County, Wyoming or Clark County, Nevada, respectively. The permanent conversion of agricultural land for the Salt Lake Compressor Station would not cause a long-term reduction of more than 1 percent of agricultural land in Salt Lake County, Utah. As a result, impacts associated with the conversion of rangeland and agricultural land for the aboveground facilities would be less than significant. However, visual intrusion could occur during both construction and operation. Compressor station noise impacts could also continue during facility operation. Visual impacts are discussed in section 4.8.7 and noise impacts are discussed in section 4.11.2.

4.8.2 Grazing Allotments

As discussed in section 4.8.1, rangeland is the predominant land use along the Kern River 2003 Expansion Project. One of the major uses of rangeland in the project area is livestock grazing. Grazing allotments are areas of land where individuals graze their livestock. An allotment generally consists of Federal rangelands but may also include intermingled parcels of private or state lands. The BLM and the FS stipulate the number of livestock and season of use for each allotment. A summary of the grazing allotments crossed by the proposed pipeline route is presented in table 4.8.2-1 (page 4-175).

Construction of the project could impact grazing allotments by resulting in the loss of the carrying capacity of an allotment, damaging or removing fences or other natural barriers used for livestock control, and trapping or harming livestock that enter into the construction work area. To minimize impacts on grazing allotments, KRGT would implement the following mitigation measures:

- Each fence crossed would be braced and secured before cutting the opening needed for construction to prevent slacking of the wire. The created opening would be closed by temporary gates as necessary to prevent passage of livestock.
- On Federal lands, all damaged livestock fences, gates, cattleguards, and brace panels would be repaired or replaced to BLM or FS standards.
- Where construction results in damage or removal of a natural barrier used for livestock control, the barrier would be replaced or a fence would be constructed in its place.
- Ramps would be constructed to allow for escape of livestock from the trench at all well-defined livestock trails (as determined by the EI, in conjunction with the agencies' compliance monitor) and at 1-mile intervals.
- Trench plugs would be constructed at all well-defined livestock trails (as determined by the EI, in conjunction with the agencies' compliance monitor) and at maximum 1-mile intervals to allow for livestock to cross the open trench. The EI, in conjunction with the agencies' compliance monitor, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal movement or escape from the trench.
- Temporary fencing would be installed as required to prevent livestock entry into the construction work area.

Implementation of these mitigation measures would reduce impacts on grazing allotments to less than significant levels.

TABLE 4.8.2-1

Grazing Allotments Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Administration Agency	Field Office	Allotment Name	I.D. Number	Total Acres a/	Type		AUM (Total Avarage Actual Use) b/	AC/AUM	Beginning MP	Ending MP	Miles Affected	Approx. Acres Affected c/	AUMs Affected d/	Percent Allotment Affected
						Animal	Range								
WYOMING															
Muddy Creek Loop	BLM	Kemmerer	Carter	11308	251,313	Sheep/cattle	Perennial	11,129	8.4	0.3	12.1	5.7	58.8	1.3	0.02%
	BLM	Kemmerer	Cumberland Uinte	01208	355,713	Sheep/cattle	Perennial	24,973	7.8	12.4	13.3	0.9	7.9	0.2	0.00%
	BLM	Kemmerer	Albert Creek	11202	39,022	Sheep	Perennial	1,212	8.9	18.4	25.7	3.1	33.4	NA	0.09%
	BLM	Kemmerer	Cumberland Uinte	01206, 11202	394,735	Cattle/sheep	Perennial	28,185	7.7	25.8	27.0	1.2	13.5	0.3	0.00%
	BLM	Kemmerer	Albert Creek Cumberland Uinta	01208	NA (Not Available)	Cattle/sheep	Perennial	24,073	7.8	27.9	30.3	2.3	25.1	0.5	0.01%
	BLM	Kemmerer	Cumberland	01206	355,713	Cattle/sheep	Perennial	24,973	7.8	30.8	31.9	1.3	14.1	0.3	0.00%
	BLM	Kemmerer	Rock House	11503	13,195	Cattle	Perennial	452	7.9	32.2	33.5	1.3	14.2	0.3	0.11%
	BLM	Kemmerer	Byrne Creek	21515	9,068	Sheep/cattle	Perennial	284	8.9	34.5	38.8	1.0	11.0	0.2	0.12%
	BLM	Kemmerer	Hinshaw Creek	21507	12,320	Sheep/cattle	Perennial	344	8.1	38.7	41.2	1.5	16.0	0.3	0.13%
	BLM	Kemmerer	Blake Hollow	11525	7,023	Sheep/cattle	Perennial	225	7.9	45.5	47.5	0.8	8.8	0.2	0.12%
	BLM	Kemmerer	Duel	21516, 21513	20,849	Sheep/cattle	Perennial	284	7.1	49.9	50.7	0.8	9.2	0.2	0.04%
	BLM	Kemmerer	Glosscock Hollow Glosscock Hollow	21513	18,255	Sheep	Perennial	323	8	51.1	51.4	0.3	3.3	0.1	0.02%
UTAH															
Elberta Loop	BLM	Fillmore	Kimball Creek	5044	26,305	NA	NA	2,431	NA	199.5	203.8	4.4	42.1	NA	0.16%
	BLM	Fillmore	Ferner-Dog Valley	4502	18,967	Cattle	NA	1,148	NA	203.8	206.5	2.6	28.6	NA	0.15%
	BLM	Fillmore	Garrett	4505	158,503	Cattle	NA	788	NA	206.5	218.4	9.9	96.9	NA	0.06%
	BLM	Fillmore	Sage Valley 16	5703	5,696	Cattle	NA	433	NA	218.4	218.1	1.8	19.1	NA	0.33%
	BLM	Fillmore	Middle Fork	5724	6,155	Cattle	NA	153	NA	218.1	218.4	0.2	2.5	NA	0.04%
	BLM	Fillmore	Sage Valley 16	5703	5,698	Cattle	NA	433	NA	218.4	219.5	1.2	12.4	NA	0.22%
	BLM	Fillmore	Chicken Creek	5709	26,813	Cattle	NA	48	NA	219.5	228.3	6.5	68.4	NA	0.25%
	BLM	Fillmore	Dust Bowl	5752	9,267	Cattle	NA	701	NA	228.3	229.3	3.0	31.0	NA	0.33%
	BLM	Fillmore	Red Butte	5761	4,980	Cattle	NA	392	NA	229.3	231.3	2.0	22.0	NA	0.44%
	BLM	Fillmore	Chicken Creek	5709	26,813	Cattle	NA	48	NA	231.3	238.7	7.3	74.8	NA	0.28%
	BLM	Fillmore	Summit	5769	2,063	Cattle	NA	58	NA	245.1	249.4	4.2	43.9	NA	2.13%
	BLM	Fillmore	Squidike	5774	44,385	NA	NA	NA	NA	272.2	274.5	2.2	32.2	NA	0.07%
Fillmore Loop	BLM	Fillmore	Squidike	5774	44,385	NA	NA	NA	NA	278.8	277.8	1.0	10.1	NA	0.02%
	BLM	Fillmore	Black Point	5782	25,818	Cattle	NA	2,020	NA	283.6	283.8	0.2	1.8	NA	0.01%
	BLM	Fillmore	Black Point	5782	25,818	Cattle	NA	2,020	NA	284.2	286.9	2.7	28.7	NA	0.10%
	BLM	Fillmore	Twin Peaks	5785	217,382	Cattle	NA	13,387	NA	286.9	297.5	10.6	107.8	NA	0.05%
	BLM	Fillmore	East Antelope	5796	19,669	Cattle	NA	471	NA	297.5	300.5	3.0	32.2	NA	0.18%
	BLM	Cedar City	Mineral Range	6107	148,895	Cattle	Perennial	11,813	10	300.5	306.0	5.5	61.8	8.2	0.04%
	BLM	Cedar City	Hanson	6120	37,081	Cattle	Perennial	347	7	306.0	310.4	4.4	47.0	8.7	0.13%
	BLM	Cedar City	Milford Bench	6119	19,415	Cattle	Perennial	0	7	310.4	315.0	4.7	51.0	7.3	0.26%
	BLM	Cedar City	Whitaker	6118	25,479	Cattle	Perennial	1,384	7	315.0	323.4	8.4	90.8	13.0	0.36%
	BLM	Cedar City	Minersville No. 2	6102	25,302	Cattle	Perennial	625	8	323.4	324.1	0.8	6.4	0.8	0.03%
	BLM	Cedar City	Minersville No. 4.a	6104	23,823	Cattle	Perennial	1,398	20	324.1	326.1	2.1	21.2	1.1	0.09%
	BLM	Cedar City	Minersville No. 4.b	6104	30,035	Cattle	Perennial	1,398	20	328.1	332.1	6.0	63.3	3.2	0.21%
	BLM	Cedar City	Minersville No. 3.e	6103	25,713	Cattle/sheep	Perennial	105	7	332.1	338.8	4.7	47.8	6.9	0.19%
	BLM	Cedar City	Minersville No. 5	6105	16,753	Cattle	Perennial	2,245	7	336.8	336.9	0.1	0.8	0.1	0.00%
	BLM	Cedar City	Minersville No. 3.e	6103	25,713	Cattle/sheep	Perennial	105	7	336.9	338.7	1.8	19.4	2.8	0.08%
	BLM	Cedar City	Minersville No. 3.b	8103	636	Cattle/sheep	Perennial	105	7	338.7	339.3	0.8	5.6	0.8	0.88%
	BLM	Cedar City	Minersville No. 3.a	6103	25,713	Cattle/sheep	Perennial	105	7	339.3	339.3	0.1	0.5	0.1	0.00%
	BLM	Cedar City	Minersville No. 5	6105	18,753	Cattle	Perennial	2,245	7	339.3	341.4	2.1	22.7	3.2	0.14%
	BLM	Cedar City	Adams Well	5009	23,416	Cattle/sheep	Perennial	2,042	5	341.4	348.5	7.1	77.7	15.5	0.33%
	BLM	Cedar City	Norte Well	15051	6,438	Cattle	Perennial	238	10	348.5	351.3	2.8	29.3	2.9	0.45%
	Private	NA	Private	5030	3,321	NA	Perennial	NA	NA	351.3	352.8	1.4	13.1	NA	0.40%
	BLM	Cedar City	Desert	15020	9,240	Cattle	Perennial	810	15	352.8	352.8	0.1	0.7	0.1	0.01%
	BLM	Cedar City	Perkins 1	15055	1,349	Cattle	Perennial	206	15	352.8	353.7	0.9	8.0	0.5	0.59%
	BLM	Cedar City	Perkins 2	15055	2,509	Cattle	Perennial	206	15	353.7	353.9	0.1	1.3	0.1	0.05%
	BLM	Cedar City	Perkins 1	15055	1,349	Cattle	Perennial	206	15	353.9	353.9	0.1	0.7	0.1	0.05%
	BLM	Cedar City	Perkins 2	15055	2,509	Cattle	Perennial	206	15	353.9	355.7	1.8	19.1	1.3	0.76%
	BLM	Cedar City	Leigh Livestock	15039	16,728	Cattle	Perennial	1,424	15	355.7	360.2	4.5	47.1	3.1	0.28%

TABLE 4.8.2-1 (cont'd)

Grazing Allotments Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Administration Agency	Field Office	Allotment Name	I.D. Number	Total Acres a/	Type		AUM (Total Average Actual Use) b/	AC/AUM	Beginning MP	Ending MP	Miles Affected	Approx. Acres Affected c/	AUMs Affected d/	Percent Allotment Affected
						Animal	Range								
	BLM	Cedar City	Dick Palmer Wash	15021	18,744	Cattle	Perennial	135	15	380.2	388.8	8.8	62.3	4.2	0.37%
	BLM	Cedar City	Butte	15018	32,277	Cattle	Perannial	540	15	388.8	388.8	4.0	38.7	2.5	0.11%
	BLM	Cedar City	Antalope Spring	5011	2,029	Cattle/sheep	Perannial	290	15	368.8	370.3	1.5	13.2	0.9	0.65%
	Privata	NA	NA	0	146	NA	NA	NA	NA	370.3	370.8	0.5	5.8	NA	3.97%
	Privata	NA	NA	0	191,459	NA	NA	NA	NA	370.8	371.0	0.2	1.9	NA	0.00%
	Private	NA	NA	0	146	NA	NA	NA	NA	371.0	371.1	0.1	1.2	NA	0.81%
	BLM	Cedar City	Sand Spring	15064	6,705	Cattle	Perennial	169	20	371.1	373.4	2.3	20.8	1.0	0.31%
	Private	NA	NA	0	191,459	NA	NA	NA	NA	373.4	374.2	0.8	7.4	NA	0.00%
	BLM	Cedar City	Sand Spring	15064	8,705	Cattle	Perennial	189	20	374.2	375.3	1.1	12.0	0.8	0.18%
	Privata	NA	NA	0	191,459	NA	NA	NA	NA	375.3	375.4	0.5	4.7	NA	0.00%
	BLM	Cedar City	Sand Ridga	5063	1,090	Cattla	Parannial	0	20	375.9	377.1	1.2	11.0	0.8	1.01%
	BLM	Cedar City	Slivar Peak	15067	3,869	Cattle	Parennial	0	20	377.1	378.3	1.3	11.8	0.8	0.31%
	Private	NA	NA	0	191,459	NA	NA	NA	NA	378.3	379.8	1.5	18.3	NA	0.01%
	BLM	Cedar City	Pinto Craak	15057	2,617	Cattle	Parannial	0	10	379.8	381.7	1.9	23.2	2.3	0.89%
	BLM	Cedar City	Savy East	15065	554	Cattla	Perannial	10	10	381.7	382.5	0.8	11.2	1.1	2.03%
	FS	Dixie National Forest	West Pinto	NA	28,900	NA	NA	NA	NA	382.5	383.0	0.5	8.8	NA	0.03%
	Priveta	NA	NA	0	191,459	NA	NA	NA	NA	383.0	384.7	1.7	21.8	NA	0.01%
	FS	Dixie National Forest	West Pinto	NA	26,900	NA	NA	NA	NA	384.7	388.4	3.7	52.7	NA	0.20%
	FS	Dixie National Forest	Gunlock	NA	41,826	NA	NA	NA	NA	388.4	388.4	0.0	0.4	NA	0.00%
	FS	Dixie National Forest	West Pinto	NA	26,900	NA	NA	NA	NA	388.4	388.9	0.5	6.9	NA	0.03%
	FS	Dixie National Forest	Mogotsu	NA	35,586	NA	NA	NA	NA	388.9	389.4	0.5	8.5	NA	0.02%
	FS	Dixie National Forest	West Pinto	NA	26,900	NA	NA	NA	NA	389.4	389.6	0.3	3.8	NA	0.01%
	FS	Dixie National Forest	Mogotsu	NA	35,586	NA	NA	NA	NA	389.8	389.9	0.3	3.2	NA	0.01%
	FS	Dixie National Forest	West Pinto	NA	26,900	NA	NA	NA	NA	389.9	390.3	0.4	5.6	NA	0.02%
	FS	Dixie National Forest	Mogotsu	NA	35,588	NA	NA	NA	NA	390.3	390.6	0.3	3.5	NA	0.01%
	FS	Dixie National Forest	West Pinto	NA	26,900	NA	NA	NA	NA	390.6	390.9	0.4	5.6	NA	0.02%
	FS	Dixie National Forest	Mogotsu	NA	35,586	NA	NA	NA	NA	390.9	400.1	9.1	130.8	NA	0.37%
	FS	Dixie National Forest	Gunlock	NA	41,826	NA	NA	NA	NA	400.1	403.6	3.8	52.2	NA	0.12%
	FS	Dixie National Forest	Bull Vallay	NA	37,707	NA	NA	NA	NA	403.6	404.1	0.4	8.5	NA	0.02%
	BLM	St. George	Mogotsu	4065	3,050	Cattle	NA	35	NA	404.1	404.2	0.1	1.1	NA	0.04%
	BLM	St. Georga	Minara Wash	4036	2,012	Cattle	NA	219	NA	404.2	405.4	1.2	17.6	NA	0.88%
	BLM	St. George	Canaan Gap	4141	1,763	Cattle	NA	254	NA	405.4	406.5	1.1	15.7	NA	0.89%
Veyo Loop	BLM	St. Georga	Canaan Gap	4141	1,763	Cattle	NA	254	NA	406.5	406.6	0.1	2.0	NA	0.11%
	BLM	St. George	Twin Peaks 1	4054	4,448	Cattle	NA	538	NA	406.6	407.9	1.3	18.3	NA	0.41%
	BLM	St. Georga	Twin Paaks 2	4054	3,592	NA	NA	NA	NA	407.9	409.6	1.7	24.5	NA	0.68%
	BLM	St. Georga	Twin Paaks 3	4054	10,862	NA	NA	NA	NA	409.6	412.6	3.0	43.7	NA	0.40%
	BLM	St. George	Desart Inn	4018	6,816	Cattle	NA	863	NA	412.6	415.0	2.4	35.3	NA	0.52%
	BLM	St. George	Jackson Wash 1	4030	18,282	Cattle	NA	1,519	NA	415.0	419.1	4.1	59.1	NA	0.36%
	BLM	St. George	Jackson Wash 2	4030	12,338	NA	NA	NA	NA	419.1	420.8	1.7	25.1	NA	0.20%
	BLM	St. Georga	Scarecrow Peak 1	4048	23,196	Cattla	NA	3,558	NA	420.8	427.0	6.2	89.6	NA	0.39%
	BLM	St. Georga	Scarecrow Peak 2	4048	12,958	NA	NA	NA	NA	427.0	432.8	5.8	83.8	NA	0.85%
	BLM	St. Georga	Scarecrow Paak 3	4048	27,507	NA	NA	NA	NA	432.8	432.8	0.0	0.2	NA	0.00%
NEVADA															
Veyo Loop	BLM	St. George	Scarecrow Peak 3	4048	27,507	NA	NA	NA	NA	432.8	438.7	5.9	86.0	NA	0.31%
	BLM	St. Georga	Terry	Utah	31,534	NA	NA	NA	NA	432.8	438.8	5.9	86.1	NA	0.27%
	BLM	Ely	Sand Hollow	01064	34,701	Closed e/	NA	NA	NA	438.8	440.5	1.8	25.6	closed	0.07%
	BLM	Ely	Baacon	01076	8,496	Closed e/	NA	NA	NA	440.5	443.7	3.2	46.9	closed	0.72%
	BLM	Ely	Gourd Spring	01071	97,534	Closed f/	NA	NA	NA	443.7	455.3	11.5	167.8	closed	0.17%
	BLM	Las Vegas	Toquop Shaap	02023	23,634	Closed	Ephamaral	NA	NA	455.3	457.9	2.8	38.0	NA	0.18%
	BLM	Las Vegas	Upper Mormon Mesa	02024	45,648	Closed	Ephameral	NA	NA	457.9	468.1	10.2	148.2	NA	0.32%
	BLM	Las Vegas	Glendale	02009	22,808	Closed	Ephamaral	NA	NA	468.1	473.9	5.8	84.3	NA	0.37%
	BLM	Las Vegas	Acton-Farriar	02001	47,234	Closed	Ephamaral	NA	NA	473.9	475.9	2.0	29.8	NA	0.06%
	BLM	Las Vegas	Ute	02025	7,258	Closed	Ephameral	NA	NA	475.9	478.8	2.7	38.3	NA	0.53%
	Private	NA	NA	A	71,813	NA	NA	NA	NA	478.8	493.8	23.8	315.2	NA	0.44%
	BLM	Las Vegas	Dry Leke	02007	35,413	Closed	Ephameral	NA	NA	493.8	500.1	8.3	68.9	NA	0.19%
Dry Lake Loop 1	BLM	Las Veges	Dry Lake	02007	35,413	Closed	Ephameral	NA	NA	500.1	501.7	1.6	16.9	NA	0.05%
	BLM	Las Vegas	Les Vagas Valley	A	24,364	Closed	Ephamerel	NA	NA	501.7	510.0	8.4	91.5	NA	0.38%
	BLM	Las Vegas	Military Withdrawal	A	4,559,288	Closed	Ephamaral	NA	NA	510.0	511.0	1.0	10.9	NA	0.00%
	BLM	Las Vegas	Las Vegas Valley	A	24,364	Closed	Ephamaral	NA	NA	511.0	511.1	0.0	0.5	NA	0.00%

TABLE 4.8.2-1 (cont'd)

Grazing Allotments Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Administration Agency	Field Office	Allotment Name	I.D. Number	Total Acres a/	Type		AUM (Total Average Actual Use) b/	AC/AUM	Beginning MP	Ending MP	Miles Affected	Approx. Acres Affected c/	AUMs Affected d/	Percent Allotment Affected
						Animal	Range								
	BLM	Las Vegas	Military Withdrawal	A	4,559,286	Closed	Ephemeral	NA	NA	511.1	512.3	1.2	13.5	NA	0.00%
	BLM	Las Vegas	Las Vegas Valley	A	24,364	Closed	Ephemeral	NA	NA	512.3	514.3	2.0	21.8	NA	0.09%
	BLM	Las Vegas	Military Withdrawal	A	4,559,286	Closed	Ephemeral	NA	NA	514.3	515.0	0.7	7.4	NA	0.00%
	BLM	Las Vegas	Las Vegas Valley	A	24,364	Closed	Ephemeral	NA	NA	515.0	517.0	2.1	22.4	NA	0.09%
	Private	NA	NA	A	258,661	Closed	Ephemeral	NA	NA	517.0	517.3	0.3	3.2	NA	0.00%
	BLM	Las Vegas	Las Vegas Valley	A	24,364	Closed	Ephemeral	NA	NA	517.3	517.8	0.3	2.9	NA	0.01%
Dry Lake Loop 2	BLM	Las Vegas	Spring Mountain	04444	233,522	Closed	Ephemeral	NA	NA	543.6	556.4	12.6	140.0	NA	0.06%
	BLM	Las Vegas	Toyabe National Forest	A	323,036	Closed	NA	NA	NA	556.4	558.2	1.6	19.1	NA	0.01%
	BLM	Las Vegas	Spring Mountain	04444	233,522	Closed	Ephemeral	NA	NA	556.2	559.9	1.7	16.7	NA	0.01%
	BLM	Las Vegas	Table Mountain	15426	91,492	Closed	Ephemeral	NA	NA	559.9	565.8	5.9	64.3	NA	0.07%
Goodsprings Loop	BLM	Las Vegas	Table Mountain	15426	91,492	Closed	Ephemeral	NA	NA	585.6	573.3	7.5	108.9	NA	0.12%
	BLM	Las Vegas	Roach Lake	15421	16,644	Closed	Ephemeral	NA	NA	573.3	579.2	5.9	65.5	NA	0.46%
CALIFORNIA															
Goodsprings Loop	BLM	Needles	Clark Mtn. Area	9003	119,952	Cattle	Ephemeral	1,872	64.1	579.4	593.6	13.1	149.4	0.5	0.12%
	BLM	Needles	Valley Wells	9009	237,127	Cattle	Ephemeral	4,644	51.1	594.6	613.6	18.9	217.4	0.9	0.09%
	BLM	Barstow	Cronese Lake Area	7219	54,250	Cattle	Ephemeral	NA	NA	643.0	654.5	11.2	129.4	0.3	0.24%
Daggett Loop															
	BLM	Barstow	Stoddard Mtn. Area g/	7114	100,569	Sheep	Ephemeral	NA	NA	23.09	41.09	9.8	252.5	0.0	0.25%

a/ Includes total acres of the allotment. Obtained from GIS information where available.

b/ Includes the average actual Animal Unit Months (AUMs) used for each allotment, with the exception of the St. George and Cedar City Field Offices, which consist of authorized use AUMs.

c/ Includes construction right-of-way and temporary extra workspace.

d/ Based on information provided by KRGT and the BLM.

e/ The Sand Hollow and Beacon Allotments were closed due to sale to the Clark County Habitat Conservation Fund and were identified as part of the Beaver Dam Slope Area of Critical Environmental Concern within the Caliente Management Framework Plan for the Management of Desert Tortoise Habitat.

f/ Only the portion of the Gourd Spring Allotment crossed by KRGT's existing and proposed pipelines is closed due to the presence of critical desert tortoise habitat. The remaining portion of the allotment is open to livestock grazing.

g/ Stoddard Mountain Area is an ephemeral sheep allotment that has not been grazed since 1990 due to desert tortoise critical habitat.

4.8.3 Irrigated Land

Of the 44.2 miles of agricultural land crossed by the pipeline, about 11.5 miles are irrigated crop and hay lands. About 9.4 miles of these irrigated lands are in Utah along the Coyote Creek 1, Salt Lake, Elberta, and Fillmore Loops. The remaining 2.1 miles are in Nevada along the Veyo Loop (about 0.5 mile) and in California along the Goodsprings Loop (about 1.6 miles). The types of irrigation systems that would be crossed include a combination of furrow and wheel (3.8 miles), wheel (2.6 miles), a combination of furrow and flood (1.9 miles), pivot (1.4 miles), flood (1.3 miles), and furrow (0.5 mile). Table 4.8.3-1 (below) summarizes the location and amount of irrigated crop and hay lands crossed by the pipeline route.

TABLE 4.8.3-1

Irrigated Crop and Hay Land Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Beginning Milepost	Ending Milepost	Approximate Crossing Length (Miles)	Irrigation Type
UTAH				
Coyote Creek Loop 1	83.9	84.2	0.3	Flood
Salt Lake Loop	148.5	149.0	0.5	Furrow
	149.4	150.2	0.8	Wheel
	167.8	168.0	0.2	Pivot
	168.4	168.6	0.2	Pivot
Elberta Loop	254.9	256.2	1.3	Furrow/flood
	263.2	263.8	0.6	Furrow/flood
	267.3	267.8	0.5	Flood
	267.8	268.6	0.8	Pivot
	268.6	269.0	0.4	Wheel
Fillmore Loop	278.4	281.1	2.7	Furrow/wheel
	324.9	326.0	1.1	Furrow/wheel
Subtotal			9.4	
NEVADA				
Veyo Loop	476.9	477.4	0.5	Flood
Subtotal			0.5	
CALIFORNIA				
Goodsprings Loop	678.8	680.2	1.4	Wheel
	680.7	680.9	0.2	Pivot
Subtotal			1.6	
Project Total			11.5	

Several activities could damage or interrupt irrigation during construction, including trenching, grading, stringing, welding, and backfilling. If the flow of irrigation water is disrupted for a prolonged period, crops could be damaged and crop yields reduced. To minimize the potential for these impacts, KRGT would maintain the flow of irrigation systems or coordinate the temporary shutoff of systems with affected landowners or tenants. KRGT would compensate the landowner for damages and lost production and include the agreement as a special right-of-way stipulation in the construction contract. Disturbed drainage furrows, water piping, or heads would be restored, repaired, or replaced as soon as possible and monitored for problems after construction is completed. Where pivot irrigation is active, KRGT would complete construction and restoration within a time frame negotiated with the landowner or tenant. As part of restoration of the right-of-way, survey controls would be implemented to restore the surface to more precise elevations. In addition, KRGT would communicate with the landowners or tenants following construction and restoration to ensure the irrigation systems are functioning properly. Additional repair or remedial work would be performed if requested by the landowner. KRGT would also coordinate with the landowner to assess crop productivity for a period of at least 2 years, and provide compensation where crop yields show decline. Impact and mitigation would be site-specific and based on agreements and/or easement conditions with the affected landowner or tenants. Based on negotiations between the landowner and KRGT, mitigation

may include additional compensation for portions of fields that may be taken out of production for all or part of the season. Implementation of these measures would reduce impact on irrigated lands to less than significant levels.

4.8.4 Existing Residences and Planned Developments

KRGT's proposed construction work area (*i.e.,* construction right-of-way and extra work areas) would be located within 50 feet of 26 residences. Of the 26 residences, 1 is located on the Coyote Creek Loop 1, 23 are located on the Salt Lake Loop, and 2 are located on the Veyo Loop. Table 4.8.4-1 (page 4-180) lists these residences by milepost and indicates the distance and orientation of each from the proposed construction work area. No residences are located within 50 feet of the compressor station sites.

In residential areas, the two most significant impacts associated with construction and operation of a pipeline are disturbance during construction and encumbrance of property for future uses caused by the easement. This includes the limitation on future permanent structures within the permanent right-of-way. The 26 residences within 50 feet of the construction work area would be most likely to experience the effects of construction and operation of the project.

Temporary construction impact on residential areas could include inconvenience caused by noise and dust generated by construction equipment, personnel, and trenching of roads or driveways; ground disturbance of lawns; removal of trees, landscaped shrubs, or other vegetative screening between residences and/or adjacent rights-of-way; potential damage to existing septic systems or wells; and removal of aboveground structures, such as sheds or trailers, from within the right-of-way.

KRGT has prepared and would follow site-specific residential construction mitigation plans to minimize disruption and to maintain access to the 26 residences located within 50 feet of the construction work area. The plans show the pipeline centerline; the limits of the construction work area; each residence and other structures; existing pipelines and powerlines; waterbodies, roads, driveways, fences, trees or other landscaping, and private wells; and the location of safety fencing that would be installed during construction. The site-specific mitigation measures for each residence are listed in table 4.8.4-1 (page 4-180).

KRGT's proposal maintains more than a 25-foot separation between the construction work area and 24 of the identified 26 residences. As shown in table 4.8.4-1 (page 4-180), two residences are located within 25 feet of the construction work area (MPs 137.75 and 138.88). These residences abut an existing electric transmission line utility corridor and the proposed route would be collocated with the electric transmission line. KRGT's construction activities would be confined to the existing utility corridor.

Implementation of KRGT's site-specific residential construction mitigation plans would reduce potential impacts on residences located near the construction work area to a less than significant level.

A commercial building would be located about 25 feet west of the construction work area at about MP 130.5 of the Coyote Creek Loop 2. KRGT's proposed mitigation measures for commercial buildings are similar to those proposed for residential structures and would reduce potential impacts to a less than significant level.

Residential and commercial properties encumbered by pipeline easements would sustain long-term impacts associated with the permanent right-of-way. The easements would prohibit certain types of use, such as the construction of aboveground structures, including house additions, garages, patios, pools, or any other object not easily removable, or the planting and cultivating of trees or orchards.

TABLE 4.8.4-1

Residences Within 50 Feet of the Construction Work Area and Proposed Mitigation for the Kern River 2003 Expansion Project

State/Facility	Milepost	Distance from Pipeline Centerline (feet)	Distance from Edge of Construction Work Area (feet)	Orientation from the Construction Work Area	KRGT's Proposed Mitigation
UTAH					
Coyote Creek Loop 1	90.31	67	27	Southwest	• reduce the width of the construction work area to 65 feet; • install the proposed pipeline between two existing pipelines; • work over the existing KRGT pipeline; • install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; and • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust.
Salt Lake Loop	137.58	80	40	East	• reduce the width of the construction work area to 65 feet; • install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust; and • stay within the existing electric transmission line utility corridor.
	137.65	67	27	East	
	137.68	70	30	East	
	137.72	77	37	East	
	137.75	59	19	East	
	138.69	83	48	West	• reduce the width of the construction work area to 60 feet; • work over the existing KRGT pipeline; • install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust; and • stay within the existing electric transmission line utility corridor.
	138.70	81	46	West	• reduce the width of the construction work area to 60 feet; • install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust; and • stay within the existing electric transmission line utility corridor.
	138.72	63	28	West	

TABLE 4.8.4-1 (cont'd)

Residences Within 50 Feet of the Construction Work Area and Proposed Mitigation for the Kern River 2003 Expansion Project

State/Facility	Milepost	Distance from Pipeline Centerline (feet)	Distance from Edge of Construction Work Area (feet)	Orientation from the Construction Work Area	KRGT's Proposed Mitigation
	138.86	115	40	East	• install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust; and • stay within the existing electric transmission line utility corridor.
	138.88	88	13	East	
	138.89	112	37	East	
	138.93	90	40	East	
	139.05	121	31	West	
	139.08	125	37	West	
	139.10	119	34	West	
	139.14	122	47	West	
	141.64	141	42	West	• work over the existing KRGT pipeline; • install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust; and • stay within the existing electric transmission line utility corridor.
	141.66	140	42	West	
	141.70	139	45	West	
	142.35	122	22	West	
	142.57	110	30	West	• work over the existing KRGT pipeline; • install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • flag and protect guy wire to power pole; • restore retention pond to the original condition during final restoration; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; and • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust.
	153.89	94	29	West	• install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; and • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust.
	167.99	NA	NA	West	The existing structures are located within the construction work area. The structures are temporary and would be relocated a minimum of 50 feet from the construction work area as negotiated with the landowner.

TABLE 4.8.4-1 (cont'd)

Residences Within 50 Feet of the Construction Work Area and Proposed Mitigation for the Kern River 2003 Expansion Project

State/Facility	Milepost	Distance from Pipeline Centerline (feet)	Distance from Edge of Construction Work Area (feet)	Orientation from the Construction Work Area	KRGT's Proposed Mitigation
NEVADA					
Veyo Loop	474.26	68	43	South	• install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust; and • transplant or replace (as negotiated with the landowner) trees within the construction work area that must be removed but that are not located on the proposed or existing permanent rights-of-way.
	474.33	67	27	North	• reduce the width of the construction work area to 65 feet; • work over the existing KRGT pipeline; • install safety fencing and warning signs along the edge of the construction work area for a distance of 100 feet on either side of the residence; • restrict construction activities to daylight hours to minimize noise impacts and inconvenience; • maintain a water truck with the construction crew to water the disturbed area to control fugitive dust; and • replace/relocate drain field and septic tank affected by construction as negotiated with the landowner.
Total 26					

The project would not conflict with any approved residential or commercial development plans. The proposed route does not cross but is located near several planned developments, primarily along the Salt Lake Loop. Section 4.13 includes a description of these planned developments and an analysis of potential cumulative effects when considered in conjunction with the Kern River 2003 Expansion Project.

4.8.5 Transportation

The proposed pipeline route crosses or is adjacent to several linear transportation and utility rights-of-way including highways, roads, railroad tracks, and powerlines. The majority of the pipeline route would be in remote rural areas where existing traffic volumes are low. Major highways such as state routes or interstates would be crossed at 33 locations. Table 4.8.5-1 (page 4-184) lists the major highways or interstates crossed by the pipeline route. Several county and local roads would also be crossed. Many of these roads are in the more developed areas along the Salt Lake Loop in Salt Lake County, Utah.

The existing transportation system within the project area could be temporarily affected by the influx of construction workers and the delivery of construction equipment and materials to the project area. Details on the effect of construction traffic in the project area are presented in section 4.9.5.

KRGT would apply for the permits necessary for road and railroad crossings. Major or improved roads and railroads would be crossed by boring to avoid disrupting traffic. Unsurfaced, lightly traveled, or rural roads would be crossed by the open-cut method if approved by the owner or land management agency. Where open-cut road crossings are conducted, KRGT would detour or control traffic during construction to minimize traffic delays at these locations. If reasonable detours are not feasible, at least one lane of traffic would be left open. No new roadways would be created. Most open-cut road crossings would be completed in 1 day. All roadways would be maintained in such a way to allow access for emergency and private vehicles. KRGT would place and maintain flag persons, signs, barricades, guard rails, safety fence, and signals at road crossings as required by city, county, and state regulations and right-of-way and permit stipulations. In the absence of such regulations, KRGT would place danger signs that would be visible in both directions during darkness at the crossing location and also 500 feet in each direction from the crossing. At a minimum, the danger signs would be legible at 100 feet and flashers would run continuously from 30 minutes before sundown until 30 minutes after sunrise. Implementation of these measures would reduce the impacts of open-cut road crossings to less than significant levels.

KRGT would utilize the same access roads that were used during installation of the existing KRGT pipeline and KRGT/Mojave Common System facilities. Other roads constructed by public and private entities since completion of the pipeline system may also be used provided they are suitable and landowner approval is received. No new access roads would be created. However, modifications to some of the existing roads would be required. Modifications would include grading and/or widening. A list of the access roads proposed for use during construction and KRGT's proposed modifications is provided in table D-2 in appendix D (pages D-44 through D-61).

No significant impacts would be expected during operation of the project because there would be only minimal traffic associated with operation and maintenance of the project and the traffic would coincide with the current levels of traffic associated with operation and maintenance of the existing KRGT pipeline and KRGT/Mojave Common System facilities. The project would not result in a decrease in the level of service of a roadway.

TABLE 4.8.5-1

Major Highways and Interstates Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Road Name
WYOMING		
Opal Loop	0.4	State Highway 30
Muddy Creek Loop	13.9	State Highway 412
	18.2	U.S. Highway 189
	43.2	Interstate 80
	49.3	State Highway 150
UTAH		
Coyote Creek Loop 1	87.0	U.S. Highway 189
	87.3	Interstate 80
Coyote Creek Loop 2	131.4	State Highway 186
Salt Lake Loop	135.5	State Highway 201
	140.5	State Highway 173
	144.9	State Highway 48 (New Bingham Highway)
	146.5	Old Bingham Highway
	150.2	State Highway 111
	161.1	State Highway 73
Elberta Loop	191.7	State Highway 6
	211.2	State Highway 132
	254.6	U.S. Highway 50
	266.0	State Highway 100
Fillmore Loop	323.5	State Highway 21
	327.1	State Highway 351
	395.0	State Highway 18
NEVADA		
Veyo Loop	475.3	State Highway 168
Dry Lake Loop 1	502.4	State Highway 93
Dry Lake Loop 2	548.5	State Highway 160
	564.7	State Highway 161
CALIFORNIA		
Goodsprings Loop	624.6	State Highway 127
	674.4	Interstate 15
	674.5	State Highway 91
Daggett Loop	1.6	Interstate 40 / U.S. Highway 66
	9.9	State Highway 247
	13.8	Interstate 15
	41.8	U.S. Highway 395
	55.2	State Route 58
	69.2	State Route 58
	78.3	State Highway 14

Caltrans raised concerns about the potential of the proposed pipeline facilities to encroach on Caltrans rights-of-way or near bridges and the potential impact of the proposed project on the State Route 58 Project. The proposed route would cross several major roadways within California (see table 4.8.5-1(page 4-184)). KRGT would obtain the necessary permits needed to construct and operate its facilities at these crossing locations, including an encroachment permit for work that encroaches on, over, or under state rights-of-way (see table 1.6-1 (page 1-21)). There are no bridges or other structures at any of these crossings. A portion of the proposed Daggett Loop would also be parallel to State Route 58 for several miles but would not be located within the road right-of-way except at the two crossing locations at MPs 55.2 and 69.7. Caltrans is planning to realign and widen State Route 58 in San Bernardino County to a four-lane expressway from the Kern County line to approximately 7.5 miles east of U.S. Highway 395. Construction of the State Route 58 Project is currently scheduled to start in August 2006. Two existing pipelines, including the All American Pipeline, cross State Route 58 along the eastern portion of the proposed State Route 58 Project. KRGT's proposed route, however, would be located adjacent to the existing KRGT/Mojave Common System pipeline, which is located south of the State Route 58 right-of-way associated with the Caltrans Project (MPs 34.7 to 47.1). As a result, no impact on the State Route 58 Project is anticipated.

4.8.6 Recreation and Special Interest Areas

The proposed route would not cross national or state designated Wild and Scenic Rivers, natural landmarks, or designated coastal zone management areas. However, the proposed route does cross several recreational and/or special interest areas and is adjacent to several others. Some of the recreational and/or special interest areas crossed by or located near the proposed pipeline route are special management areas (SMA) with specified boundaries; others are general uses that occur in various locations along the pipeline route. One of the primary concerns when crossing recreational or special interest areas is the impact of construction on the purpose for which the area was established, recreational activities, public access, resources an area aims to protect, and safety and security in the case of military bases. Disruption and noise during construction could be a nuisance to recreational users, and could cause disturbance to wildlife, especially in protected areas. The duration of impact on any one area would be temporary, lasting several days to several weeks.

4.8.6.1 Special Management Areas

The proposed pipeline would cross or be adjacent to several SMAs. Table 4.8.6-1 (page 4-186) summarizes these areas and provides land ownership information. A more detailed discussion of each area is presented below.

Wyoming

Oregon National Historic Trail - The Muddy Creek Loop would cross the Oregon National Historic Trail near the intersection of Highways 412 and 189 on land administered by the BLM. The trail was a route to the Pacific Ocean used by fur traders, gold miners, and missionaries. Beginning in 1841 and continuing for more than 20 years, an estimated 300,000 emigrants followed the route from Independence, Missouri to Oregon City, Oregon. The 2,170-mile-long trail passes through Missouri, Kansas, Nebraska, Wyoming, Idaho, and Oregon and was established as a National Historic Trail in 1978.

The proposed pipeline would be installed immediately adjacent to the existing KRGT pipeline at the crossing of the Oregon National Historic Trail. During construction, KRGT would establish detours around the construction work area to minimize impact on recreational use of the trail. After construction, KRGT would restore the trail to its preconstruction condition. As a result, impacts would be less than significant. Additional discussion of the trail is presented in section 4.10.4.

TABLE 4.8.6-1

Special Management Areas (SMA) Crossed by or Adjacent to the Kern River 2003 Expansion Project

State/Facility	Milepost Location a/	Name of Area	Land Ownership at Crossing Location
WYOMING			
Muddy Creek Loop	NA	Oregon National Historic Trail	Bureau of Land Management (BLM)
	NA	Mormon-California National Historic Trail	BLM
UTAH			
Salt Lake Loop	155.5 - 155.6 156.3 - 156.6 156.9 - 158.4 159.4 - 159.9	Camp Williams	Military - Utah National Guard
Fillmore Loop	NA	Wildhorse Canyon Obsidian Quarry	Private
	382.5 - 382.9 384.6 - 404.1	Dixie National Forest	Forest Service (FS) and Private
	NA	Mountain Meadows Historic Site	FS
NEVADA			
Veyo Loop	432.8 - 437.5 438.8 - 444.1	Beaver Dam Slope Area of Critical Environmental Concern (ACEC)	BLM
	444.1 - 444.5 446.9 - 455.3	Mormon Mesa ACEC	BLM
	479.2 - 493.8	Moapa River Indian Reservation	Native American
Dry Lake Loop 1	504.3 - 509.4	Fish and Wildlife #3 Wilderness Study Area (WSA)	BLM - SMA not crossed
	507.0 - 509.4	Coyote Springs ACEC	BLM - SMA not crossed
	509.9 - 512.3 514.2 - 515.0	Nellis Air Force Base	Military - United States Air Force
	513.1 - 514.2 515.0 - 515.3	Edsall Training Center	BLM/Military - Nevada National Guard
Dry Lake Loop 2	550.2 - 565.2	Red Rock Herd Management Area (HMA)	BLM
	552.0 - 557.4	Red Rock Canyon National Conservation Area	BLM
	557.4 - 558.3	Humboldt-Toiyabe National Forest/Spring Mountains National Recreation Area	FS
CALIFORNIA			
Goodsprings Loop Daggett Loop	579.4 - 681.9 0.0 - 82.4	California Desert Conservation Area	BLM and Private
Goodsprings Loop	579.4 - 603.7	Clark Mountain HMA	BLM
	580.0 - 584.5	Stateline Wilderness Area	BLM - SMA not crossed
	584.5 - 598.0	Mesquite Wildemess Area	BLM - SMA not crossed
	586.5 - 598.0	Mojave National Preserve	National Park Service - SMA not crossed
	587.5 - 591.7	Clark Mountain ACEC	BLM
	598.0 - 614.0	Kingston Range Wilderness Area	BLM - SMA not crossed
	618.0 - 623.6	Hollow Hills Wilderness Area	BLM - SMA not crossed
	624.0 - 652.4	Soda Mountains WSA	BLM - SMA not crossed
	627.8 - 639.2	South Avawatz WSA	BLM - SMA not crossed
	642.8 - 643.0	Fort Irwin National Training Center	Military - United States Army
Daggett Loop	3.7-6.8	Marine Corps Firing Range	Military - United States Marine Corps
	41.0 - 42.5 51.2 - 51.4	Edwards Air Force Base	Military - United States Air Force

a/ NA - milepost is not given due to the potential sensitive nature of the resource.

Mormon-California National Historic Trail - The Mormon-California National Historic Trail (also known as the Emigrant Trail) would be crossed by the Muddy Creek Loop on land administered by the BLM. The trail was used between 1840 and 1870 by more than 500,000 people immigrating to the west. The trail corridor was used for thousands of years by Native Americans and in the mid-19th century became the transportation route for successive waves of European trappers, missionaries, soldiers, teamsters, stagecoach drivers, Pony Express riders, and overland immigrants traveling to the Oregon Territory, the Great Basin, and the California gold fields.

At the crossing location, the proposed pipeline would be installed immediately adjacent to the existing KRGT pipeline. During construction, KRGT would establish detours around the construction work area to minimize impact on recreational use of the trail. After construction, KRGT would restore the trail to its preconstruction condition. As a result, impacts would be less than significant. Additional discussion of the trail is presented in section 4.10.4.

Utah

Camp Williams - The proposed route crosses the boundary of Camp Williams, a National Guard training site, in several locations beginning at about MP 155.5 of the Salt Lake Loop. Military land would be crossed for a total of about 2.4 miles in this area. The camp is located 26 miles south of Salt Lake City on 25,000 acres operated by Utah's National Guard. Training facilities include small arms firing ranges, artillery firing ranges, and maneuver areas. No significant impacts associated with construction of the project across Camp Williams are anticipated. Site-specific mitigation measures required by Camp Williams would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.

Wildhorse Canyon Obsidian Quarry - The Wildhorse Canyon Obsidian Quarry, listed on the NRHP, is crossed by the Fillmore Loop. Archaeological and scientific studies suggest that this site has served as a major obsidian quarry and manufacturing station for thousands of years. The proposed route would cross the quarry in a previously disturbed area adjacent to the existing KRGT pipeline. No significant impacts associated with construction of the project through this area are anticipated.

Dixie National Forest - Between MPs 382.5 and 382.9 and MPs 384.6 and 404.1, about 19.9 miles of the Dixie National Forest would be crossed by the proposed Fillmore Loop. Of the 19.9 miles, approximately 17.2 miles are managed by the FS while the remaining 2.7 miles are on privately owned land within the forest boundary. The Dixie National Forest occupies almost 2 million acres and spans 170 miles of southern Utah. It borders the divide between the Great Basin and the Colorado River. Recreational opportunities in the forest are diverse and consist of camping, hunting, hiking, horseback riding, and vehicle-centered activities such as sledding, driving, and snowmobiling. No designated trails or roadless or wilderness areas would be crossed by the proposed pipeline.

The Dixie National Forest has been divided into management areas to facilitate implementation of the Dixie National Forest LRMP. Each management area is composed of lands where management prescriptions apply. Within the Dixie National Forest, the proposed route would cross management areas 1, 2B, 5A, and 6A within the Pine Valley Ranger District.

Management area 1 (general forest direction) includes the management direction, standards, and guidelines that are applicable forest-wide and apply on all management areas except where superceded by the specific direction in a management area (Dixie National Forest LRMP, 1986). General categories of management prescriptions identified for these areas include cultural resources, visual resources, recreation, wilderness areas, wildlife and fish resources, range resources, timber resources, reforestation, riparian areas, water resources, minerals, special use, rights-of-way and land adjustments, soil resources, transportation systems, fire planning and suppression, and air resource management. Approximately 2.9 miles of the proposed route would be within this general management area.

Management area 2B (roaded natural recreation) consists of travel corridors along major traveled routes across the forest or to specific recreational attractions in the forest. The proposed pipeline route would be located within this management area for about 1.1 miles. This area is characterized by a modified natural environment where resource modification and utilization practices usually harmonize with the natural

environment (Dixie National Forest LRMP, 1986). Management emphasis is for rural and roaded-natural recreation opportunities.

The proposed route would cross about 5.2 miles of management area 5A (big game winter range). This management area typically occurs on the lower elevation foothills, benches, and valleys at the base of mountains and plateaus (Dixie National Forest LRMP, 1986). Management emphasis is on winter range for deer, elk, and pronghorn antelope. Treatments are applied to increase forage production of existing grass, forb, and browse species or to alter plant species composition. No roads other than short-term (temporary) roads are located within this management area.

Management area 6A (livestock grazing) is crossed by approximately 8.0 miles of the proposed route. This management area typically consists of benchlands, valleys, and basins at lower elevations with pinyon-juniper or sagebrush vegetation. The area is managed for livestock grazing. Range condition is maintained through use of forage improvement practices, livestock management, and regulation of other resource activities. Dispersed recreational opportunities vary between semi-primitive non-motorized and roaded natural use.

Throughout the Dixie National Forest, the proposed route would be located immediately adjacent to the existing KRGT pipeline within the designated New Castle to Veyo Utility Corridor. This utility corridor is part of and within the New Castle-Veyo planning window area. Window areas are "critical segments of terrain through which energy transportation and utility rights-of-way could pass in traversing the Forest" (Dixie National Forest LRMP, 1986). As a result, the proposed pipeline is consistent with the intended use of this window area and LRMP; therefore, impacts would be less than significant.

KRGT would gain access to the construction right-of-way within the Dixie National Forest using only existing roads. No new roads would be constructed as part of the Kern River 2003 Expansion Project. However, modifications to three existing roads within the Dixie National Forest would be required, resulting in approximately 27.8 acres of disturbance. Modifications would occur within the original road right-of-way and include reestablishing the preexisting road width, reestablishing the original radius of all curves, regrading curves including passing turnouts, and repairing ruts and cut banks as needed. As a result, a Roads Analysis Process does not need to be conducted for the Kern River 2003 Expansion Project. The delivery of construction equipment and materials would not prevent access to the Dixie National Forest.

The area of the forest crossed by the pipeline route is used for recreation, including OHV use. Construction-induced effects such as traffic, noise, and dust may affect the quality of some users' recreational experiences, but any effects would be temporary in nature. Following construction, KRGT would restore the area to its preconstruction condition. To facilitate restoration after pipeline construction, the FS would issue a forest order prohibiting the use of OHVs in the corridor (Hipp, 2001). KRGT would implement additional mitigation measures to discourage OHV use in environmentally sensitive areas of the forest, such as in management area 5A and the Mountain Meadows area (see below). Additional measures would include placing berms at intersections with existing dirt roads to ensure that the area does not appear to be an access road and randomly placing boulders and trees to discourage OHV use. All roads that are currently closed as prescribed in the Dixie National Forest LRMP Plan would remain closed. Implementation of these measures would reduce impacts associated with the increased potential for OHV use to less than significant levels. OHV use in the project area is described in more detail in section 4.8.6.2.

Potential impacts of construction and operation of the pipeline on surface water, vegetation, wildlife, and visual resources within the Dixie National Forest are discussed in sections 4.3, 4.5, 4.6, and 4.8.7, respectively. Additional site-specific mitigation measures required by the FS would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.

Mountain Meadows Historic Site - Within the Dixie National Forest, the proposed pipeline route would intersect the Mountain Meadows Historic Site on the Fillmore Loop. The site is located along the Old Spanish Trail and California Road, which was a 1,200-mile-long route between Santa Fe and Los Angeles heavily used between 1830 and 1848 by traders, emigrants, and gold seekers. The historic-period site, which is listed on the NRHP, identifies the location of the 1857 Baker-Fancher party massacre.

The site is located within the general Mountain Meadows area, which is considered a visually sensitive area (see section 4.8.7). At the crossing location, the proposed route would be adjacent to the existing KRGT pipeline within the designated Newcastle to Veyo Utility Corridor. KRGT would restore and recontour the construction right-of-way to preconstruction conditions. As a result, impacts would be less than significant.

Nevada

Beaver Dam Slope ACEC - The Beaver Dam Slope ACEC would be crossed between approximately MPs 432.8 and 437.5 and MPs 438.8 and 444.1 of the Veyo Loop. The FLPMA defines an ACEC as an area within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards. Within the BLM-administered Beaver Dam Slope ACEC, special management attention is given to desert tortoise. The proposed pipeline would be located adjacent to the existing KRGT pipeline within a 2,640-foot-wide designated utility corridor for the entire crossing length of this ACEC. As a result, impacts associated with construction through this area would be less than significant. Specific mitigation measures for the desert tortoise and its critical habitat are provided in section 4.7.

Mormon Mesa ACEC - The Mormon Mesa ACEC would be crossed between MPs 444.1 and 444.5 and MPs 446.9 and 455.3 of the Veyo Loop. The Mormon Mesa ACEC is a desert tortoise ACEC managed by the BLM. The proposed pipeline would be located adjacent to the existing KRGT pipeline within a 2,640-foot-wide designated utility corridor for the entire crossing length of this ACEC. As a result, impacts would be less than significant. Specific mitigation measures for the desert tortoise and its critical habitat are provided in section 4.7.

Moapa River Indian Reservation - The Veyo Loop would cross the Moapa River Indian Reservation between MPs 479.2 and 493.8. This reservation was created by executive order on March 12, 1873. Over the last century the size of the reservation has been reduced from the original 2 million acres established in 1873 to the current approximately 72,000-acre site. The reservation was established to enhance the quality of life, promote economic opportunity, carry out the responsibility to protect and improve the trust assets, and promote self-determination of the Moapa Band of Paiutes.

The pipeline route would follow a southwest to northwest path through the reservation adjacent to the existing KRGT pipeline. KRGT would restore all disturbed areas to preconstruction conditions. As a result, impacts would be less than significant.

Fish and Wildlife #3 WSA - The Dry Lake Loop 1 would be adjacent to the eastern boundary of the BLM Fish and Wildlife #3 WSA between MPs 504.3 and 509.4. The eastern boundary of the WSA is defined by the Apex Disposal road. The western boundary of this 22,002-acre area is adjacent to the Desert National Wildlife Refuge. According to the 1991 Nevada BLM Statewide Wilderness Report, none of this WSA was recommended as suitable for inclusion in the National Wilderness Preservation System. The pipeline would remain on the east side of the Apex Disposal road adjacent to the existing KRGT pipeline.

Because the WSA is not crossed by the proposed pipeline facilities, the designated use or purpose of the area would not be affected by pipeline construction. As a result, impacts would be less than significant.

Coyote Springs ACEC - The Dry Lake Loop 1 would be parallel to the boundary of the Coyote Springs ACEC as designated by the BLM between about MPs 507.0 and 509.4. The Coyote Springs ACEC is a 75,500-acre area designated for its critical desert tortoise habitat. Because this area is not crossed by the proposed pipeline facilities, the designated use or purpose of the area would not be affected by pipeline construction. As a result, impacts would be less than significant. Additional discussion of the desert tortoise and its critical habitat is presented in section 4.7.

Nellis AFB - The Dry Lake Loop 1 would cross a total of 3.2 miles of the Nellis AFB in two segments between MPs 509.9 and 512.3 and MPs 514.2 and 515.0. Nellis AFB, a part of the United States Air Force's Air Combat Command, is located on 11,000 acres of land about 8 miles northeast of Las Vegas, Nevada. The AFB provides training for composite strike forces that include every type of aircraft in the United States Air Force inventory (U.S. Air Force, 2001). The area crossed by the pipeline route includes a small arms shooting range. The proposed pipeline would be located adjacent to the existing KRGT pipeline within Nellis AFB.

KRGT would coordinate directly with the AFB before construction to address security and other site-specific issues. During construction, the AFB would temporarily close the small arms shooting range located in the area of the proposed project. All disturbed areas would be restored to preconstruction conditions. Implementation of these measures would reduce impacts to less than significant levels. Additional site-specific mitigation measures required by Nellis AFB would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.

Edsall Training Center - The Dry Lake Loop 1 would be located adjacent to the existing KRGT pipeline across a total of 3.1 miles of the Edsall Training Center in two segments between MPs 513.1 and 514.2 and MPs 515.0 and 515.3. This property is currently in the process of a land transfer from the BLM to the Nevada National Guard as part of the Recreation and Public Purposes (R&PP) Act. The R&PP Act is a process in which land is leased or conveyed to state and local governmental units and agencies, Federal instrumentalities, and nonprofit corporations and associations for recreational and public purposes. Facilities currently located at the training center include an armory and maintenance shop.

The Nevada National Guard raised concerns about restrictions placed along the pipeline right-of-way and the location of ancillary pipeline facilities in relationship to the training center property. As previously discussed, all land used for temporary construction right-of-way and temporary extra workspace would be allowed to revert to prior uses. Construction of aboveground structures would be prohibited on the permanent right-of-way; however, no restrictions would be placed on the temporary right-of-way or extra workspace. A MLV would be constructed at MP 515.4 adjacent to an existing MLV associated with the original KRGT pipeline. The armory and maintenance shop currently located on the property are located about 1 mile from the proposed facilities. As a result, impacts associated with the proposed facilities would be less than significant. Additional site-specific mitigation measures required by the Edsall Training Center would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.

Red Rock HMA - The Dry Lake Loop 2 would cross the Red Rock HMA between approximately MPs 550.2 and 565.2. The Wild Free-Roaming Horse and Burro Act of 1971 directed the BLM to identify and inventory herd areas where these animals were located. Through the BLM's planning process, the areas where horses can be managed as a component of the public land have been designated as HMAs (BLM, 2001c). The Red Rock HMA consists of approximately 220,000 acres characterized as Mojave desert surrounded by high, rocky desert mountains. A large portion of this HMA overlaps with the Red Rock

Canyon NCA (see additional discussion of the NCA below). Section 4.6.1.4 presents specific information on the herd located in this area and the determination that impacts on the HMA would be less than significant.

Red Rock Canyon NCA - The Dry Lake Loop 2 would cross the Red Rock Canyon NCA between approximately MPs 552.0 and 557.4. Red Rock Canyon, formerly Red Rock Canyon Recreation Lands, was designated as a NCA in 1990. In 1994, legislation was passed that expanded the NCA boundaries to the north and south of the original NCA boundaries. The 196,000-acre area is located on the eastern slope of the Spring Mountains approximately 15 miles west of Las Vegas and is administered by the BLM. The 1990 legislation designating this NCA calls for "providing recreation opportunities allowing the public to enjoy and appreciate the unique natural setting that composes Red Rock Canyon, but the primary direction is to conserve and protect these natural resources" (General Management Plan and Final EIS for Red Rock Canyon NCA, 2000). The area has been popular for public recreation because its unique geological and ecological characteristics occur in a natural setting close to a major population center. Recreational activities include camping, rock climbing, hunting, and hiking. The pipeline would cross trails associated with the Cottonwood Valley Trail System that are used for mountain biking, horseback riding, and hiking.

The Red Rock Canyon NCA has been divided into five management emphasis areas (MEA) including developed, roaded developed, roaded natural, non-motorized, and primitive. Each MEA zone has a set of guidelines that both describes its current setting and provides a standard for future management. The proposed pipeline route would cross a non-motorized MEA. The description of a non-motorized MEA is as follows:

- area(s) may not necessarily be remote and access may be easy, but human interaction level would be low;
- opportunities provided could include trails for mountain bikers, horse riders, and hikers;
- existing roads closed and converted to trails, motorized use is prohibited;
- off-site controls preferred; and
- facilities are avoided, but may be provided for resource protection or user safety.

The existing KRGT pipeline was constructed in 1991 and was not located within the boundaries of the original NCA established in 1990. However, a portion of an expansion area added to the NCA in 1994 encompassed the existing KRGT pipeline and would be crossed by the Kern River 2003 Expansion Project. Although reclamation of the existing KRGT pipeline has been relatively successful in this area, the reclamation was not designed to accommodate the natural setting or to enhance the scenic qualities of the area. An alternative route that would avoid the Red Rock Canyon NCA is discussed in section 3.3.4.

The proposed pipeline would be adjacent to the existing KRGT pipeline using a reduced 20-foot offset for the entire crossing of the Red Rock Canyon NCA. The permanent right-of-way for the new pipeline would be placed exactly within the boundary of the permanent right-of-way for the existing KRGT pipeline. KRGT would attempt to minimize disturbance to areas previously disturbed by construction of the existing pipeline. No aboveground facilities associated with the proposed pipeline would be located within the Red Rock Canyon NCA. KRGT would gain access to the construction right-of-way within the Red Rock Canyon NCA using only existing roads. No new roads would be constructed as part of the Kern River 2003 Expansion Project. However, modifications to four existing roads within the Red Rock Canyon NCA would be required, resulting in approximately 2.9 acres of disturbance. The delivery of construction equipment and materials would not prevent access to the Red Rock Canyon NCA. During construction, effects such as

traffic, noise, and dust may affect the quality of some users' recreational experiences, but any effects would be temporary in nature. KRGT would use dust minimization techniques along the construction right-of-way and would remove all litter and debris daily from the construction work site. Following construction, KRGT would return all disturbed areas to their preconstruction condition and implement the mitigation measures identified in section 4.5.2.1. KRGT would reseed the proposed right-of-way using native species and would transplant succulents such as cactus, yucca, and Joshua trees to mitigate for visual impacts associated with the project. These measures would be considered successful if 80 percent of the density and diversity of the adjacent undisturbed vegetation is obtained on the right-of-way. Visual qualities of the Red Rock Canyon NCA would be enhanced by the restoration of KRGT's existing right-of-way when the proposed right-of-way is reclaimed. Restoration of KRGT's existing right-of-way would be accomplished to the same standards as the proposed right-of-way.

Because the proposed route crosses a non-motorized MEA, KRGT would also implement measures to control unauthorized OHV use (see section 4.8.6.2). Implementation of KRGT's proposed mitigation measures would reduce impacts on the Red Rock Canyon NCA to less than significant levels.

Humboldt-Toiyabe National Forest/Spring Mountains NRA - Approximately 0.9 mile of the Dry Lake Loop 2 beginning at about MP 557.4 would cross the Spring Mountains NRA portion of the Humboldt-Toiyabe National Forest. The Spring Mountains NRA covers 315,648 acres and is one of five districts of the Humboldt-Toiyabe National Forest. The area was designated a NRA in August 1993. Recreational activities include camping, rock climbing, and hiking.

Forest-wide standards and guidelines apply to the Spring Mountains NRA. Forest-wide guidelines for special uses include burying all utility lines and locating utilities in existing corridors. In addition to forest-wide standards and guidelines, the Spring Mountains NRA is divided into four management areas (11, 12, 13, and 14). Each management area comprises contiguous lands with similar topography, geology, ecology, public uses, and land and resource issues (GMP for the Spring Mountains NRA, 1993). The proposed pipeline route would cross Management Area 13. The emphasis in Management Area 13 is to provide increased levels of recreation development and service and increased multi-use trails and camp sites at appropriate locations to distribute recreational use throughout the Spring Mountains NRA (GMP for the Spring Mountains NRA, 1993).

The proposed pipeline would be adjacent to the existing KRGT pipeline for the entire 0.9 mile within the Springs Mountains NRA. The permanent right-of-way for the new pipeline would be placed exactly within the boundary of the permanent right-of-way for the existing KRGT pipeline. The existing KRGT pipeline was installed prior to the 1993 designation of this area as a NRA. As a result, the pipeline is considered an existing land use. One of the goals of the Spring Mountains NRA is to "continue current uses in existing locations, where they do not conflict with ecosystem conservation or protection of heritage resources" (GMP for the Spring Mountains NRA, 1993). The proposed pipeline would be consistent with the current use of the area (Ewers, 2001). The Spring Mountains NRA has, however, expressed concern about potential visual, archaeological, and biological impacts associated with the construction of the new pipeline. KRGT would reseed the proposed right-of-way using native species and would transplant succulents such as cactus, yucca, and Joshua trees to mitigate for visual impacts associated with the project. These measures would be considered successful if 80 percent of the density and diversity of the adjacent undisturbed vegetation is obtained on the right-of-way. Visual qualities of the Spring Mountains NRA would be enhanced by the restoration of KRGT's existing right-of-way when the proposed right-of-way is reclaimed. Restoration of KRGT's existing right-of-way would be accomplished to the same standards as the proposed right-of-way. Additional mitigation measures for visual resources are discussed in section 4.8.7. Section 4.10 contains information on cultural resources and the result of archaeological surveys in the area. Potential impacts on biological resources are discussed in sections 4.5, 4.6, and 4.7.

The spread of noxious weeds and controlling OHV use were also identified as concerns. To prevent the spread of noxious weeds in the area, KRGT would clean all equipment prior to entering the Spring Mountains NRA. A more detailed discussion of noxious weeds is provided in section 4.5.4. During construction, KRGT would use only existing roads to access the construction right-of-way. No new roads would be constructed and no modifications to any existing roads would be required in this area. Section 4.8.6.2 describes measures KRGT would implement to control unauthorized OHV use. Implementation of these measures would reduce impacts to less than significant levels. Additional site-specific mitigation measures required by the FS would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.

California

CDCA - The entire 186.2-mile-long portion of the proposed pipeline route in California (part of the Goodsprings Loop and all of the Daggett Loop) is within the CDCA. The CDCA is a 25-million acre area located in southeastern California. Over 12 million acres are managed by the BLM. Of the 186.2 miles of the proposed route in California, about 105.9 miles are managed by the BLM. Pursuant to the FLPMA, the BLM prepared a comprehensive land use management plan for the area (the CDCA Plan) in 1980. The intent of the CDCA Plan is to "...provide for the immediate and future protection and administration of the public lands in the California Desert within the framework of a program of multiple-use and sustained yield, and the maintenance of environmental quality" (BLM, 1980 (as amended)).

Under the Energy Production and Utility Corridors Element of the CDCA Plan, 16 planning corridors were identified to address utility facilities, including all pipelines with diameters greater than 12 inches (BLM, 1980 (as amended)). All 186.2 miles of the proposed route within the CDCA are located within designated Utility Corridors D and G. Utility Corridors D and G are 2-mile-wide corridors that run east-west through the southeastern portion of California. The proposed Goodsprings Loop is located within Utility Corridor D for its entire 104.0 miles in California. The entire 82.2 miles of the proposed Daggett Loop are within Utility Corridor G.

As discussed in section 1.5.1, the Kern River 2003 Expansion Project is consistent with the management objectives of the CDCA Plan. As a result, impacts associated with the project in the CDCA would be less than significant.

Clark Mountain HMA - The Goodsprings Loop would cross the Clark Mountain HMA between MPs 579.4 and 603.7. The Clark Mountain HMA consists of approximately 173,100 acres that range from high mountains to low dry lake and valley regions. This HMA is a medium-priority management area. The pipeline is located within designated Utility Corridor D for its entire crossing length within the Clark Mountain HMA. The pipeline would be adjacent to the existing KRGT pipeline except where it deviates to avoid the Mojave National Preserve. Around the Mojave National Preserve, the pipeline would be adjacent to several existing powerlines within Utility Corridor D. Because the pipeline would be located within a designated utility corridor, it would be consistent with the designated use of the area and impacts would be less than significant. Section 4.6.1.4 presents information on the herd of burro located in this area.

Wilderness Areas - The Goodsprings Loop would be constructed about 1 mile south of the Stateline (between MPs 580.0 and 584.5), Mesquite (between MPs 584.5 and 598.0), and Kingston Range (between MPs 598.0 and 614.0) Wilderness Areas. The Hollow Hills Wilderness Area is located about 0.25 mile south of the route between MPs 618.0 and 623.6. The pipeline route is located adjacent to three existing powerlines within designated Utility Corridor D throughout this entire area.

The 1964 Wilderness Act defines wilderness primarily as areas "where the earth and its community of life" are unrestrained by human activity; further, they are areas having outstanding opportunities for

solitude or a primitive and unconfined type of recreation; areas at least 5,000 acres or large enough to preserve use as wilderness; and areas containing ecological, geological, or other features of scientific, scenic, or historical value. According to the 1964 Wilderness Act, there shall be no commercial enterprise, no permanent road (except as necessary to meet minimum requirements for the administration of the area), no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

Because these wilderness areas are not crossed by the proposed pipeline route, the designated use or purpose of the areas would not be directly affected by pipeline construction. In addition, the pipeline would be consistent with the designated use of Utility Corridor D. However, due to the close proximity, the areas may be indirectly affected by traffic, noise, and dust during pipeline construction. Any effects would be short term and temporary in nature. The delivery of construction equipment and materials would not prevent access to any of these areas. KRGT would use the existing powerline access road as the primary access to the construction right-of-way in this area. The pipeline would cross several trails/roads during construction adjacent to these wilderness areas. To maintain access to these wilderness areas during construction, KRGT would only allow one trail/road crossing to be closed at any given time. Each trail/road would be open cut and out of service for a maximum of 1 day. KRGT would implement the measures described in section 4.8.5 to maintain safe passage at each of the trail/road crossings. Implementation of these measures would reduce impacts to less than significant levels.

Mojave National Preserve - The existing KRGT pipeline right-of-way is located within the boundaries of the Mojave National Preserve for about 1.8 miles beginning at MP 590.4. At this location, the existing pipeline is south of four existing powerlines and just inside of the northern boundary of the preserve. This area was designated a national preserve and placed under the jurisdiction of the NPS in October 1994 after the installation of the existing KRGT pipeline. The preserve encompasses 1.6 million acres in the center of the Mojave Desert and was designated to protect the rare and unique environments within the desert. In response to a request from NPS staff, KRGT routed the proposed pipeline to the opposite, or north side, of the existing powerlines within designated Utility Corridor D. As a result, the proposed Goodsprings Loop would be outside the boundaries of the Mojave National Preserve.

The NPS, Mojave National Preserve, has commented on the need to maintain access to the preserve during construction for recreationists and to allow preserve personnel to conduct field monitoring activities. The proposed alignment of the Goodsprings Loop along the north side of the existing powerline corridor would cross five existing unimproved roads, including the service road extending along the powerline corridor. Four of these roads extend south into the preserve and are used by the public and preserve personnel to access the preserve. During construction, KRGT would close only one road at a time leaving at least three roads open at any given time. The main access to the preserve is provided by Kingston Road and other improved or major public roads. KRGT would maintain safe passage at each of these road crossings as described in section 4.8.5. Implementation of these measures would reduce impacts to less than significant levels.

Clark Mountain ACEC - The Goodsprings Loop would be located within the BLM-designated Clark Mountain ACEC between about MPs 587.5 and 591.7. As previously discussed, the FLPMA defines an ACEC as an area within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards. According to the CDCA Plan, the ACEC designation is a process for determining what special management certain important environmental resources or hazards require. The Clark Mountain ACEC was designated to protect prehistoric and historic values, wildlife habitat, and outstanding scenery (BLM, 1980).

The majority of the ACEC was incorporated into the Mojave National Preserve when the preserve was designated in 1994. As discussed above, the proposed pipeline deviates from the existing KRGT pipeline in this area to avoid crossing the Mojave National Preserve. In avoiding the Mojave National Preserve, the pipeline route would cross the remaining portion of the ACEC located outside of the boundaries of the preserve. However, the proposed pipeline would be located within designated Utility Corridor D as it crosses the ACEC and would be consistent with the intended use of this corridor. As a result, impacts would be less than significant. Special status species occurring in the area and KRGT's proposed mitigation measures are discussed in section 4.7.

Soda Mountains and South Avawatz WSAs - The Goodsprings Loop would be adjacent to two statutory WSAs as defined in the California Desert Protection Act of 1994. These are the Soda Mountains WSA and the South Avawatz WSA. The Soda Mountains WSA is south of the proposed route between MPs 624.0 and 652.4. The northern boundary of the Soda Mountains WSA is defined as 0.25 mile south of the southernmost powerline within designated Utility Corridor D (Roholt, 2001). For the majority of the route in this area, the proposed pipeline would be adjacent to the existing KRGT pipeline and a minimum of 300 feet north of the northernmost powerline within the utility corridor. In these areas, the proposed route would be about 0.4 mile north of the Soda Mountains WSA boundary. However, between MPs 637.0 and 638.0, the proposed pipeline would deviate from the existing pipeline and crossover to the south of the existing powerlines to avoid rocky, mountain terrain and severe side slopes. In this area, the pipeline route would be located a maximum of 750 feet south of the southernmost powerline and about 0.1 mile north of the boundary of the Soda Mountains WSA. The pipeline route then crosses back over to the north of the powerlines.

The South Avawatz WSA is north of the proposed pipeline route between MPs 627.8 and 639.2. The southern boundary of this WSA is defined as 0.5 mile north of the northernmost powerline within designated Utility Corridor D (Roholt, 2001). With the exception of the segment between MPs 637.0 and 638.0, the proposed route in this area is about 300 feet north of the northernmost powerline within the utility corridor. This alignment would put the route about 0.4 mile south of the South Avawatz WSA boundary. Between MPS 637.0 and 638.0 where the alignment is south of the existing powerlines, the pipeline would be about 0.8 mile south of the South Avawatz WSA boundary.

Because these WSAs are not crossed by the proposed pipeline routes, the designated use or purpose of the areas would not be directly affected by pipeline construction. In addition, the pipeline would be consistent with the designated use of Utility Corridor D. However, due to the close proximity, the areas may be indirectly affected by traffic, noise, and dust during pipeline construction. Any effects would be short term and temporary in nature. The delivery of construction equipment and materials would not prevent access to any of these public interest areas. KRGT would use the existing powerline access road as the primary access to the construction right-of-way in this area. The pipeline would cross several trails/roads during construction adjacent to these WSAs. To maintain access to these WSAs during construction, KRGT would only allow one trail/road crossing to be closed at any given time. Each trail/road would be open cut and out of service for a maximum of 1 day. KRGT would implement the measures described in section 4.8.5 to maintain safe passage at each of the trail/road crossings. Implementation of these measures would reduce impacts to less than significant levels.

Fort Irwin National Training Center (NTC) - The Goodsprings Loop would be within the current boundary of the Fort Irwin NTC between MPs 642.8 and 643.0 and would be close to or adjacent to the boundary until about MP 653.2. Fort Irwin was designated in 1981 as the Army's NTC with the mission "to train brigades in tough, realistic battlefield scenarios to meet the needs of tomorrow's army" (U.S. Department of Army, 2001). The Fort Irwin NTC currently covers more than 642,000 acres of the Mojave Desert. There are plans underway to expand the NTC by about 132,000 acres in three parcels. The first parcel is located southwest of the NTC and contains about 64,000 acres. The second parcel includes about

46,000 acres directly east of and contiguous with the NTC. The southern boundary of this parcel would be CDCA-designated Utility Corridor D (Boulder Power Corridor). The proposed Goodsprings Loop would be within or adjacent to this parcel between about MPs 627.0 and 642.8. The remaining 22,000 acres are currently set aside on the NTC and would be returned to training use.

The entire portion of the proposed route in this area would be immediately adjacent to the existing KRGT pipeline within designated Utility Corridor D. Because the pipeline would be consistent with the designated use of the utility corridor, impacts would be less than significant. Special status species occurring in the area and KRGT's proposed mitigation measures are discussed in section 4.7. Additional site-specific mitigation measures required by Fort Irwin would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.

Marine Corps Firing Range - About 3.1 miles of the Marine Corps Firing Range would be crossed by the Daggett Loop between MPs 3.7 and 6.8. The facility includes a pistol/rifle firing range south of the proposed right-of-way. The area crossed includes desert tortoise habitat, but no other sensitive wildlife or plant communities have been identified (see section 4.7). As construction approaches the Marine Corps Firing Range, KRGT would coordinate with the Military Police, Ranger Officer, and the Environmental Division concerning security, access, live fire range safety, and special status species protections. Implementation of this measure would reduce impacts to less than significant levels. Additional site-specific mitigation measures required by the Marine Corps would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.

Edwards AFB - The Daggett Loop would be within the boundaries of Edwards AFB in two locations (between MPs 41.0 and 42.5 and MPs 51.2 and 51.4) and would be north of the AFB boundary between MPs 42.5 and 67.8. No aboveground facilities would be located within the AFB. An alternative route located mostly within the AFB is discussed in section 3.3.6. Edwards AFB covers 301,000 acres and is home of the Air Force Flight Test Center, NASA Dryden Flight Research Center, and the Air Force Research Laboratory.

During the scoping process, Edwards AFB identified several items that KRGT would need to implement both before and during construction within the AFB. KRGT would need to:

- arrange a preconstruction conference at least 30 days prior to the start of construction on Edwards AFB lands;
- coordinate with base personnel before beginning any activities within the base;
- register all personnel and vehicles operating in conjunction with the project with base security before entering base lands;
- coordinate ingress and egress routes to the construction site with base security; and
- before excavation, clear all areas where the possibility of encountering ordnance associated with past test and training activities exists using qualified ordnance disposal personnel and in consultation with Edwards AFB personnel.

Implementation of these identified measures would reduce impacts to less than significant levels. Additional site-specific mitigation measures required by Edwards AFB would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant. Edwards AFB also raised safety concerns related to the proximity of the proposed facilities to flight paths and an existing railroad track and potential hazards during emergency flight/landing procedures. These concerns are addressed in section 4.12.3.

4.8.6.2 General Recreation

West Valley City, Utah commented during the scoping process about KRGT's participation in the development of a trail system proposed by the city. The proposed Salt Lake Loop is located within the boundaries of West Valley City for about 4.1 miles between approximately MPs 135.5 and 139.6. KRGT's participation in the city's proposed trail system would be negotiated between KRGT and West Valley City during the easement and/or permit acquisition process.

Other general recreation uses occurring along the pipeline route include OHV use and camping as described below.

Off-Highway Vehicle Use

OHV use occurs throughout various portions of the project area, peaking during the winter months along the southern portion of the project and the summer months along the northern portion of the project. Lands managed by the BLM are classified as open; limited to existing roads, trails, and dry washes; limited to designated roads and trails; and closed to OHV use. The FS also stipulates OHV use on its lands. A summary of the OHV use designations on BLM and FS lands for the proposed project is provided in table 4.8.6-2 (page 4-198).

The pipeline right-of-way could increase accessibility for OHV use into previously restricted, inaccessible, or environmentally sensitive areas. KRGT would discourage OHV use on its new or existing rights-of-way due to safety considerations and the need to maintain erosion control, promote continued restoration and revegetation success, and protect biological and cultural resources unless the OHV use is specifically designated or authorized by the landowner or land management agency. The measures KRGT has used in the planning and design of the project or would use to control unauthorized or undesired OHV use include:

- siting the new pipeline loops typically overlapping the existing KRGT or KRGT/Mojave Common System rights-of-way as opposed to creating entirely new rights-of-way that could introduce more third-party OHV use;
- using existing access roads to the right-of-way during construction and operation rather than constructing new roads. KRGT would maintain existing access controls such as replacement of gates and earthen berms where specified;
- restoring the construction and permanent right-of-way to or near the original contours, including restoring streams and washes, removing temporary equipment bridges, installing slope breakers for erosion control, and revegetation; and
- installing other OHV controls (*e.g.,* signs, fences, berms, breaches, boulders, shrubs, trees) where designated by a land management agency to further meet management objectives for OHV use (see section 4.5.2.1 and KRGT's UECRM Plan in appendix E).

TABLE 4.8.6-2

Off-Highway Vehicle Use Designations on BLM and FS Lands Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	County	Milepost Segments Containing BLM or FS Lands a/	Ownership	Off-Highway Vehicle (OHV) Use Designation
WYOMING				
Opal Loop	Lincoln	0.0-6.0	BLM	Limited to existing roads, trails, and dry washes.
Muddy Creek Loop		0.30-13.3	BLM	Limited to existing roads, trails, and dry washes.
	Uinta	18.4-51.4	BLM	Limited to existing roads, trails, and dry washes.
UTAH				
Salt Lake Loop	Utah	157.9-158.2	BLM	Open.
		160.4-165.3	BLM	Open.
Elberta Loop		199.4-200.8	BLM	Open.
	Juab	203.9-231.2	BLM	Open.
	Millard	238.7-274.5	BLM	Open.
Fillmore Loop		277.0-298.0	BLM	Open.
		298.0-301.6	BLM	Open.
	Beaver	301.6-335.4	BLM	Open.
	Iron	336.6-383.0	BLM	Open.
		382.5-382.9 384.6-384.7	FS (Dixie National Forest)	L1: Limited Area. Uses are limited to routes shown on the Dixie National Forest Travel Map. This map is the product of a forest order that limits uses in the area of the proposed pipeline. Vehicle uses (*i.e.*, cars, trucks, OHVs) are permitted along existing trails and roads only, and not off of these trails and roads.
	Washington	384.7-404.1	FS (Dixie National Forest)	L1: Limited Area. Uses are limited to routes shown on the Dixie National Forest Travel Map. This map is the product of a forest order that limits uses in the area of the proposed pipeline. Vehicle uses (*i.e.*, cars, trucks, OHVs) are permitted along existing trails and roads only, and not off of these trails and roads.
Veyo Loop		406.5-415.5	BLM	Open.
		416.9-425.0	BLM	Limited to existing roads, trails, and dry washes.
		425.0-430.8	BLM	Limited to designated roads and trails.
NEVADA				
Veyo Loop	Lincoln	432.8-455.4	BLM	Limited to designated roads and trails.
	Clark	455.4-465.0	BLM	Limited to designated roads and trails.
		465.0-500.1	BLM	Limited to existing roads, trails, and dry washes. Lands within the Moapa River Indian Reservation are not designated.

TABLE 4.8.6-2 (cont'd)

Off-Highway Vehicle Use Designations on BLM and FS Lands Crossed by the Kern River 2003 Expansion Project Pipeline Route

State/Facility	County	Milepost Segments Containing BLM or FS Lands a/	Ownership	Off-Highway Vehicle (OHV) Use Designation
Dry Lake Loop 1		500.1-517.5	BLM	All lands crossed are designated as limited to existing roads, trails, and dry washes, except for those lands within the Nellis Air Force Base, which are not designated and are assumed to be closed to non-authorized personnel vehicles and OHVs.
Dry Lake Loop 2		543.6-552.0	BLM	Limited to existing roads, trails, and dry washes.
		552.0-557.4	BLM	Limited to designated roads and trails. Red Rock Canyon National Conservation Area.
		557.4-558.3	FS (Humboldt-Toiyabe National Forest)	Not designated by individual class. Designated by suitability for recreation. The area is designated as suitable for recreational development.
		558.3-565.8	BLM	Limited to existing roads, trails, and dry washes.
Goodsprings Loop		565.8-579.4	BLM	Limited to existing roads, trails, and dry washes.
CALIFORNIA				
Goodsprings Loop	San Bernardino	579.4-680.7	BLM	Limited to approved routes of travel. Fort Irwin National Training Center lands are assumed to be closed to non-authorized personnel vehicles and OHVs. The area between MPs 665.0 and 680.0 is mainly built-up (not designated), with sporadic areas of open designations.
Daggett Loop		0.4-41.1	BLM	Lands are classified as limited to existing routes of travel, except the Marine Corps Firing Range and Edwards Air Force Base, which are assumed to be closed to non-authorized personnel vehicles and OHVs.
	Kern	82.0-82.4	BLM	No designation.

a/ Includes interspersed state, local, and private lands that do not have an OHV use designation.

Sources: Las Vegas Resource Management Plan, 1998; St. George Approved Resource Management Plan, 1999; Pony Express Resource Management Plan, 1990; House Range Resource Area, 1987; Cedar Beaver Garfield Antimony Resource Management Area, 1984; Warm Springs Resource Management Area, 1986; and the California Desert Conservation Area Plan, 1999.

Additionally, KRGT has identified specific measures that would be implemented in the Dixie National Forest to control OHV use. These measures include placing berms at intersections with existing dirt roads to ensure that the area does not appear to be an access road and randomly placing boulders and trees to discourage OHV use. The FS would issue a forest order prohibiting the use of OHVs along the right-of-way to facilitate restoration after construction.

Implementation of these measures would reduce the potential impacts associated with unauthorized OHV use of the right-of-way to less than significant levels.

Camping

Camping is a popular activity in the areas crossed by the proposed pipeline route. Both formal and informal camp sites occur at various locations along or near the proposed right-of-way. Camping is most common along the northern portion of the route during the summer months and along the southern portion of the route during the cooler winter months.

Camping is permitted in the Dixie National Forest, Spring Mountains NRA, and Red Rock Canyon NCA. In addition, the Coyote Creek Loop 1 would be near a RV park at about MP 87.5. The RV park is located west of Interstate 80 along the Weber River. The proposed route would be about 300 feet south of the park. A campground is also located within 0.25 mile of the Elberta Loop in Juab County, Utah.

Construction-induced effects such as traffic, noise, and dust may affect the quality of some users' recreational experiences, but any effects would be temporary in nature. The delivery of construction equipment and materials would not prevent access to these areas. As a result, impacts would be less than significant. A discussion of campgrounds in the project area and their use by construction workers is presented in section 4.9.3.

4.8.7 Visual Resources

Construction of the pipeline would cause construction-related visual impacts. Visual impacts would be caused by vegetation removal, earthwork and grading scars, staging areas, heavy equipment tracks, trenching, blasting, rock formation alteration or removal, and temporary support machinery and tool storage. The degree of impacts from vegetation clearing would depend on the type of vegetation that would be affected. In annual grasslands and agricultural croplands, restoration of the vegetation may occur within three growing seasons, which would limit the visual impact to a short time. Where the pipeline would cross shrub vegetation, forested, or desert areas, the visual impact may persist for many years. Landform and vegetation changes would introduce contrasts in visual scale; spatial characteristics; and form, line, color, and texture. Where the pipeline is constructed along an existing right-of-way (99 percent of the route) the impacts of construction would be less severe.

During operation and maintenance, the pipeline right-of-way would be periodically cleared of vegetation that is hazardous to ongoing pipeline operation. This periodic clearing of the right-of-way would create the greatest visual impacts in the forested areas of the proposed route. In nonforested areas, the pipeline would not be noticeable to the casual observer once vegetation was restored to its original condition. The new compressor stations, pig launcher/receivers, MLVs, and pipeline markers would be permanent introductions to the landscape. The powerlines to each of the new compressor stations would increase manipulation of the landscape character. New structures on the landscape would affect spatial characteristics and form, line, color, and texture.

Unless an approved RMP is in effect, the BLM uses a VRM system to identify and manage scenic values on Federal lands. The VRM system includes a visual resource inventory, which classifies resources

on BLM land in one of four categories: class I, II, III, or IV, with class I having the highest visual sensitivity and class IV being the least sensitive. Of the 326.6 miles of BLM-administered lands crossed by the project, the proposed pipeline route crosses 47.3 miles in VRM class II, 111.0 miles in VRM class III, and 102.3 miles in VRM class IV. The remaining 66.0 miles are unclassified. The degree of modification allowed to the basic elements of the landscape in these classes includes:

- class II: modification should not be evident in the landscape. Contrasts are seen, but should not attract attention of the casual observer;
- class III: modifications are evident, but should remain subordinate to the existing landscape; and
- class IV: modifications may dominate the view and be the focus of viewer attention, every effort should be made to minimize the impact of these activities.

Of the 326.6 miles of BLM-administered lands crossed by the Kern River 2003 Expansion Project, 105.9 miles are within the BLM's CDD. CDD lands are subject to the CDCA Plan, the functional equivalent of a BLM RMP. As a result, CDD scenic resources are subject to management provisions of the CDD's MUCs. BLM lands crossed by the project within the CDD are assigned MUCs L (Limited) and M (Moderate). Within MUCs L and M, new transmission facilities are only allowed within designated corridors (BLM, 1980 (as amended)). As previously discussed, the proposed pipeline would be located entirely within designated Utility Corridors D and G and is in conformance with the management objectives of the CDCA Plan (see sections 1.5.1 and 4.8.6.1).

The FS also uses a VRM system to inventory, classify, and manage lands for visual resource values. Based on an inventory and evaluation of visual resources associated with national forest lands, Visual Quality Objectives (VQO) are established to provide a measurable standard or objective form for management of visual resources. VQOs indicate the degree of alteration of the landscape that is acceptable and classify land in one of five categories: preservation, retention, partial retention, modification, or maximum modification. Of the 18.1 miles of FS-administered lands crossed by the project, the proposed pipeline route crosses 6.0 miles of partial retention and 12.1 miles of modification. The degree of modification allowed to the basic elements of the landscape in these classes includes:

- partial retention: modifications should remain visually subordinate to the characteristic landscape; and
- modification: modifications may visually dominate the original characteristic landscape.

There are two types of potential impact on visual resources associated with construction and operation of the facilities: that resulting from alteration of terrain and vegetation patterns due to pipeline facility construction or right-of-way maintenance, and that resulting from the presence of the new aboveground facilities.

4.8.7.1 Pipeline Facilities

Wyoming

Opal Loop - The Opal Loop would connect the natural gas facilities at Opal with the Muddy Creek Compressor Station. The loop would cross a large valley and the Hams Fork River, which is a tributary to Muddy Creek. The valley contains several farms and ranches where grazing and agriculture are the primary land uses. Houses are scattered throughout the valley, and the small town of Opal is located near the loop.

The end of the loop is characterized by hilly terrain and sparse vegetation. The 2.0 miles of BLM lands crossed by the loop have a VRM classification of IV.

Muddy Creek Loop - The Muddy Creek Loop is characterized by open terrain dominated by rangeland. The topography is generally flat with mixed grassland and sagebrush scrub vegetation. Small mountains, hogsbacks, hills, and valleys also occur along the loop. The soil is highly erodible so most perennial streams meander extensively through flat valleys creating large oxbows. This loop would also cross the Bear River Valley between MPs 47.0 and 50.3. The Bear River Valley, located along Highway 150 about 5 miles west of Evanston, is an area of high visual quality. The Bear River is located at the north end of the valley floor. An area approximately 25 to 50 feet north and south of the river banks is riparian habitat consisting of tall cottonwood trees and willows. The rest of the valley between the Bear River and Highway 150 is irrigated pastureland. Lands managed by the BLM within the Bear River Valley have a VRM classification of II (0.9 mile). The remaining lands within this loop that are managed by the BLM have a VRM classification of IV (19.2 miles).

Anschutz Lateral - The Anschutz Lateral would be adjacent to the first 0.8 mile of the Coyote Creek Loop 1. This area is characterized by hills with a vegetative cover of mixed grassland and sagebrush scrub. Lands crossed by this lateral are not managed by the BLM or FS and do not have a VRM or VQO classification.

Coyote Creek Loop 1 - About 2.9 miles of the Coyote Creek Loop 1 would be in Wyoming. The topography is hilly with a vegetative cover of mixed grassland and sagebrush scrub. Lands within the Wyoming portion of the loop are not managed by the BLM or FS and do not have a VRM or VQO classification.

Utah

Coyote Creek Loop 1 - In Utah, the Coyote Creek Loop 1 would cross areas with buttes, hills, and valleys. As a result of highly erodible soils in the area, many perennial streams meander through the valleys and create small- to medium-sized oxbows. Sheep and cattle ranching are the predominant uses of the land in the area. Housing is sparse and many of the ranches are large. The vegetative cover consists of mixed grassland and sagebrush scrub. Lands within the Utah portion of the loop are not managed by the BLM or FS and do not have a VRM or VQO classification.

Coyote Creek Loop 2 - The Coyote Creek Loop 2 would be located in the northeastern area of the Salt Lake Valley. The Salt Lake Valley is characterized by open, flat land containing several marshes, canals, and wetlands. Several meadows are dominated by saltgrass and picklewood. Lands crossed by this loop are not managed by the BLM or FS and do not have a VRM or VQO classification.

Salt Lake Loop - The northern segment of the Salt Lake Loop is characterized by a large, open valley containing several marshes, canals, and wetlands. Saltgrass meadows are common in the area. The Great Salt Lake, located to the west of the loop, is a prominent feature in the area. The middle segment of the loop contains large housing and commercial developments in the Salt Lake City area. The southern segment of the loop is characterized by rolling hills with Utah juniper, shadscale, fourwing saltbush, rubber rabbitbrush, and short-statured gambel oak. The 0.9 mile of BLM land along this loop is classified as VRM class IV.

Elberta Loop - The northern end of the Elberta Loop is characterized by rolling hills and sparse to medium density vegetation cover. Vegetation at the lower elevations is dominated by sagebrush, Utah juniper, shadscale, fourwing saltbush, rubber rabbitbrush, and short-statured gambel oak. The primary land use in the area is cattle grazing and agricultural uses. The construction right-of-way would be visible from Interstate 15 in the Scipio Pass area. Lands within this loop managed by the BLM have VRM classifications of III (4.2 miles) and IV (12.7 miles).

Fillmore Loop - The Fillmore Loop is characterized by rolling hills. Vegetation coverage varies from sparse to well covered, with lower elevations dominated by sagebrush and cheatgrass. The southern end of this loop would pass through the Dixie National Forest. This area contains low narrow valleys and east-west trending hills with steep sides composed of loose rock and conglomerates. Elevation gains between hills and valleys can range from 500 to 1,000 feet. Vegetation is predominantly juniper trees, sagebrush, and cheatgrass. Elevation varies from 4,200 to 6,200 feet throughout the loop. BLM lands crossed on the northern portion of this loop have VRM classifications of III (24.7 miles) and IV (40.2 miles). The majority of FS lands crossed within the Dixie National Forest have a VQO classification of modification. The Mountain Meadows area, however, has a VQO classification of partial retention.

Veyo Loop - The northernmost end of the Veyo Loop in Utah begins near the southern end of the Dixie National Forest and contains a visual landscape similar to that described for the southern end of the Fillmore Loop. Vegetation is predominantly juniper trees, sagebrush, and cheatgrass. The southern segment of this loop passes through the Beaver Dam Wash area and crosses into Nevada. BLM VRM class III lands would be crossed by the Utah portion of the Veyo Loop (14.7 miles).

Nevada

Veyo Loop - Vegetation along the Nevada portion of the Veyo Loop consists of Joshua trees, sagebrush, and blackbrush. The area contains low narrow valleys and east-west trending hills with steep sides composed of loose rock. Vegetation cover at the end of the loop is largely represented by creosote bush, saltbush species, and diverse cactus and yucca species. BLM lands crossed by the Nevada portion of this loop have VRM classifications of III (29.6 miles) and IV (22.5 miles).

Dry Lake Loop 1 - The Dry Lake Loop 1 is characterized by vast relatively flat plains with one isolated low mountainous area located toward the middle of the loop. Elevation ranges from 2,030 to 2,700 feet. Vegetation is sparse with expanses of bare ground between individual plants. Cacti and thorny shrubs are conspicuous but many thornless shrubs and herbs are also present. Vegetation along this loop consists of creosote bush, sagebrush, and various saltbush species. The 14.3 miles of BLM lands crossed by this loop are classified as VRM class III.

Dry Lake Loop 2 - Rolling plains characterize the Dry Lake Loop 2. Low mountains and moderately steep to gentle sloping alluvial fans are frequently crossed by the pipeline route. Elevation ranges from 3,000 feet to 4,400 feet. Vegetation is sparse with expanses of bare ground between individual plants. Cacti and thorny shrubs are conspicuous but many thornless shrubs and herbs are also present. Vegetation consists of creosote bush, sagebrush, various saltbush species, Joshua trees, and yucca species. This loop would cross the BLM-administered Red Rock HMA and Red Rock Canyon NCA. A portion of the lands within the Red Rock HMA and Red Rock Canyon NCA have a VRM designation of class II (7.6 miles). All other BLM lands crossed by this loop have VRM designations of class III (8.9 miles) or IV (4.8 miles). The 0.9 mile of FS land crossed associated with the Spring Mountains NRA has a VQO classification of modification.

Goodsprings Loop - The Goodsprings Loop is entirely in the Mojave Desert. The Nevada portion of this loop is characterized by wide open creosote bush scrub areas of bajada slopes, dry lakebeds, and barren mountains. At the Nevada/California state line, the route would cross directly north of the Ivanpah lakebed on a creosote-dominated bajada slope. The 13.5 miles of BLM lands crossed by the Nevada portion of the Goodsprings Loop have a VRM designation of class III.

California

Goodsprings Loop - The California portion of this loop is characterized as wide open, desert habitat with terrain ranging from flat dry lakebeds, rolling hills, and bajada slopes to jagged mountains with rocky peaks. After crossing into California, the pipeline route would cross the Clark Mountains north of the

Mojave National Preserve. Vegetative cover in the Clark Mountain area consists of creosote bush, diverse cactus, and yucca species, as well as a wide variety of perennial flowers. There are numerous large bajada slopes dropping down from the mountains and hills into dry lakebeds. The western end of the loop from Highway 127 to Barstow is a combination of flat, barren dry lakebeds, and rolling hills. The vegetation consists primarily of creosote bush scrub. There are few houses in the area, and the only green agricultural fields are located about 2 miles east of the end of the loop. BLM lands crossed by the California portion of this loop are within a designated utility corridor with the surrounding areas having VRM classifications of II (38.8 miles) and III (1.1 miles) or are unclassified (42.5 miles).

Daggett Loop - Low, rolling hills are found between MPs 3.7 and 7.0 of the Daggett Loop. Broad, flat plains characterize the remainder of the loop. Elevation ranges from 2,100 to 3,060 feet. Vegetation is sparse with expanses of bare ground between individual plants and is largely represented by creosote bush and various saltbush species. The 23.5 miles of BLM lands crossed are within a designated utility corridor and are unclassified.

General Mitigation

The visual impact of the pipeline loops would be primarily temporary or short term because most of the proposed route would be constructed adjacent to the existing KRGT pipeline or KRGT/Mojave Common System pipeline rights-of-way. Where the proposed route is adjacent to existing rights-of-way, project construction would temporarily redefine the existing line and result in an incremental increase of visual impact of the previously disturbed area. To further minimize visual impacts, KRGT would implement general mitigation measures as described below.

- The new pipeline loops would typically overlap existing pipeline rights-of-way, thereby minimizing the amount of clearing needed for construction workspace and permanent right-of-way. Parallel placement of the loops with existing rights-of-way would also minimize visual impacts by minimizing vegetation fragmentation.

- As few landings and turnouts as possible would be created, and these areas of temporary extra workspace would not be located on the noses of ridges or exposed slopes.

- Felled trees would be left as close as possible to the downhill side of the right-of-way.

- Grading during restoration would be done in a manner that minimizes erosion and conforms to the natural topography.

- Soils and rock that are excavated, but not used to backfill the trench or restore contours, would be evenly spread onto the cleared area in non-agricultural areas.

- In areas where blasting is required (see section 4.1.1), native soils and materials would be used to reclaim the construction right-of-way. Any rock introduced into the surface soil that is visually incompatible with the surrounding areas would be buried on the right-of-way or hauled to an approved disposal site. Site-specific measures, as specified by a land management agency, would also be implemented. These measures could include the use of native soils, vegetation, and materials to recreate preconstruction conditions, application of a coloration product such as Permeon™ where natural "desert varnish" has been removed, or rebuilding rim-rock disturbed during construction.

- The permanent pipeline right-of-way markers would adhere to the color coding scheme for buried utilities developed by the American Public Works Association. The color coding scheme calls for yellow markers for natural gas, oil, steam, petroleum, or other gaseous

material pipelines. KRGT's existing pipeline is identified by yellow markers, and similar markers would be used for the proposed pipeline. In accordance with DOT requirements, KRGT would install pipeline markers wherever necessary to identify the location of the pipeline in order to reduce the possibility of damage.

These measures would reduce most impacts on visual resources to less than significant levels and would result in the project being in conformance with applicable BLM or FS VRM classifications. Site-specific impacts on visually sensitive areas and additional site-specific mitigation measures are discussed below.

4.8.7.2 Visually Sensitive Areas

Areas along the pipeline route were analyzed for visual sensitivity. The factors considered in determining the level of visual sensitivity included the presence of one or more critical viewpoints, visual designation on Federal lands, location within a designated utility corridor, duration of viewshed, and distance of the pipeline to the viewshed. A summary of the visual analysis is presented in table 4.8.7-1 (page 4-206).

Site-Specific Mitigation

Impacts on visually sensitive areas would be mitigated in accordance with the general mitigation measures described in section 4.8.7.1 and KRGT's site-specific Reclamation Plans (see section 4.5.2.1), which were developed in consultation with applicable land management agencies. In addition, KRGT would implement site-specific mitigation measures for areas with high visual sensitivity as described below.

Bear River Valley (MPs 46.9 to 50.3) - The proposed Muddy Creek Loop in this area would be adjacent to the existing KRGT pipeline. There are several other pipelines that also cross this valley, including the Questar Pipeline Company and Northwest pipelines. The proposed right-of-way would enter the valley down a steep mountain slope along another visible right-of-way. Although not a forested landscape, KRGT proposes to use feathering and tapering and enhanced revegetation. Feathering and tapering would involve varying the width of the cleared right-of-way to reduce visual line contrasts of distorted areas in visually prominent foreground views, such as at the crossing of Highway 150 at MP 49.3. KRGT would also use enhanced revegetation on portions of the west-facing slopes of the Bear River Valley. Enhanced revegetation includes revegetating the cleared areas with native plants (*e.g.*, sagebrush) to match the surrounding vegetation. In addition, KRGT's use of the HDD construction method to cross the Bear River at MP 47.5 would minimize impacts on visual resources by eliminating disturbance of the riparian corridor adjacent to the river. Implementation of these site-specific mitigation measures would reduce impacts on visual resources in this area to less than significant levels.

Scipio Pass (MPs 244.0 to 248.0) - Portions of the Elberta Loop would be adjacent to Interstate 15 as it crosses the Canyon Mountains at Scipio Pass. The proposed right-of-way would be visible to travelers on Interstate 15 in this area. KRGT would minimize visual impacts in this area by feathering and tapering the cleared right-of-way and enhanced revegetation of the cleared right-of-way using local pinyon juniper and other local vegetation types where possible. KRGT would conduct topsoil salvage and respreading to reduce visual contrast and preserve a viable growing medium for effective revegetation. Seeding would also allow for the rapid reduction in the strong contrast from soil color. Implementation of these site-specific mitigation measures would reduce impacts on visual resources in this area to less than significant levels.

TABLE 4.8.7-1

Summary of Visual Analysis Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Mileposts	Viewshed	Critical Viewpoint	Jurisdiction	Visual Designation	Duration of Viewshed	Distance from Viewpoint to Pipeline	Visual Sensitivity
WYOMING								
Muddy Creek Loop	46.9 - 50.3	Bear River Valley	Highway 150 and Evanston	BLM, Private	Class II and III	Viewshed extends for 3.3 to 6.7 miles (4 to 8 minutes at 50 miles per hour (mph)). Views would be partially obstructed due to hilly terrain, vegetation, and urban structures along the highway.	Pipeline would be located about 4 miles from Highway 150 along the Mirror Lake Scenic Byway. The pipeline would cross Highway 150 at MP 49.3.	High
UTAH								
Coyote Creek Loop 1	83.0 - 91.0	Echo Dam, Grass Valley Canyon	Interstate (I) 80 and View Area Observation Point (Exit 166)	Private	Not applicable (NA) - surrounding BLM land is class III and IV	From an observation point pullover on I-80, the viewshed is about 0.25 mile. Views would be partially obstructed due to urban structures and vegetation.	Approximately 2 miles.	Low
Elberta Loop	227.0 - 244.0	Little Valley - Scipio Valley, Low Hills	I-15	BLM, Private	Class III and IV	The pipeline along this area would be adjacent to I-15 for about 18 miles. Intermittent views or views that would be partially obstructed would be observed from I-15 for about 17 minutes at 65 mph. Between MPs 227.0 and 232.0, view would be partially obstructed for drivers on I-15 due to small hills. Between MPs 232.0 and 244.0, the pipeline trace is level and surrounding topography is primarily made of flat-lying areas without vantage points. The pipeline would not be readily visible to travelers on I-15.	Approximately 3 to 5 miles.	Low
	244.0 - 248.0	Scipio Pass	I-15, Scipio	BLM, Private	Class II and III	Travelers on I-15 would have partially obstructed views due to terrain for about 1 minute at 65 mph.	Approximately 0.5 to 2 miles.	High

TABLE 4.8.7-1 (cont'd)

Summary of Visual Analysis Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Viewshed	Critical Viewpoint	Jurisdiction	Visual Designation	Duration of Viewshed	Distance from Viewpoint to Pipeline	Visual Sensitivity
Fillmore Loop	302.0 - 304.0	Pinnacle Pass	Black Rock Road, Highway 257, I-15	BLM	Class III	Partially obstructed view for travelers on Black Rock Road. Highway 257 would be about 8 to 10 miles away from the pipeline. No clear views due to the distance and hilly/mountainous terrain. Views from I-15 would be likely to occur for about 10 to 12 seconds at 65 mph.	Pipeline would cross Black Rock Road. Possible views from I-15 are about 10 miles away.	Moderate
	384.6 - 404.1	Dixie National Forest	Highway 18, Central	FS	Partial Retention and Modification	No view on Highway 18 between MPs 384.0 to 388.0 because of urban structures along the roadside. No view on Highway 18 between MPs 388.0 and 392.3 due to mountainous terrain. Between MPs 392.3 and 404.1 the pipeline would be intermittently clearly visible and partially obstructed from Highway 18 for about 12 minutes at 60 mph.	Pipeline would cross Highway 18 at MP 395.0. At its nearest point, the pipeline would be 2.5 miles from Central.	Moderate
	384.7 - 388.0	Dixie National Forest, Escalante Valley	Highway 56, Enterprise	FS	Modification	No view of the pipeline or the Escalante Valley from either westbound or eastbound Highway 56. The pipeline would be clearly visible to travelers on eastbound Highway 56 around MP 380.0 for approximately 1.5 to 2 minutes at 60 mph. No views on Highway 18 to Enterprise due to flat terrain and urban structures along the road.	On Highway 56 travelers would be about 2 to 3 miles away from the pipeline. On Highway 18 at Enterprise travelers would be about 6 miles away.	Low
	388.0 - 393.0	Dixie National Forest, Holt Canyon	FS Road 009, Highway 18	FS	Modification and Partial Retention	No view on Highway 18 between MPs 388.0 and 392.3 due to mountainous terrain. Partially obstructed view from various FS jeep trails. Intermittent views for off-road/trail access to viewshed.	Pipeline would be about 1 mile from Highway 18 at MP 393.0.	Low

TABLE 4.8.7-1 (cont'd)

Summary of Visual Analysis Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Viewshed	Critical Viewpoint	Jurisdiction	Visual Designation	Duration of Viewshed	Distance from Viewpoint to Pipeline	Visual Sensitivity
	393.0 - 397.0	Dixie National Forest, Hiway Spring	Highway 18	FS	Partial Retention	Clearly visible for travelers on Highway 18 for 4 miles north of where the pipeline would cross Highway 18 at MP 395.0 (a 4-minute view at 60 mph). Partially obstructed view between MPs 395.5 and 397.0 from Highway 18 for 2 miles south of where the pipeline would cross Highway 18 (a 2-minute view at 60 mph).	Pipeline would cross Highway 18 at MP 395.0.	Moderate
	392.3 - 394.0	Dixie National Forest, Mountain Meadows	Highway 18, Mountain Meadows trail and parking lot	FS	Partial Retention	Clearly visible viewpoint. Approximately 2 miles of the pipeline (between MPs 392.3 and 394.0) would be visible looking northeast from the parking lot. Intermittent views for off-road/trail access to viewshed.	Pipeline would be 0.7 mile from the parking lot.	High
	395.0	Dixie National Forest, Highway 18 crossing	Highway 18	FS	Partial Retention	Clearly visible facing northeast and southwest at the Highway 18 crossing for about 0.5 mile (30-second view at 60 mph).	Pipeline would cross Highway 18 at MP 395.	Moderate
	397.0 - 404.1	Dixie National Forest, California Hollow	Highway 18, Central, Veyo	FS	Partial Retention and Modification	Partially obstructed view for 1 mile when passing the town of Central on the left. Hills, a power station, and urban buildings block some views (1-minute view at 60 mph). The pipeline would be clearly visible for 2 miles from Veyo heading north on Highway 18 (a 2-minute view at 60 mph).	Pipeline would be 2.5 miles from Central and Veyo at its nearest point. Between Central and Veyo the pipeline would be 2.5 miles from Highway 18.	Low
Fillmore/Veyo Loops	404.1 - 414.0	Tobin Bench	Highway 18, Veyo, Gunlock	BLM	Class III	Clearly visible for 2 miles from Veyo heading north on Highway 18 (2-minute view at 60 mph). Partially obstructed at edges of western Veyo area. Partially obstructed views in and around the low-lying Gunlock area. Intermittent view for off-road/trail access to viewshed using jeep trail access roads north of Veyo.	Pipeline would be 2.5 miles from Veyo, Highway 18, and Gunlock at its nearest point.	Low

TABLE 4.8.7-1 (cont'd)

Summary of Visual Analysis Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Viewshed	Critical Viewpoint	Jurisdiction	Visual Designation	Duration of Viewshed	Distance from Viewpoint to Pipeline	Visual Sensitivity
Veyo Loop	414.0 - 432.8	Beaver Dam Mountains	None	BLM	Class III	Partially obstructed view from jeep trail access road (following MPs 414.0 to 432.8). Hilly area with rough utility access roads (45-minute view at 25 mph). Intermittent view for off-road/trail access to viewshed.	Pipeline would abut the north/northwest border of the Beaver Dam Mountains.	Low
NEVADA								
Veyo Loop	432.8 - 446.0	Tule Springs Mountains	None	BLM	Class IV	Partially obstructed views in remote area about 18 miles from I-15. From jeep trails (MPs 432.8 to 446.0) there would be a 32-minute view at 25 mph. Intermittent view for off-road/trail access to the two major washes.	Pipeline would abut the south border of the Tule Springs Mountains. Pipeline would cross Toquop and Sand Hollow Wash.	Low
	479.2 - 493.8	Moapa River Indian Reservation	I-15, Arrowhead, Glendale	Native American/ BLM	NA - surrounding area is class II, III, and IV	Clearly visible from Highway 169 intersection with I-15 heading southwest on I-15 for 11 miles followed by partially obstructed views for 11 miles (20-minute view at 65 mph). Partially obstructed at Searle Ranch viewpoint. Partially obstructed views in and around the low-lying Glendale area.	Pipeline would cross the Moapa River Indian Reservation. Pipeline would be between 0.5 mile and 3 miles north of I-15. Pipeline would be 0.5 mile north of Glendale and Arrowhead.	Moderate
	473.0-475.0	Meadow Valley Wash	I-15, Glendale	BLM	Class III	Clearly visible from I-15 for about 5 miles heading south of the junction of Highway 169 and I-15 (5-minute view at 65 mph). Partially obstructed views in and around the low-lying Glendale area.	Pipeline would cross the Meadow Valley Wash. Pipeline would be 3 miles north of I-15.	High

TABLE 4.8.7-1 (cont'd)

Summary of Visual Analysis Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Viewshed	Critical Viewpoint	Jurisdiction	Visual Designation	Duration of Viewshed	Distance from Viewpoint to Pipeline	Visual Sensitivity
Dry Lake Loop 2	552.0 - 557.4	Red Rock Canyon National Conservation Area	Border of Spring Mountains National Recreation Area and Red Rock Canyon National Conservation Area, Cottonwood Valley Trail Access Road (from Highway 160)	BLM	Class II and III	Clearly visible viewpoint. Overlook gives a northeast view to Las Vegas with a view of the pipeline route between MPs 552.0 and 557.4.	Pipeline would be about 0.7 mile at its nearest point.	High
CALIFORNIA								
Goodsprings Loop	579.4 - 598.0	Clark Mountain Complex	I-15, Kingston Road	BLM	Designated utility corridor, surrounding area is class III	Clearly visible views from the Nevada/California border heading southwest on I-15 for 4 miles followed by partially obstructed views for 4 miles (7-minute view at 65 mph). Partially obstructed view from utility corridor access road (32-minute view at 25 mph). Intermittent views for off-road/trail access to viewshed.	Pipeline would cross through the Clark Mountain Range. About a 1- to 8-mile-long background view from I-15.	Low
	585.0 - 593.5	Keany Pass	I-15, Mojave National Preserve	BLM	Designated utility corridor, surrounding area is class II	Partially obstructed view from utility corridor access road (20-minute view at 25 mph). Intermittent views for off-road/trail access to viewshed.	Pipeline would cross the Keany Pass.	Moderate
	593.5 - 598.0	Lower Clark Mountain	Kingston Road, Mojave National Preserve	BLM	Designated utility corridor, surrounding area is class II	Clearly visible where the pipeline would cross Kingston Road (view of MPs 595.0 to 598.0). Width of view at crossing would be 0.5 mile (1-minute view at 35 mph). Partially obstructed view from utility corridor access road (11-minute view at 25 mph). Intermittent views for off-road/trail access to viewshed.	Pipeline would abut the Mojave National Preserve and Lower Clark Mountain.	Moderate

TABLE 4.8.7-1 (cont'd)

Summary of Visual Analysis Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Viewshed	Critical Viewpoint	Jurisdiction	Visual Designation	Duration of Viewshed	Distance from Viewpoint to Pipeline	Visual Sensitivity
	598.0 - 627.0	Shadow Valley Complex	State Highway 127, I-15, Kingston Road	BLM	Designated utility corridor, surrounding area is class II and unclassified	Clearly visible where the pipeline would cross Kingston Road. Width of view at crossing is 0.5 mile (1-minute view at 35 mph). Partially obstructed view from utility corridor access road (70 minute view at 25 mph). Not visible from I-15. Intermittent views for off-road/trail access to viewshed.	Pipeline would cross through the Shadow Valley Complex.	Moderate
	605.0 - 612.0	Shadow Mountains	Jeep trails, I-15	BLM	Designated utility corridor, surrounding area is class II	Partially obstructed views from utility corridor access road (17-minute view at 25 mph). Not visible from I-15. Intermittent views for off-road/trail access to viewshed.	Pipeline would cross the Shadow Mountains. About 2 miles to base of Shadow Mountain Peak from utility corridor access road.	Moderate
	612.0 - 624.0	Silurian Hills	None	BLM	Designated utility corridor, surrounding area is class II and unclassified	Partially obstructed views from utility corridor access road (29-minute view at 25 mph). Intermittent views for off-road/trail access to viewshed.	Pipeline would cross the base of the Silurian Hills.	Low
	624.0 - 624.6	Silver Lake	State Highway 127	BLM	Designated utility corridor, surrounding area is unclassified	Clearly visible along State Highway 127. Width of view at crossing is 1 mile (1-minute view at 60 mph).	Pipeline would cross State Highway 127.	Low
	624.6	State Highway 127 crossing	State Highway 127	BLM	Designated utility corridor, surrounding area is unclassified	Clearly visible at the crossing of State Highway 127. Width of view at crossing is 1 mile (1-minute view at 60 mph).	Pipeline would cross State Highway 127.	Low
	624.6 - 627.0	Silver Lake	State Highway 127	BLM	Designated utility corridor, surrounding area is unclassified	Clearly visible along Highway 127. Width of view at crossing is 2 miles (2-minute view at 60 mph).	Pipeline would cross State Highway 127.	Low

TABLE 4.8.7-1 (cont'd)

Summary of Visual Analysis Along the Kern River 2003 Expansion Project Pipeline Route

State/Facility	Milepost	Viewshed	Critical Viewpoint	Jurisdiction	Visual Designation	Duration of Viewshed	Distance from Viewpoint to Pipeline	Visual Sensitivity
	627.0 - 642.0	Soda Mountains Complex, Red Pass Lake	None	BLM	Designated utility corridor, surrounding area is unclassified	Clearly visible from utility corridor access road and throughout the area in places with a view of the utility corridor/valley (36-minute view at 25 mph).	Pipeline would cross through the Soda Mountains Complex. About 0.3 mile to nearest point of Red Pass Lake.	Low
	627.0 - 635.0	Soda Mountains	None	BLM	Designated utility corridor, surrounding area is unclassified	Clearly visible from utility corridor access road and north faces of Soda Mountains (19-minute view at 25 mph).	Pipeline would cross the Soda Mountains.	Low
	635.0 - 638.0	Avawatz Spur	None	BLM	Designated utility corridor, surrounding area is unclassified	Clearly visible from utility corridor access road and south faces of Avawatz Spur (7-minute view at 25 mph).	Pipeline would abut the southern base of the Avawatz Mountains.	Low
	642.0 - 681.9	Mojave Valley, I-15 crossing	Daggett, Yermo, I-15	BLM	Designated utility corridor, surrounding area is unclassified	Clearly visible where the pipeline would cross I-15. Width of view at crossing is 0.7 mile (1-minute view at 65 mph). Pipeline trace would be flat-lying in the level ground near Yermo and Daggett with few vantage points.	Pipeline would cross I-15. About 2 miles to Yermo and 1 mile to Daggett.	Low

Mountain Meadows (MPs 392.3 to 394.0) - As the Fillmore Loop crosses the Mountain Meadows area within the Dixie National Forest, it would be visible from Highway 18, the Mountain Meadows Trail, and the Mountain Meadows Monument parking lot. KRGT would leave trees and vegetation on the downhill side of the right-of-way to provide a natural screen from the trail and parking lot. KRGT would limit clearing to preserve mature shrubs and trees. In addition, KRGT's mowing or cutting of vegetation at ground level would encourage resprouting of oak brush. After construction, KRGT would regrade the right-of-way to match preconstruction contours and boulders and trees would be randomly placed to discourage OHV use (see section 4.8.6.2). Implementation of these site-specific mitigation measures would reduce impacts on visual resources in this area to less than significant levels.

Meadow Valley Wash (MPs 473.8 to 475.0) - KRGT would use enhanced revegetation to mitigate the potential visual impact of the Veyo Loop on the Meadow Valley Wash area. The existing mesquite stands in the area would not be disturbed by the proposed pipeline. KRGT would place natural and artificial obstructions (*e.g.*, boulders, earthen berms, cleared vegetation) from about MP 473 to Meadow Valley Wash and where the right-of-way crosses existing roads or trails to reduce the visibility of the right-of-way for unauthorized OHV use. Implementation of these site-specific mitigation measures would reduce impacts on visual resources in this area to less than significant levels. Additional discussion of the revegetation measures in this area is presented in section 4.5.3.

Red Rock Canyon NCA (MPs 552.0 to 557.4) - KRGT would implement site-specific mitigation measures to reduce the visual impact of the Dry Lake Loop 2 on the Red Rock Canyon NCA. The proposed loop would be adjacent to the existing KRGT pipeline using a reduced 20-foot offset. The permanent right-of-way for the new pipeline would be placed exactly within the boundary of the permanent right-of-way for the existing KRGT pipeline. KRGT would keep the disturbance in this area to the absolute minimum required for construction of the pipeline. KRGT would use rock mulch or other methods to blend the color of the disturbed area with its surroundings. KRGT would transplant succulent plant species such as cacti, yucca, Joshua trees, and agave specimens in viewsheds with key observation points. Before construction begins, plant specimens required for visual reclamation that are of the appropriate size would be flagged by KRGT for removal and replanting. KRGT would transport additional salvaged succulents provided by the BLM on the existing right-of-way. In addition, KRGT would use Permeon™ on the north facing slope at Wilson Tank (around MP 556.6) and on the exposed rock at MPs 557.3 and 558.2, which are visible from a public access road. KRGT would use Permeon™ on both the existing and proposed construction rights-of-way in these areas. In these areas, KRGT would also arrange the boulders and other exposed surface rock along the existing right-of-way in a more non-linear arrangement to reduce the visibility from the public access road. Implementation of these site-specific mitigation measures would reduce impacts on visual resources in this area to less than significant levels.

A comment was received about the proposed Clark County Red Rock Design Overlay District in relationship to the pipeline route and aboveground facilities. The Red Rock Design Overlay District sets site development standards; landscaping/buffering and screening standards; signage and gateway community features; and site lighting standards for the area adjacent to the Red Rock Canyon NCA and specifically in the vicinity of the intersection of Highways 159 and 160 in Clark County. These standards primarily apply to non-residential developments with aboveground facilities. The pipeline route would cross Highway 160 at MP 548.5, about 0.4 mile east of the intersection with Highway 159. No aboveground facilities would be constructed in this area or within the boundaries of the Red Rock Canyon NCA. With implementation of KRGT's proposed mitigation measures to reduce impacts on visual resources resulting from the project, the project appears to be consistent with the standards set forth in the Red Rock Design Overlay District.

4.8.7.3 Aboveground Facilities

The proposed Coyote Creek Compressor Station, access road, and powerline would be located on open rangeland adjacent to County Road 153 in Uinta County, Wyoming. The powerline structure would consist of 40-foot-high wooden poles spaced 300 feet apart and supporting three-phase service on cross arms. The site is rural and relatively remote. The terrain is generally flat. The land for the compressor station is not managed by the BLM or FS and does not have a VRM classification.

The proposed Salt Lake Compressor Station, access road, and powerline would be located on agricultural land adjacent to existing industrial and commercial facilities about 2 miles southwest of the Salt Lake City Airport in Salt Lake County, Utah. The terrain of the site is generally flat. The powerline would be buried from the last existing utility company distribution pole to the compressor station property. The site is privately owned and does not have a BLM or FS VRM classification.

The proposed Dry Lake Compressor Station, access road, and powerline would be located on rangeland about 1.4 miles west of Interstate 15. The powerline structure would consist of 48.5-foot-high wooden poles spaced 340 feet apart. The site would be adjacent to Henry Allen Road in Clark County, Nevada on relatively flat terrain. The site is managed by the BLM and has a VRM classification of III.

All but three of the pig launcher/receiver facilities would be installed within the fencelines of or adjacent to other existing or proposed major aboveground facility sites. Another two of the proposed pig launcher/receiver facilities would be located adjacent to existing MLVs. All five of these pig launcher/receiver facilities would be located on rangeland. The facility at MP 96.4 of the Coyote Creek Loop 1 would be located on hilly terrain with a mixed rangeland landscape adjacent to an existing launcher/receiver facility and MLV. The facility at MP 124.5 of the Coyote Creek Loop 2 would be located on flat terrain adjacent to 2200 West Street in Salt Lake County, Utah. The land for these two facilities is not managed by the BLM or FS and does not have a VRM or VQO classification. The facility at MP 517.5 of the Dry Lake Loop 1 would be located on hilly terrain adjacent to several existing powerlines and an electric substation. The land for the site is managed by the BLM and has a VRM classification of III. The facility at MP 543.6 of the Dry Lake Loop 2 would be located on hilly terrain in a remote part of Clark County, Nevada. The land for the site is managed by the BLM and has a VRM classification of IV. The facility at MP 82.4 of the Daggett Loop would be located on flat terrain within designated Utility Corridor G and adjacent to an existing MLV. The land for the site is managed by the BLM but does not have a VRM classification (unclassified).

MLVs would be installed adjacent to existing MLV facilities except for one location along the Salt Lake Loop. The MLV at MP 164.1 would be located on relatively flat terrain adjacent to an existing powerline. The land for this MLV is not managed by the BLM or FS and does not have a VRM or VQO classification.

Construction and operation of the new aboveground facilities and associated powerlines would have a permanent impact on visual resources. However, while the new Coyote Creek and Dry Lake Compressor Stations and powerlines would be visibly apparent, the rural nature of these sites limits the number of key observation points and viewing opportunities available, thereby reducing visual impact to less than significant levels. The proposed Salt Lake Compressor Station facility would be visible but would be seen in the context of several nearby industrial and commercial facilities, thereby reducing visual impact to less than significant levels.

Modifications to the other six existing compressor stations and the five existing meter stations would not result in additional permanent visual impact. All of the modifications would occur within the fencelines of the existing facilities. Modifications at the Veyo Compressor Station, however, would require an

additional 4 acres of land during construction. After construction, the 4 acres of land would be returned to preconstruction conditions and would not result in any additional permanent visual impact.

The majority of the facilities at the pig launcher/receiver and MLV sites would be located below ground, which would limit the visibility of the facilities and minimize effects on the surrounding visual landscape to less than significant levels.

In addition, all aboveground piping surfaces and structures would be sandblasted and painted in accordance with KRGT's construction specifications and the color requirements of BLM standards to be compatible with the landscape. A reflective material may be used to reduce hazards that occur when such structures are near roads and/or to comply with U.S. Department of Labor, Occupational Safety and Health Administration requirements. Otherwise, the paint would be a non-glare, non-reflective, non-chalking color. KRGT would conduct all paint inspection and cleanup in accordance with regulatory requirements and best engineering practices.

KRGT would install lights at each of the new aboveground facility sites. KRGT would direct outside building and yard lights onto the facility itself to minimize the amount of light diffused onto the adjacent areas. Switching for yard lights mounted on light standards would be manually operated (not automated by photocell) and would be used only during yard maintenance work (lights would be off during normal operation).

4.9 SOCIOECONOMICS

Significance Criteria

A socioeconomic impact would be considered significant and require additional mitigation if project construction or operation would:

- cause a permanent population increase of 3 percent or more in a county affected by the project;
- cause the vacancy rate for temporary housing to fall to less than 5 percent;
- increase the short- or long-term demand for public services in excess of existing and projected capacities; or
- result in any racial, ethnic, or socioeconomic group bearing a disproportionate share of adverse impact.

4.9.1 General Impact and Mitigation

Some of the potential socioeconomic effects from construction, operation, and maintenance of the project are related to the number of construction workers that would work on the project and their impact on population, public services, and temporary housing during construction. Other potential effects are related to construction, such as increased traffic or disruption of normal traffic patterns along the route, or temporary disturbance of agricultural land, homes, and businesses. Other effects associated with the project include increased property tax revenue, increased job opportunities and income associated with local construction employment, and local expenditures by the pipeline company and non-local construction workers.

The potential impact of the project on land use, residences, and the existing transportation system in the project area is discussed in section 4.8. A discussion of the project's effects on population and employment, public services, housing, traffic, and tax revenue is provided below as well as a discussion of the impact of the project on property values.

4.9.2 Population, Economy, and Employment

Table 4.9.2-1 (page 4-217) provides a summary of selected demographic and socioeconomic statistics for the states and counties where project facilities are proposed. The majority of the counties crossed by the project are sparsely populated, with population densities less than 100 people per square mile. Exceptions to this are Salt Lake and Utah Counties, Utah and Clark County, Nevada.

The counties crossed by the pipeline in Wyoming and California experienced low to moderate population increases between 1990 and 2000, similar to the state population increases of 8.9 percent and 13.8 percent, respectively, over the same period of time. The majority of the counties crossed by the pipeline route in Utah experienced moderate to high population increases between 1990 and 2000. Five counties in Utah experienced higher increases than the 29.6 percent state population increase over the same period of time. The two counties crossed in Nevada experienced widely varying rates of population increases (10.3 percent in Lincoln County and 85.5 percent in Clark County). The population increase for the state was 66.3 percent.

TABLE 4.9.2-1

Existing Socioeconomic Conditions Along the Kern River 2003 Expansion Project Pipeline Route

State/County	Population			Population Density a/		Per Capita Income		Civilian Labor Force	Unemployment Rate (percent)	Top Two Major Industries
	1990	2000	Percent Change	1990	2000	1989	1998	1999	1999	1998
WYOMING	453,588	493,782	8.9	4.7	5.1	$12,311	$24,312	262,069	4.9	Government Wholesale/retail trade and Services
Lincoln	12,625	14,573	15.4	3.1	3.6	$10,558	$18,918	6,577	6.2	Government Wholesale/retail trade
Uinta	18,705	19,742	5.5	9.0	9.5	$12,245	$19,485	10,812	6.9	Government Wholesale/retail trade
UTAH	1,722,850	2,233,169	29.6	21.0	27.2	$11,029	$22,240	1,083,912	3.7	Services Wholesale/retail trade
Summit	15,518	29,736	91.6	8.3	15.9	$16,739	$39,645	14,253	4.9	Services Wholesale/retail trade
Morgan	5,528	7,129	29.0	9.1	11.7	$10,448	$19,066	3,491	4.1	Wholesale/retail trade Government
Salt Lake	725,956	898,387	23.8	985.0	1219.0	$12,222	$26,100	476,323	3.4	Services Wholesale/retail trade
Utah	263,590	368,536	39.8	131.9	184.5	$9,051	$17,956	163,077	3.2	Services Wholesale/retail trade
Juab	5,817	8,238	41.6	1.7	2.4	$8,332	$14,883	3,594	5.0	Wholesale/retail trade Government
Millard	11,333	12,405	9.5	1.7	1.9	$8,574	$15,734	4,463	4.5	Government Wholesale/retail trade
Beaver	4,765	6,005	26.0	1.8	2.3	$8,558	$16,705	2,338	3.9	Government Wholesale/retail trade
Iron	20,789	33,779	62.5	6.3	10.2	$8,539	$17,090	14,883	3.7	Government Services
Washington	48,560	90,354	86.1	20.0	37.2	$9,450	$18,428	37,667	3.6	Wholesale/retail trade Services

TABLE 4.9.2-1 (cont'd)

Existing Socioeconomic Conditions Along the Kern River 2003 Expansion Project Pipeline Route

State/County	Population			Population Density a/		Per Capita Income		Civilian Labor Force	Unemployment Rate (percent)	Top Two Major Industries
	1990	2000	Percent Change	1990	2000	1989	1998	1999	1999	1998
NEVADA	1,201,833	1,998,257	66.3	10.9	18.2	$15,214	$29,200	941,600	4.4	Services Wholesale/retail trade
Lincoln	3,775	4,165	10.3	0.4	0.4	$9,074	$20,375	1,045	3.0	Government Services
Clark	741,459	1,375,765	85.5	93.7	173.9	$15,109	$28,884	649,848	4.4	Services Wholesale/retail trade
CALIFORNIA	29,760,021	33,871,648	13.8	190.8	217.2	$16,409	$28,163	16,585,881	5.2	Manufacturing Retail trade
San Bernardino	1,418,380	1,709,434	20.5	70.7	85.2	$13,358	$20,258	754,716	4.8	Wholesale/retail trade Services
Kern	543,477	661,645	21.7	66.8	81.3	$12,154	$19,643	280,491	11.4	Agriculture Government

a/ Persons per square mile, based on population and area size:
Wyoming (97,100 sq. mi.), Lincoln County, WY (4,069 sq. mi.), Uinta County (2,082 sq. mi.);
Utah (82,144 sq. mi.), Summit County (1,871 sq. mi.), Morgan County (609 sq. mi.), Salt Lake County (737 sq. mi.), Utah County (1,998 sq. mi.), Juab County (3,392 sq. mi.), Millard County (6,589 sq. mi.), Beaver County (2,590 sq. mi.), Iron County (3,298 sq. mi.), Washington County (2,427 sq. mi.);
Nevada (109,826 sq. mi.), Lincoln County, NV (10,634 sq. mi.), Clark County (7,910 sq. mi.); and
California (155,959 sq. mi.), San Bernardino County (20,053 sq. mi.), Kern County (8,141 sq. mi.).

Sources: U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population and Housing, 2000 Census of Population and Housing (www.census.gov); U.S. Department of Commerce, Bureau of Economic Analysis, Geostat-Regional Economic Information System, 1998 (fisher.lib.virginia.edu/reis/index.html); Fedstats, MapStats - Statistical Profiles of States, Counties, Congressional Districts, and Federal Judicial Districts, 2001 (www.fedstats.gov).

Government, wholesale/retail trade, and/or services are the largest economic sectors in most of the counties crossed by the pipeline. Agriculture is the main industry in Kern County, California. In the counties crossed by the pipeline route in Wyoming, Nevada, and California, the per capita incomes in 1998 were lower than the state per capita income. In Utah, two counties (Summit and Salt Lake) had 1998 per capita incomes higher than the state per capita income, with the rest of the counties slightly lower than the state. The unemployment rates of the two counties crossed in Wyoming are higher than the state rate of 4.9 percent. Five of the 10 counties crossed in Utah have higher unemployment rates than the state rate of 3.7 percent. The unemployment rates of the two counties crossed in Nevada are similar to the state rate of 4.4 percent. The unemployment rate of 11.4 percent for Kern County, California is more than twice the state rate of 5.2 percent. The other county crossed by the pipeline route in California, San Bernardino County, has a lower unemployment rate than the state.

Table 4.9.2-2 (page 4-220) lists the size of the proposed construction workforce for the major project components, including construction spreads, compressor stations, and meter stations. KRGT estimates that between 400 and 450 workers would be employed on each construction spread. The number of construction workers at each compressor and meter station would vary depending on the stage of construction, ranging from site preparation to testing and commissioning for new compressor stations and installation of additional units at existing stations.

The construction workforce would include both local and non-local workers. When available, local workers would be employed for construction. Additional construction personnel hired from outside the project area would include construction specialists, supervisory personnel, and inspectors who would temporarily relocate to the project area. It is estimated that up to 30 percent of the construction workforce would be local hires, depending on union agreements and the methods the contractor uses to hire subcontractors.

Project-area population impacts are expected to be temporary and proportionally small. The total population change would equal the total number of non-local construction workers, plus any family members accompanying them. Given the brief construction period (between 4 to 6 months per spread), most non-local workers are not expected to be accompanied by their families. Assuming 20 percent of the 280 to 315 non-local workers per spread bring three other family members with them, the total increase in population along each spread would be between 504 and 567 people. This temporary increase would not constitute a significant impact on population.

KRGT would add about 12 permanent employees as a result of the project. None of these employees would be located at the stations because the stations are designed to operate remotely. The operations workforce would work from KRGT's existing district offices in Evanston, Wyoming; Fillmore, Utah; and Las Vegas, Nevada. Additional personnel would be based at each district office after construction of the project is completed. The number of staff added would equal less than a 1 percent permanent increase in the population of each of the three counties where KRGT's existing district offices are located (Uinta County, Wyoming; Millard County, Utah; and Clark County, Nevada). Other potential impacts associated with construction of the project include increased traffic or disruption of normal traffic patterns along the route. Traffic impacts are discussed in section 4.9.5.

TABLE 4.9.2-2

Estimated Construction Workforce for the Kern River 2003 Expansion Project

Facility	Milepost	Estimated Workforce Average/Peak	Location
Pipeline			
Spread 1 Opal Loop and Muddy Creek Loop	0.0-6.3 0.0-60.1	400/450	Lincoln and Uinta Counties, WY
Spread 2 Coyote Creek Loop 1 and Anschutz Lateral	60.1-96.4	400/450	Uinta County, WY Summit and Morgan Counties, UT
Spread 3 Coyote Creek Loop 2 and Salt Lake Loop	124.5-184.5	400/450	Salt Lake and Utah Counties, UT
Spread 4 Salt Lake Loop, Elberta Loop, and Fillmore Loop	184.5-277.0	400/450	Utah, Juab, and Millard Counties, UT
Spread 5 Fillmore Loop	277.0-368.9	400/450	Millard, Beaver, and Iron Counties, UT
Spread 6 Fillmore Loop, Veyo Loop	368.9-416.0	400/450	Iron and Washington Counties, UT
Spread 7 Veyo Loop, Dry Lake Loop 1	416.0-517.5	400/450	Washington County, UT Lincoln and Clark Counties, NV
Spread 8 Dry Lake Loop 2 and Goodsprings Loop	543.6-598.0	400/450	Clark County, NV San Bernardino County, CA
Spread 9 Goodsprings Loop	598.0-681.9	400/450	San Bernardino County, CA
Spread 10 Daggett Loop	0.0-82.4	400/450	San Bernardino and Kern Counties, CA
Compressor Stations			
Muddy Creek Compressor Station	0.0	35/50	Lincoln County, WY
Coyote Creek Compressor Station	60.1	50/90	Uinta County, WY
Salt Lake Compressor Station	132.0	50/90	Salt Lake County, UT
Elberta Compressor Station	191.6	8/12	Utah County, UT
Fillmore Compressor Station	276.7	40/70	Millard County, UT
Veyo Compressor Station	406.5	40/70	Washington County, UT
Dry Lake Compressor Station	500.1	50/90	Clark County, UT
Goodsprings Compressor Station	565.9	50/70	Clark County, UT
Daggett Compressor Station	681.9	50/90	San Bernardino County, CA
Meter Stations			
Opal Meter Station	0.0	20/30	Lincoln County, WY
PG&E Meter Station	680.9	3/5	San Bernardino County, CA
Daggett Meter Station	681.9	5/10	San Bernardino County, CA
Kern Front Meter Station	39.5 a/	3/5	Kern County, CA
Wheeler Ridge Meter Station	137.4 b/	5/10	Kern County, CA

a/ The Kern Front Meter Station is located on the East Lateral of the KRGT/Mojave Common System. The East Lateral is not being looped by the Kern River 2003 Expansion Project.

b/ The Wheeler Ridge Meter Station is located on the West Lateral of the KRGT/Mojave Common System. The West Lateral is not being looped by the Kern River 2003 Expansion Project.

4.9.3 Housing

Housing statistics are presented in table 4.9.3-1 (below). Counties in Wyoming and California have lower median rents than their respective state averages. Counties in Wyoming, Nevada, and California have lower median values for owner-occupied housing than their respective state averages. The median values for owner-occupied housing and median rents for counties in Utah vary when compared to the state average, as do the median rents for the two counties in Nevada when compared to the state average.

TABLE 4.9.3-1

1990 Housing Characteristics in Affected Counties

State/County	Owner Occupied (percent)	Renter Occupied (percent)	Median Value, Owner Occupied Units	Median Gross Monthly Rent	Owner Vacancy Rate (percent)	Rental Vacancy Rate (percent)
WYOMING	68	32	$61,600	$270	3.9	14.4
Lincoln	80	20	$60,200	$248	4.8	18.9
Uinta	72	28	$59,300	$258	6.2	22.7
UTAH	68	32	$68,900	$300	2.4	8.6
Summit	71	29	$107,800	$451	3.0	52.3
Morgan	83	17	$78,000	$286	1.2	4.3
Salt Lake	65	35	$71,000	$316	2.5	8.2
Utah	63	37	$70,000	$288	1.1	2.2
Juab	80	20	$43,300	$194	4.2	7.9
Millard	79	21	$50,400	$199	3.6	17.4
Beaver	85	15	$51,200	$190	4.7	27.9
Iron	70	30	$63,400	$267	3.0	8.8
Washington	71	29	$78,400	$346	3.5	8.4
NEVADA	55	45	$95,700	$445	2.3	9.1
Lincoln	74	26	$50,900	$180	2.3	11.6
Clark	52	48	$93,300	$461	2.5	9.8
CALIFORNIA	56	44	$195,500	$561	2.0	5.9
San Bernardino	63	37	$129,200	$489	3.2	8.7
Kern	59	41	$82,800	$365	2.1	6.4

Source: U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population and Housing, STF3A Files (www.census.gov).

Temporary housing availability varies seasonally and geographically within the counties and the communities crossed by the pipeline route. Temporary housing is available in the form of daily, weekly, and monthly rentals in motels, hotels, campgrounds, and rooming houses. Along the southern portion of the route, temporary housing is least available during the winter, when residents of northern states come to take advantage of the warmer weather. There is less demand for temporary housing during the hot summer months. Table 4.9.3-2 (page 4-222) provides hotel/motel rooms and campgrounds/RV parks in larger cities and towns within commuting distance (*i.e.*, approximately 60 miles or minutes) of the construction spreads.

TABLE 4.9.3-2

Temporary Accommodations Available

Facility	Construction Spread	Potential Lodging/ Campground Location	Maximum Commute Distance (miles)	Hotel/Motel Rooms (by city)	Camp Sites/RV Sites (by city)
Opal Loop, Muddy Creek Loop	1	Evanston, WY	65	1,100	53
		Kemmerer, WY	10	185	94
Coyote Creek Loop 1	2	Evanston, WY	10	1,100	53
		Coalville, UT	35	37	0 a/
Coyote Creek Loop 2, Salt Lake Loop	3, 4	Salt Lake City, UT	5	11,273	1 a/
Elberta Loop	4	Nephi, UT	30	225	3 a/
Fillmore Loop	4, 5, 6	Millford, UT	5	23	0 a/
		Beaver, UT	20	403	2 a/
		Cedar City, UT	40	985	2 a/
Veyo Loop	6, 7	Cedar City, UT	55	985	2 a/
		St. George, UT	10	2,265	4 a/
Dry Lake Loop 1	7	Mesquite, NV	35	2,506	371
		Las Vegas, NV	15	124,270	5,829
Dry Lake Loop 2, Goodsprings Loop	8, 9	Las Vegas, NV	10	124,270	5,829
		Primm, NV	40	3,758	196
		Yermo, CA	2	3 a/	0
		Daggett, CA	1	0	1 a/
Daggett Loop	10	Daggett, CA	1	0	1 a/
		Barstow, CA	10	1,900	0
		Victorville, CA	45	1,182	495
		Boron, CA	1	2 a/	0
		Mojave, CA	1	11 a/	2 a/

a/ The number of individual hotel/motel rooms or camp sites and RV sites is not available. The number of hotels/motels or campgrounds/RV parks in the town is provided. Each hotel/motel or campground/RV park would include multiple rooms or camp sites and RV sites.

Source: Wyoming Division of Travel and Tourism, Visitor Directory, 2001; Nevada Commission on Tourism, RV Parks/State Parks Listing (www.travelnevada.com); AAA Publishing, CampBook, 2001 Edition; U.S. Department of Commerce, Bureau of the Census, 2000 Census of Population and Housing, (www.census.gov); Boron Chamber of Commerce, 2002; Evanston, 2001; Foothill RV Park, 2001; Kemmerer Chamber of Commerce, 2001; Kemmerer City Hall, 2001; Rector, 2001; Riverside RV Park, 2001; Utah Hotel and Lodging Association, 2001; Victorville Chamber of Commerce, 2001; ECO Advertising, 2001.

Construction of the project could affect the availability of housing in the project area; however, no significant impacts on local housing markets are expected. Because the construction period along each spread is relatively short, and because most non-local workers are expected to come alone without their families due to the temporary nature of the relocations, most workers are likely to use temporary housing such as hotels, motels, apartments, and campgrounds within commuting distance of the project area.

Assuming that local construction workers do not require housing, up to 315 housing units for the non-local workers may be required. Previous pipeline experience suggests that approximately 30 percent of the non-local workers will provide their own housing units (*i.e.*, travel trailers or RV campers). Given the vacancy rates, the number of rental housing units in the area, and the number of hotel/motel rooms and camp sites available in cities and towns in the vicinity of the route, construction crews should not encounter difficulty in finding temporary housing. Construction of Spreads 1 through 6 is scheduled to occur during

the late summer and fall of 2002, and construction of Spreads 7 through 10 is scheduled to occur during the fall of 2002 through the spring of 2003. While these would occur during the peak tourism times (summer months along the northern portion of the route, winter months along the southern portion of the route), temporary housing would still be available but may be more difficult to find, and/or more expensive to secure. Should accommodations not be available near the pipeline route, construction workers would have to locate accommodations outside the approximately 60-mile commuting distance shown. Temporary camps along the construction right-of-way would not be used to accommodate construction workers. Housing for the construction crews would not cause the vacancy rate for temporary housing to fall to less than 5 percent in any of the counties crossed by the project except for Morgan and Utah Counties in Utah. The vacancy rates for these two counties are currently already below 5 percent. Construction of the project would not significantly change the vacancy rate in either of these counties.

4.9.4 Public Services

A wide range of public services and facilities are offered at intervals along the pipeline route, with concentrations of services in Evanston and Kemmerer, Wyoming; Salt Lake City, Beaver, Cedar City, and St. George, Utah; Mesquite, North Las Vegas, and Las Vegas, Nevada; and Barstow, California. Where services are not available at the local level, they are available from the county. Services and facilities include law enforcement agencies, fire departments, hospitals, emergency response services, and public works/water treatment/waste disposal departments. Each county crossed by the pipeline provides law enforcement officers and fire service stations. All counties except Summit and Morgan Counties, Utah have hospitals. The pipeline route in these two counties is located near hospitals in Uinta County, Wyoming (in Evanston), Lincoln County, Wyoming (in Kemmerer), and Salt Lake County, Utah (in Salt Lake City).

Because the non-local workforce would be small relative to the current population, construction of the pipeline would result in minor, temporary, or no impact on local community facilities and services such as police, fire, medical, and waste disposal services. Local communities have adequate infrastructure and community services to meet the needs of the non-local workers that would be required for the project. Other construction-related demands on local agencies could include increased enforcement activities associated with issuing permits for vehicle load and width limits, local police assistance during construction at road crossings to facilitate traffic flow, and emergency medical services to treat injuries resulting from construction accidents. KRGT would work with local firefighters and other emergency responders to coordinate activities for effective emergency response. The degree of impact would vary from community to community depending on the number of non-local workers (and any accompanying family members) that temporarily reside in each community, how long they stay, and the size of the community. Although these factors are too variable to accurately predict the severity of the impact, the effects would be short term and are therefore not expected to be significant.

The project has no wastewater treatment requirements and would not require construction of new or expanded wastewater facilities or storm water drainage facilities that could cause significant environmental effects. The project's solid waste disposal needs would be modest and can be accommodated by existing recycling programs and landfills. The project would comply with Federal, state, and local statutes and regulations related to wastewater and solid waste disposal.

The absence of permanent staff at the compressor stations during operation would result in no impacts on local water supplies or wastewater facilities, or other local services.

Overall, construction and operation of the proposed project would not result in significant impacts on local public services in the project area.

4.9.5 Traffic

Construction activities, such as the influx of construction workers to the project area, could result in traffic congestion and roadside parking hazards. To minimize these potential effects, KRGT would require that construction workers use contractor yards as the primary parking area for employee's personal vehicles. Workers would be transported from contractor yards to the construction site in buses provided by the contractor. Transporting workers by bus would reduce traffic and eliminate the need for personal vehicles to be parked along the right-of-way or along roadsides near the right-of-way. Only company (*i.e.*, contractor and/or KRGT) vehicles would be allowed on the right-of-way. Furthermore, the number and frequency of construction vehicles would be low on any particular roadway at any one time because construction would move sequentially along several miles of the proposed route.

The delivery of construction equipment and materials could also temporarily congest existing transportation networks at specific locations. To minimize disruption to traffic, KRGT has sited its contractor yards at locations that have existing adequate roadway access to the pipeline construction areas.

As stated in section 4.3.2.11, to implement KRGT's dust control measures, water trucks would fill up at water storage locations and then travel the right-of-way applying water as necessary to control dust. It is expected that each spread would have roughly 4 water trucks operating and each truck would make approximately 6 round trips per day for a total of 24 round trips along the right-of-way. The water storage areas would be located directly adjacent or in proximity to the construction right-of-way and, therefore, the impact of the water trucks on public roads would be minimal.

Implementation of these measures would reduce traffic-related impacts to less than significant levels. Details on the effect of highway, road, and railroad crossings on the transportation system in the project area are presented in section 4.8.5.

4.9.6 Property Values

Comments were received during the scoping process regarding property devaluation caused by a pipeline easement. Appraisal methods used to value land are based on objective characteristics of the property and any improvements. The impact a pipeline may have on the value of a tract of land depends on many factors, including the size of the tract, the values of adjacent properties, the presence of other utilities, the current value of the land, and the current land use. Subjective valuation is generally not considered in appraisals. This is not to say that the pipeline would not affect resale values. A potential purchaser of property may make a decision to purchase based on his or her planned use, such as agricultural, future subdivision, or second home on the property in question. If the presence of a pipeline renders the planned use infeasible, it is possible that a potential purchaser would decide not to purchase the property. However, each potential purchaser has different criteria and differing capabilities to purchase land.

The effect that an easement may have on property values is a damage-related issue and should be negotiated between the parties during the easement acquisition process or would be determined during condemnation proceedings. This negotiation is beyond the scope of this EIS/EIR.

Property taxes for a piece of property are generally based on the actual use of the land. Construction of the pipeline would not change the general use of the land, but it would preclude construction of aboveground structures on the permanent right-of-way. If a landowner feels that the presence of a pipeline easement reduces the value of his or her land, resulting in an overpayment of property taxes, he/she may appeal the issue of the assessment and subsequent property taxation to the local property tax agency. This is the proper forum for this issue to be addressed.

4.9.7 Tax Revenue

Construction and operation of the proposed pipeline would have a beneficial impact on local tax revenue based on projected tax revenue (see tables 4.9.7-1 and 4.9.7-2 (below)). Revenue from sales tax would be greater during construction based on the temporary influx of workers to the area. The increase in property tax revenue, equaling about $11.8 million annually, and sales tax revenue from the permanent staff added at each of KRGT's existing district offices would be permanent.

TABLE 4.9.7-1

Estimated Property Tax Payments by State for the Kern River 2003 Expansion Project

State/Facility	Estimated Annual Ad Valorem and Property Taxes
WYOMING	
Pipeline, Muddy Creek Compressor Station, Coyote Creek Compressor Station, Opal Meter Station	$1,130,000
UTAH	
Pipeline, Salt Lake Compressor Station, Elberta Compressor Station, Fillmore Compressor Station, Veyo Compressor Station	$5,600,000
NEVADA	
Pipeline, Dry Lake Compressor Station, Goodsprings Compressor Station	$1,980,000
CALIFORNIA	
Pipeline; Daggett Compressor Station, PG&E Meter Station, Daggett Meter Station, Kern Front Meter Station, SoCal Wheeler Ridge Meter Station	$3,060,000
Project Total	$11,770,000

TABLE 4.9.7-2

Estimated Sales Tax Revenue by State from the Kern River 2003 Expansion Project

	Wyoming	Utah	Nevada	California	Project Total
Total Construction Payroll	$22,684,000.00	$97,959,000.00	$51,360,000.00	$61,595,000.00	$233,598,000.00
State Sales Tax Rate	4%	4.75%	6.5%	7%	NA
Estimated Sales Tax Revenues from Construction Workers' Purchase of Local Goods	$8,148.00	$27,700.00	$17,378.00	$20,842.00	$74,068.00
Cost of Materials Purchased Locally	$1,384,000.00	$4,562,000.00	$1,162,000.00	$2,405,000.00	$9,513,000.00
Sales Tax Generated from Locally Purchased Materials	$55,360.00	$216,695.00	$75,530.00	$168,350.00	$515,935.00
Operations					
Post-construction Personnel Based in State	10	104	15	1	130
Increase from Current Personnel Based in State	2	7	3	0	12
Base Wages	$509,606.00	$5,453,927.00	$755,189.00	$54,392.00	$6,773,114.00
Benefits	$254,803.00	$2,726,963.50	$377,594.50	$27,196.00	$3,386,557.00
Total Wages	$764,409.00	$8,180,890.50	$1,132,783.50	$81,588.00	$10,159,671.00

4.9.8 Environmental Justice

Executive Order 12898 on Environmental Justice requires that each Federal agency address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. Federal agencies' responsibilities under this order also apply equally to Native American programs.

Table 4.9.8-1 (page 4-227) presents the general ethnic mix and the economic status of the counties and states that would be affected by the project.

The two counties affected by the project in Wyoming have lower percentages of Native Americans, Hispanics, and households receiving public assistance than the state averages. The median family income in Lincoln County is lower than the state average, while Uinta County's is higher than the state average.

Most of the affected counties in Utah have lower Native American populations than the state average, the exceptions being Iron and Washington Counties. Salt Lake County is the only county with a higher percentage of Hispanics than the state average. Six of the nine counties have lower percentages of households receiving public assistance than the state averages except Juab, Millard, and Washington Counties. Summit, Morgan, and Salt Lake Counties are the only counties with higher median family incomes than the state average.

Lincoln County in Nevada has a higher percentage of Native Americans than the state average, while Clark County has a lower percentage than the state average. The opposite is true for Hispanic populations, with the percentage for Lincoln County being lower than the state average, and Clark County being higher. Both counties have a higher percentage of households receiving public assistance than the state average, and both counties have a lower median family income than the state average.

In California, both counties crossed by the project have a higher percentage of Native Americans, Hispanics, and households receiving public assistance than the state averages. The median family incomes of both counties are lower than the state average.

Although several counties affected by the project could be characterized as poorer than average, there is no evidence that the project would adversely affect the population because the pipeline route is located almost exclusively in rural areas, and most of it crosses remote, unpopulated stretches of desert.

Under Executive Order 12898, each Federal agency must ensure that public documents, notices, and hearings are readily available to the public. The mailing list for the project was initiated when the CSLC's NOP was issued, updated and expanded when the FERC's/CSLC's NOI/NOP was issued, and has been continually updated during the EIS/EIR process. All affected property owners along the proposed route, as identified by the applicant, received the notices about the project without any distinction based on minority or income status. Native American groups identified as having an interest in the project area also received the notices about the project. The distribution list for the draft and final EIS/EIRs included Native American groups; local newspapers and libraries; and all landowners, miscellaneous individuals, and environmental groups who provided scoping comments and/or comments on the draft EIS/EIR or asked to remain on the mailing list.

KRGT held 14 public open houses in communities along the pipeline route to allow interested parties an opportunity to learn about the project and comment on issues and concerns. The FERC, the CSLC, and the BLM held six public scoping meetings in the project area to provide property owners, municipalities, counties, special interest groups, and state and Federal regulatory agencies an opportunity to comment on the project. Five additional public meetings were held in the project area to receive comments on the draft EIS/EIR. The dates and locations of the meetings were published in local area newspapers and included in the NOI/NOP and Notice of Availability/Completion of the draft EIS/EIR. Section 1.3 further describes the public notification and participation process. Section 4.10.5 describes contacts with Native American tribes that traditionally occupied, or currently occupy, the project area.

TABLE 4.9.8-1

Environmental Justice Statistics for the Kern River 2003 Expansion Project

State/County	Racial/Ethnic Group, 2000 (percent)							Persons of Hispanic or Latino Origin a/	Households with Public Assistance Income (1990) (percent)	Median Family Income (1989)	Persons Below Poverty (1997) (percent)
	White	Black	Native American and Alaskan Native Persons	Asian	Native Hawaiian and Other Pacific Islander	Persons Reporting Some Other Race	Persons Reporting Two or More Races				
WYOMING	92.1	0.8	2.3	0.6	0.1	2.5	1.8	6.4	5.5	$32,216	15.3
Lincoln	97.1	0.1	0.6	0.2	0.1	0.7	1.2	2.2	4.4	$31,386	12.3
Uinta	94.3	0.1	0.9	0.3	0.1	2.9	1.5	5.3	5.3	$37,058	10.3
UTAH	89.2	0.8	1.3	1.7	0.7	4.2	2.1	9.0	5.5	$33,246	10.0
Summit	91.8	0.2	0.3	1.0	<0.1	5.4	1.2	8.1	3.3	$40,162	5.5
Morgan	98.1	<0.1	0.2	0.2	0.0	0.4	1.1	1.4	2.8	$36,105	5.0
Salt Lake	86.3	1.1	0.9	2.6	1.2	5.4	2.6	11.9	5.4	$34,699	9.1
Utah	92.4	0.3	0.6	1.1	0.6	3.2	1.9	7.0	5.2	$30,536	10.3
Juab	96.6	0.1	1.0	0.3	<0.1	0.9	1.0	2.6	6.4	$27,342	11.0
Millard	93.9	0.1	1.3	0.5	0.2	2.8	1.2	7.2	6.9	$30,342	14.2
Beaver	93.2	0.3	0.9	0.6	0.1	3.1	1.8	5.5	5.2	$25,000	12.2
Iron	93.0	0.4	2.2	0.7	0.3	1.8	1.7	4.1	4.4	$27,283	15.7
Washington	93.6	0.2	1.5	0.4	0.4	2.2	1.6	5.2	5.6	$27,690	12.7
NEVADA	75.2	6.8	1.3	4.5	0.4	8.0	3.8	19.7	4.7	$35,837	10.7
Lincoln	91.5	1.8	1.8	0.3	<0.1	2.7	1.9	5.3	7.4	$26,892	14.8
Clark	71.6	9.1	0.8	5.3	0.5	8.6	4.2	22.0	5.1	$35,172	11.1
CALIFORNIA	59.5	6.7	1.0	10.9	0.3	16.8	4.7	32.4	9.4	$40,559	16.0
San Bernardino	58.9	9.1	1.2	4.7	0.3	20.8	5.0	39.2	10.7	$36,977	17.9
Kern	61.6	6.0	1.5	3.4	0.1	23.2	4.1	38.4	13.1	$31,714	21.0

a/ People who identify their origin as Spanish, Hispanic, or Latino may be of any race. Thus, the percent Hispanic should not be added to percentages for racial categories.

Source: U.S. Department of Commerce, Bureau of the Census, 1990 Census of Population and Housing, 2000 Census of Population and Housing (www.census.gov).

For this project, KRGT was required to identify and submit site-specific plans for all residences within 50 feet of the construction work area. The site-specific plans were required to identify special construction procedures, techniques, and/or specific mitigation measures to minimize impact on these residences, regardless of the income or minority status of the resident. From this information, the pipeline route was analyzed with respect to how close in feet the proposed right-of-way is to a residence and other existing constraints that may affect construction and the safety and welfare of the residents during construction.

With the implementation of KRGT's proposed mitigation measures, construction and operation of the project would not result in a significant impact on urban or residential areas. In addition, no disproportionately high and adverse human health or environmental effects on minority and low-income communities or Native American groups have been identified. Furthermore, project construction would provide some short-term job opportunities. The only long-term socioeconomic effect of the project is likely to be beneficial, based on the increase in tax revenue that would accrue to the counties where the facilities are located.

4.10 CULTURAL RESOURCES

Significance Criteria

Impact on cultural resources would be considered significant if project construction or operation would result in an unresolvable adverse effect on the characteristics that contribute to the eligibility of a historic or prehistoric property for the NRHP (for Federal undertakings) or the California Register of Historical Resources (CRHR) (for purposes of the CEQA). Under the CEQA, impact on some cultural resources besides those listed or eligible for listing on the CRHR must also be considered. Adverse effects may include, but are not limited to, the following:

- physical destruction of or damage to all or part of the property;
- change in the character of the property's use or of physical features within a property's setting that contribute to its historic significance (*e.g.*, by isolating the property from its setting); and
- introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features.

In evaluating cultural resources, several criteria are considered. First, significant cultural resources (as defined for Federal undertakings) include those prehistoric and historic sites, districts, buildings, structures, and objects, as well as properties with traditional religious or cultural importance to Native Americans or other groups, that are listed, or are eligible for listing, on the NRHP, according to the criteria outlined in Title 36 CFR Part 60.4. Second, cultural resources that do not meet the NRHP criteria but may qualify as a unique characteristic of an area are considered under NEPA. Historic properties (*i.e.*, NRHP-listed or eligible cultural resources) must possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the following NRHP criteria:

- association with events that have made significant contributions to the broad patterns of the history of the United States;
- association with the lives of people significant in United States history;
- embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction; and
- has yielded, or is likely to yield, information important in prehistory or history.

In California, resources that may qualify for the CRHR, as well as resources that are considered significant but may not qualify, are considered under the CEQA.

4.10.1 Regulatory Requirements

Federal

The FERC, the BLM, and other Federal land management agencies are responsible for complying with Section 106 of the National Historic Preservation Act (NHPA), which requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. The procedures for complying with Section 106

are outlined in the ACHP's regulations (Title 36 CFR Part 800). The effects of the project on properties of traditional religious and cultural importance to Native Americans must also be considered in accordance with Section 101 (d)(6) of the NHPA and the American Indian Religious Freedom Act. In addition to these responsibilities, Federal land management agencies must consider Native American religious and cultural concerns for the portion of the project crossing Federal lands in accordance with the Archaeological Resource Protection Act, the Native American Graves Protection and Repatriation Act, and Sacred Sites Executive Order 13007.

As the lead Federal agency, the FERC initiated a Programmatic Agreement (PA) for the Kern River 2003 Expansion Project to establish procedures for compliance with Section 106 of the NHPA (see appendix T). The consulting parties are the BLM; FS, Dixie National Forest; U.S. Department of the Army, Fort Irwin NTC; the Wyoming, Utah, Nevada, and California State Historic Preservation Offices (SHPO); the Moapa Band of Paiute Indian Tribe (Moapa Band); KRGT; and the ACHP. The BLM California State Office represents the BLM State Offices in Wyoming, Utah, and Nevada. The PA was executed on January 17, 2002 (the Moapa Band did not sign the PA).

As the lead Federal agency, the FERC is responsible for officially determining NRHP eligibility and project effects in consultation with the consulting parties. If, after completing review, the agencies and the SHPOs agree that cultural resources found during surveys are ineligible for the NRHP, no further consideration of these resources would be required.

If KRGT's surveys are incomplete and do not cover all of the area of potential effects (APE) (defined as the geographic area or areas in which an undertaking may directly or indirectly cause alterations in the character or use of historic properties), additional survey would need to be conducted. If additional cultural resources are identified in areas that have not been surveyed within the APE, the FERC and other agencies would need to assess the significance of these resources in accordance with the provisions of the PA.

CEQA

The CSLC is responsible for complying with all provisions of the CEQA covering cultural resources, including CEQA Sections 21083.2 and 21084.1, and Section 15064.5 of the Guidelines for Implementing CEQA. Cultural resources include prehistoric and historic-period archaeological sites, districts, and objects; standing historic structures, buildings, districts, and objects; and locations of important historic events or sites of traditional/cultural importance. CEQA Guidelines Section 15064.5 indicates a project may have a significant environmental effect if it causes "substantial adverse change" in the significance of an historic resource as defined in Section 15064.5(a)(1) through (a)(4). Under the CEQA, the CSLC is also required to take into account the effect on properties eligible for listing on the CRHR or that meet the definition of a unique archaeological resource in CEQA Section 21083.2.

Under the CEQA, archaeological resources are sometimes treated differently than "historical resources." Thus, it is important to first determine whether certain archaeological sites are "historical resources" for purposes of the CEQA. An archaeological resource is considered an historic resource when it is listed, or determined eligible for listing, on the CRHR, included in a local register of historical resources, or identified as significant in an historical resource survey. For archaeological resources that are not "historical resources," it must then be determined if they are "unique" archaeological resources according to Public Resources Code 21083.2 (g). The distinction may be important because mitigation measures sometimes differ for archaeological and historical resources.

4.10.2 Background

As part of its application, KRGT provided the FERC with its inventory reports and initial consultations with the BLM, the SHPOs, and Native American groups. KRGT's inventory reports document the results of literature reviews, site file searches, and cultural resources inventories in Wyoming, Utah, Nevada, and California, and include KRGT's Unanticipated Discovery Plans and Previous Ethnographic Investigations reports. KRGT's initial consultation letters described the project and requested input on any known cultural sites that could be affected.

4.10.3 Results of Records Research

A records search identified over 400 previous cultural resources investigations that cross the proposed pipeline route, including archaeological investigations for the original KRGT pipeline project. The majority of the remaining surveys were conducted for energy projects such as powerline or other pipeline corridors.

A records search of a 1-mile corridor centered over the proposed pipeline centerline identified over 900 archaeological sites and isolates that had been previously recorded. Three hundred eighty-four of these were located within the APE. In accordance with the PA, previously recorded cultural resources that are located within the APE were revisited. The results of additional survey of previously recorded sites is discussed below.

4.10.4 Results of Cultural Resources Survey

KRGT's cultural resources consultants performed field surveys consistent with the methodologies provided in the PA. Survey reports were submitted to the FERC, the CSLC, the BLM and other Federal land management agencies, and the SHPOs that included NRHP eligibility and preliminary mitigation recommendations. As provided for in the PA, the FERC, in consultation with the BLM and the FS, has provided determinations of eligibility to the SHPOs. All of the SHPOs have provided their eligibility reviews. The mitigation recommendations listed below were provided by KRGT's consultants and are currently under agency review in accordance with the PA. CRHR eligibility recommendations for cultural resources located in California were provided by the CSLC.

Wyoming

A 200-foot-wide survey corridor centered on the proposed pipeline centerline, including the Anschutz Lateral, was inventoried in Wyoming. Survey was also completed along access roads, at yards, and at route deviations. The eligibility determinations below are based on the FERC staff's review of the cultural resources survey results in consultation with the BLM. The Wyoming SHPO concurred with all but one of the determinations. The SHPO requested that one site recommended as eligible be considered unevaluated.

The field inventory resulted in the identification of 14 new cultural resources and 12 new isolated finds along the proposed route. Of these, 13 cultural resources and 12 isolated finds were recommended not eligible for listing on the NRHP. The remaining site, a prehistoric camp site, has been recommended as eligible for listing on the NRHP, but would be avoided during construction. No new cultural resources were identified along the Anschutz Lateral route.

Sixty-one previously recorded cultural resources were revisited. Thirty-four of these were recommended as not eligible for listing on the NRHP or were not relocated during survey. The remaining 27 cultural resources were recommended as eligible for listing on the NRHP. However, the portions of 16

of the eligible sites within the APE are non-contributing to their NRHP eligibility, and no further work is required. Four of the eligible sites would be avoided or are outside the APE. One resource is a historic-period linear site crossed by the pipeline route several times, with one segment within the APE and seven segments that are non-contributing elements to NRHP eligibility. Documentation is recommended at the segment of the site that would be affected. The remaining six sites within the APE include four historic-period sites (one ditch, one wooden water line, one railroad, and the Mormon Pioneer Trail), one prehistoric artifact scatter with associated features, and one multi-component site consisting of a prehistoric camp site and historic-period debris. Data recovery is recommended at the multi-component site. Avoidance during construction is recommended at the ditch, the wooden water line, and the railroad by boring underneath them, or documentation is recommended if boring is not possible. Recontouring and revegetation are recommended after construction at the Mormon Pioneer Trail. The treatment at the prehistoric site is being developed.

No new cultural resources were identified during inventory of a 100-foot-wide survey corridor along the powerline right-of-way to the Coyote Creek Compressor Station site. The Coyote Creek Compressor Station site was previously inventoried in 1992, and no further work was recommended at this location.

A viewshed analysis was completed at two National Historic Trails (Oregon and Mormon-California) and seven other historic-period sites. It was recommended that construction of the proposed pipeline would have no adverse effect on the trails due to previous disturbance and the encroachment of nearby developments. It was also recommended that construction across two historic-period sites be completed by boring under them. The recommendations for the five remaining sites include post-construction recontouring and reseeding to the original preconstruction conditions.

Utah

A 100-foot-wide survey corridor centered on the proposed pipeline centerline, as well as temporary extra workspaces, access roads, and yards, were inventoried in Utah. A portion of the Salt Lake Loop was previously inventoried and not resurveyed. Inventory was also completed at the Salt Lake Compressor Station site, its associated access road, and powerline right-of-way. A 100-foot-wide survey corridor was inventoried along both the access road and powerline right-of-way leading to the compressor station. The eligibility determinations below are based on the FERC staff's review of the cultural resources survey results in consultation with the BLM and the FS. The Utah SHPO concurred with the majority of the determinations, but recommended an additional 29 sites as eligible and 1 site (previously determined eligible) as not eligible.

Inventory of the proposed route, access roads, and yards in Utah resulted in the identification of 63 new cultural resources and 89 new isolated finds. The 89 isolates and 51 of the cultural resources were recommended as not eligible for listing on the NRHP. Five historic-period sites and seven prehistoric sites were recommended as eligible for listing on the NRHP. Inventory was also completed along the route of the Mineral Mountains/Pinnacle Pass Alternative, resulting in the identification of 18 new cultural resources and 35 new isolated finds (see section 3.3.3).

A viewshed analysis was completed at significant historic-period sites along the proposed route. One of these is the NRHP-listed Mountain Meadows Historic Site, crossed by the Fillmore Loop (see section 4.8.6.1). In most cases, the visual settings in the vicinities of the sites have already been compromised by previous developments. It was recommended that no further cultural resources survey work is required and that the original vegetation and contours should be restored after construction in these areas.

One hundred ninety-seven cultural resources located within the work area were revisited. Sixty-two of these were recommended as not eligible. Of these, 24 had been previously recommended as or determined to be eligible, but the eligibility recommendation changed based on the current survey results. Two cultural resources are listed on the NRHP, including a prehistoric lithic procurement site and the historic-period Mountain Meadows massacre site. The remaining 133 cultural resources were recommended as eligible. The majority of these had been previously recommended as or determined to be eligible, and the current survey results supported that recommendation. Four of the cultural resources that were previously determined to be eligible (1 prehistoric and 3 historic-period sites) were not reevaluated due to denied access by the landowner. For the purposes of this document, these four are considered to retain their eligibility status. Of the remaining 129 cultural resources, 26 are historic-period sites, primarily railroads, canals, and homesteads; 95 are prehistoric sites, representing locations of prehistoric occupation or use activities; and 8 include both historic and prehistoric components. Data recovery is recommended at 20 sites that were selected to provide a range of data from all the major regional archaeological units, including Clovis, Early Archaic, Late Archaic, Archaic, Fremont, Virgin Anasazi, Late Prehistoric, Protohistoric, unknown, and Euroamerican. Additional analysis of artifacts already recovered is recommended for many of the remaining sites.

Nevada

A 200-foot-wide survey corridor centered on the proposed pipeline centerline was inventoried in Nevada. Survey was also completed along access roads and at yards. The eligibility determinations below are based on the FERC staff's review of the cultural resources survey results in consultation with the BLM. The Nevada SHPO concurred with the eligibility determinations, with some clarifications. The SHPO also requested information regarding sites of religious and cultural significance.

Twenty-three new cultural resources and 22 isolated finds were identified by the field inventory. Two of these cultural resources, an historic-period water tank and a railroad, are recommended as eligible for listing on the NRHP. Documentation of the railroad is recommended before construction, and documentation and construction monitoring is recommended at the water tank. The remaining 21 cultural resources and the 22 isolated finds were recommended as not eligible for listing on the NRHP.

Twenty-four previously recorded cultural resources that are within or near the survey corridor, access roads, or yards were also revisited. One previously recorded cultural resource, the Old Spanish Trail/Mormon Road is listed on the NRHP, and one additional cultural resource, a prehistoric obsidian source that had previously been determined to be not eligible for listing on the NRHP, was recommended as eligible for listing based on the current survey results. Installation of the pipeline by boring under the Old Spanish Trail/Mormon Road, and monitoring during construction is recommended. In addition, documentation of the road before construction is recommended. No further work is recommended at the obsidian source site because the portion within the project APE does not contain cultural materials. The remaining 22 cultural resources were either recommended as not eligible or have been destroyed by previous activities. Two of these not eligible sites had previously been determined to be eligible, but the current survey results no longer support that recommendation.

Inventory was also completed at the Dry Lake Compressor Station site and the powerline right-of-way to the compressor station site, and no new or previously identified sites were identified.

California

A 200-foot-wide survey corridor centered on the proposed centerline was inventoried at all areas where the proposed pipeline route deviates from the original KRGT pipeline or where temporary extra workspaces are located outside the previously inventoried survey corridor. Survey was also completed at access roads and yards. The eligibility determinations below are based on the FERC staff's review of the cultural resources survey results in consultation with the BLM. The California SHPO has either concurred with, or deferred to, these determinations. CRHR eligibility recommendations for cultural resources located in California were provided by the CSLC.

The field inventory in California located six new cultural resources and one isolated find. Two historic-period sites, an airport and a railroad industrial complex, are recommended as eligible for listing on the NRHP. The remaining four cultural resources and one isolated find were recommended as not eligible for listing. Survey was also completed along the Edwards AFB Alternative, resulting in the identification of 4 new cultural resources and reevaluation of 13 previously recorded sites (see section 3.3.6).

Seventy-six previously recorded cultural resources located within the survey corridor and yards were revisited. Of these, 52 were recommended as not eligible for listing, were not relocated during survey, or had been destroyed. One site, a prehistoric rock cairn (Silver Lake Rock Cairn Site), is listed on the NRHP, and the remaining 23 are eligible for listing. The majority of the sites recommended as eligible based on the current survey results had been previously determined to be eligible. Of the 23 cultural resources recommended as eligible, 5 are historic-period sites including 3 railroads, 1 road, and 1 transmission line; 16 are prehistoric sites representing locations of prehistoric occupation or use activities; and the remaining 2 sites include both prehistoric and historic components. Of the five historic-period sites, nomination to the NRHP and a finding of no adverse effect is recommended for one of the railroads, and a finding of no adverse effect is recommended for the remaining four sites. Data recovery is recommended at one of the multi-component sites, and a finding of no adverse effect is recommended for the other multi-component site. Of the 16 prehistoric sites, data recovery is recommended at 6 sites, data recovery and nomination to the NRHP is recommended at 1 site, nomination to the NRHP and mapping and additional documentation are recommended at 2 sites, nomination to the NRHP and construction monitoring are recommended at 1 site, mapping and additional documentation are recommended at 4 sites, monitoring is recommended at 1 site, and a finding of no effect is recommended for 1 site.

CEQA

Cultural resources in California that are eligible for listing on the NRHP are also eligible for listing on the CRHR. In addition, sites that are not eligible for listing on the NRHP may be eligible for listing on the CRHR. The CSLC has reviewed cultural resources that are recommended as not eligible for listing on the NRHP to determine if they are eligible for listing on the CRHR. The CSLC has determined that one site in California that was recommended as not eligible for the NRHP is eligible for the CRHR for CEQA purposes. This site is a railroad adjacent to a contractor/pipe yard and offloading site. The railroad was originally completed in 1910 by the Southern Pacific to supply materials for construction of the Los Angeles Aqueduct. The railroad would be used to transport pipe for the project to the yard. A finding of no adverse effect is recommended because the use of the railroad during the project would be consistent with its existing use. The remaining sites in California that were recommended as not eligible for the NRHP are also recommended as not eligible for the CRHR.

Archaeological resources in California that are not eligible to the CRHR may yet be classified as "unique archaeological resources" if they meet specified criteria. No sites met the specified criteria.

The CEQA Guidelines, Section 15064.5(b)(5), require the CEQA lead agency to consult with the SHPO concerning historical resources specified in Public Resources Code Section 5024.5 that are on state-owned land. Of the four sites wholly or partially on state land, three (Route 66; the Atchison, Topeka, and Santa Fe Railroad; and a transmission line) are subject to the consultation requirement because they are eligible for the NRHP and they are "structures." The fourth site, consisting of prehistoric rock features, is not eligible for the NRHP nor is it a structure. No adverse effects would occur to any of the three sites because the pipeline would be installed underneath Route 66 and the railroad by boring, and construction would avoid the transmission line towers. The CSLC has begun consultation with the SHPO for these sites.

The CSLC has determined that the mitigation recommendations provided above for the remaining cultural resources recommended as eligible for listing on the CRHR (*i.e.*, those recommended as eligible for listing on the NRHP) are adequate for the purposes of the CEQA. The railroads crossed by the pipeline would not be adversely affected during construction because the pipeline would be installed underneath them by boring. The multi-component site and seven of the prehistoric sites would be destroyed by construction because rerouting of the pipeline is not feasible. Data recovery conducted according to an approved data recovery plan is recommended at these sites. Data recovery would be completed before construction begins and the reports deposited with the California Historical Resources Regional Information Center. The nine remaining prehistoric sites would be destroyed during construction, but data recovery is not recommended at them because previous evaluations have adequately recovered their scientifically significant information.

4.10.5 Native American Consultations

In preparation for Native American consultations regarding the proposed project, a summary report of previous ethnographic studies completed in the vicinity of the project was prepared. The report summarized previous Native American contacts conducted for other projects, and listed known ethnographic sites or traditional cultural properties (TCPs) within a 1-mile corridor centered over the proposed pipeline centerline. Based on the research, there have been seven previous studies in the area that have included consultations and meetings with Native American groups as well as cultural resources surveys. These studies identified 103 ethnographic locations or TCPs within the KRGT study corridor.

The BLM California State Office has been designated the lead agency for conducting and overseeing Native American consultations. Using the summary of ethnographic studies, the BLM State Offices in Wyoming, Utah, Nevada, and California prepared a list of Native American groups that should be contacted regarding the proposed project to request information on potential cultural resources concerns. On July 20, 2001, the BLM California State Office sent initial consultation letters to the identified Native American groups. The initial consultation letter included a map of the project area and a copy of the ethnographic studies report. KRGT is also assisting with consultations, as necessary, with the appropriate federally recognized Indian tribes and interested Native American groups to identify Native American religious sites, TCPs, and other cultural resources issues of concern. Table 4.10.5-1 (page 4-236) lists the Native American groups that have been contacted and summarizes concerns they have raised.

The Shoshone-Bannock Tribes provided comments on the draft EIS/EIR requesting that impacts on Native American Treaty Rights be addressed. The Agency Staffs are not aware of any Native American Treaty Rights issues or violations that would result from the proposed project.

TABLE 4.10.5-1

Native American Contacts

Group Contacted	Date of Response	Comment
Aha Ma Kav Cultural Society	8/7/01	Requested additional information on ground disturbance; requested records search and inventory survey results; indicated written comments would be provided on the initial consultation letter.
Chemehuevi Indian Tribe		Requested meeting.
Eastern Shoshone Spiritual Leader	a/	
Colorado River Indian Tribes	8/23/01	Expressed concerns about "land spirituality purposes;" requested notification of unanticipated discoveries during construction; requested meeting and field visit.
Confederated Tribes of Goshute Reservation	8/21/01	Indicated the proposed project would be discussed at the next Council meeting.
Fort Mojave Indian Tribe		Indicated no further consultation is necessary.
Kaibab Paiute Tribe	a/	
Kanosh Band of the Paiute Indian Tribe	9/6/01	Requested additional information and a meeting and field visit to the project area.
Kawaiisu Tribe individual (1)		KRGT resent initial consultation package to a corrected address on 9/7/01.
Kawaiisu Tribe individual (2)	8/16/01	Indicated that they had reviewed the materials and did not require further consultation on the project; requested notification of unanticipated discovery of any burials during construction.
Kawaiisu Tribe individual (3)	8/16/01	Indicated that they had no comments on the project; requested notification of unanticipated discoveries during construction.
Koosharem Band of the Paiute Indian Tribe	a/	
Las Vegas Paiute Colony	8/24/01	Indicated the Tribe would not require further consultation regarding the project.
Moapa Band of Paiutes	9/7/01	Requested a field visit prior to responding to the initial consultation letter.
Yokut Indian Tribe members	a/	
Native American Heritage Commission	9/7/01	Indicated that the Native American Heritage Commission would not require further consultation.
Native American Heritage Preservation Council of Kern County (Kitanemuk-Yowlumni Tribe)	8/23/01	Provided locations of high concern due to potential ceremonial and burial sites; requested additional maps for review.
	3/14/02	Requested a meeting with project representatives.
Northern Arapahoe Business Council	a/	
Northwestern Band of Shoshone Nation	2/26/02	Requested that they be informed of any unanticipated discoveries during construction.
Pahrump Paiute Tribe	a/	

TABLE 4.10.5-1

Native American Contacts

Group Contacted	Date of Response	Comment
Paiute Indian Tribe of Utah	1/22/02	Met with project and agency representatives to discuss the project, the draft EIS/EIR, and the draft cultural resources treatment plan. Requested additional copies of the draft treatment plan (provided on March 4, 2002).
	3/6/02	Presented with cultural resource mitigation and pipeline construction information by project and agency representatives.
San Manuel Band of Mission Indians		Indicated no further consultation is necessary.
San Juan Southern Paiute Council	a/	
Santa Rosa Rancheria (Yokut Indian Tribe)	a/	
Shivwits Band of Paiute Indians		Indicated no further consultation is necessary.
Shoshone Business Council	a/	
Shoshone-Bannock Tribe	2/22/02	Met with project and agency representatives to discuss the draft EIS/EIR and the draft cultural resources treatment plan. Indicated that they would review the documents, but would not be able to meet the deadlines. Requested funds from KRGT for a reviewer selected by the tribe who could provide written comments on both documents. Indicated that the tribe would consider a field visit after the reviews were complete.
	3/14/02	Project representatives contacted the Tribe to ask if a reviewer had been selected. At that time, no one had been selected.
	4/12/02	Expressed general concern about trust responsibility, Native American Treaty Rights, and government to government consultation.
Shoshone Tribal Attorney	a/	
Skull Valley Band of Paiute Indians	3/1/02	Requested copies of the initial consultation letter and subsequent correspondence (provided on March 4, 2002).
Tule River Indian Reservation (Yokut Indian Tribe)	8/23/01	Indicated that they would discuss the proposed project with the Tribe's archaeology team.
Uinta and Ouray Ute Tribal Business Committee	8/22/01	Requested additional maps, reports, and information on sites identified in the reports; requested meeting and field visit.
	3/5/02	Requested a field visit with project and agency representatives on April 29 and 30, 2002.
Eastern Shoshone Spiritual Leader	a/	

a/ To date, no response has been received.

4.10.6 Impacts and Mitigation

Project impacts or effects include not only the physical disturbance of a historic property, but may also include the introduction, removal, or alteration of various visual or auditory elements, which could alter the traditional setting or ambience of the property. In accordance with the provisions outlined in the PA, the FERC and the consulting parties would determine eligibility of and effects on historic properties. Impacts on sites determined non-significant per NRHP eligibility are not considered effects, and no further treatment or consideration is accorded these sites before construction and related project activities. If a historic property listed on or eligible for listing on the NRHP would be affected, mitigation will be proposed. Mitigation may include, but not be limited to, one or more of the following measures: 1) avoidance through the use of realignment of the pipeline route, relocation of temporary extra workspaces, or changes in the construction and/or operational design; 2) data recovery, which may include the systematic professional excavation of an archaeological site or the preparation of photographic and/or measured drawings documenting standing structures; and 3) the use of landscaping or other techniques that would minimize or eliminate effects on the historic setting or ambience of standing structures.

KRGT has completed cultural resources survey in California and Nevada. Inventories of existing two-track access roads not requiring blading in Wyoming and reevaluation of sites where access was denied in Utah are not complete. Once cultural resources surveys and evaluations are completed, the FERC will consult with the consulting parties for these aspects of the project. As stipulated in the PA, the FERC, in consultation with the BLM and the FS, has provided determinations of eligibility to the SHPOs. All of the SHPOs have responded. If any historic property would be adversely affected, KRGT is required by the PA to prepare treatment plans indicating how impact would be reduced or mitigated. Once a treatment plan is approved by the consulting parties pursuant to the PA, KRGT would implement the specified treatment measure(s) before receiving notice to proceed with project construction in any given area. Additional consultation with Native American groups is also required to identify and address any concerns these groups may have. As the PA provides for the resolution of adverse effects (Title 36 CFR Part 800.14(b)), there would be no unresolvable adverse effects for the project. Therefore, implementation of the PA would ensure that project-related adverse effects would be reduced to less than significant levels for the purposes of Section 106 and NEPA compliance.

Generally under the CEQA, a project that follows the Secretary of Interior's Standards shall be considered as mitigated to a level of less than a significant impact on the historical resources. However, in some cases, documentation as mitigation is not sufficient to reduce the impact to a level that is less than significant (CEQA Guidelines Section 15126.4(b)(2)). Thus, documentation of an "historical resource" may not necessarily mitigate the effects "to a point where clearly no significant effect on the environment would occur" as it does under Section 106. Archaeological sites that are important for their data alone can usually be mitigated through data recovery (excavation).

To ensure that the FERC's and the CSLC's responsibilities are met, **the Agency Staffs recommend the following measure:**

- **KRGT shall defer construction and use of its facilities and any staging, storage, or temporary work areas and new or to-be-improved access roads <u>until</u>:**

  a. KRGT prepares and files with the FERC and the CSLC (for the California portion of the project), and submits to the consulting parties, as appropriate, any outstanding cultural resources reports and necessary treatment plans;

b. KRGT files with the FERC and the CSLC (for the California portion of the project) the comments of the consulting parties on all cultural resources reports and plans submitted for review;

c. the CSLC reviews and approves all cultural resources reports and plans prepared for the California portion of the project and notifies KRGT in writing that construction may proceed; and

d. the Director of OEP reviews and approves all cultural resources reports and plans and notifies KRGT in writing that construction may proceed.

All material filed with the FERC and the CSLC containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE."

4.11 AIR QUALITY AND NOISE

4.11.1 Air Quality

Significance Criteria

Adverse impact on air quality would be considered significant and would require additional mitigation if project construction or operation would:

- violate or interfere with attainment of Federal or state air quality standards due to equipment emissions or fugitive dust.

4.11.1.1 Attainment Status

The ambient air quality in the United States is protected in the Clean Air Act (CAA) and its amendments as well as by other Federal, state, and local regulations. The EPA has developed National Ambient Air Quality Standards (NAAQS) for certain criteria pollutants. These criteria pollutants are: nitrogen dioxide (NO_2), SO_2, PM_{10}, carbon monoxide (CO), ozone (O_3), and lead (Pb). The primary pollutants emitted by natural gas combustion units are NO_x, which include NO_2 and nitrogen oxide (NO), and CO. The NAAQS for NO_2 is 100 micrograms per cubic meter ($\mu g/m^3$) or 0.05 part per million (ppm) on an annual average. The NAAQS for CO is 10,000 $\mu g/m^3$ or 9 ppm for an 8-hour averaging period and 40,000 $\mu g/m^3$ or 35 ppm for a 1-hour averaging period. In addition to the NAAQS, state and local ambient air quality standards (AAQS) have been established for criteria pollutants.

Ambient air quality is also protected by the EPA's Prevention of Significant Deterioration (PSD) regulations. These regulations are intended to preserve the existing air quality in areas where pollutant levels are below the NAAQS. Under the PSD regulations, areas of the United States are separated into two categories: Class I and Class II. Class I areas are public lands, such as national parks, wilderness areas, and memorial parks that have special protection under the CAA. These areas are more stringently protected than Class II areas and not only limit pollutant concentrations but also include standards for visibility and acidic deposition. The remaining portions of the United States are classified as Class II areas.

The Kern River 2003 Expansion Project would include construction of three new compressor stations and modification of six existing compressor stations. Pipeline construction would extend for about 717.5 miles from Opal, Wyoming to Mojave, California. Modifications at the six existing compressor stations would include the installation of new turbines at five stations and the restaging of compressors at three stations. All of the new turbines would be manufactured by Solar Turbines Incorporated (Solar). The fuel for all turbines, generators, and boilers would be natural gas, except for the electric compressor unit at the Daggett Compressor Station. Because the Daggett Compressor Station is electric powered, the Daggett Compressor Station is not subject to any of the air quality regulations discussed in this section. Table 4.11.1-1 (page 4-241) summarizes the existing and proposed compression capacity, proposed equipment modification, location, and air regulating authority for the nine compressor stations.

TABLE 4.11.1-1

Summary of Existing and Proposed Compression Capacity and Equipment Modifications for the Kern River 2003 Expansion Project

State/Facility	Modification	Existing Horsepower (ISO)	New Horsepower (ISO) a/	Milepost	County	Air Regulating Authority
WYOMING						
Muddy Creek	Uprate the existing Solar Mars 90 turbine to a Solar Mars 100 turbine, and install two Solar Mars 100 turbines, one backup generator, and one boiler	43,000	32,000	0.0	Lincoln	WDEQ, Air Quality Division
Coyote Creek b/	Install one Solar Mars 100 turbine, one backup generator, and one boiler	0	15,000	60.1	Uinta	WDEQ, Air Quality Division
UTAH						
Salt Lake b/	Install two Solar Mars 100 turbines, one backup generator, and one boiler	0	30,000	132.0	Salt Lake	UDEQ, Air Quality Division
Elberta	Remove two existing Solar Taurus 60 turbines, and install one Solar Mars 100 turbine, one backup generator, and one boiler	14,300	700	191.6	Utah	UDEQ, Air Quality Division
Fillmore	Install one Solar Mars 100 turbine	15,000	15,000	276.7	Millard	UDEQ, Air Quality Division
Veyo	Install two Solar Mars 100 turbines, one backup generator, and one boiler, and restage the existing Solar Mars 100 turbine	15,000	30,000	406.5	Washington	UDEQ, Air Quality Division
NEVADA						
Dry Lake b/	Install one Solar Mars 100 turbine, one backup generator, and one boiler	0	15,000	500.1	Clark	Clark County Health District
Goodsprings	Install two Solar Mars 100 turbines and restage the existing Solar Mars 100 turbine	15,000	30,000	565.9	Clark	Clark County Health District
CALIFORNIA						
Daggett	Restage and derate the existing electric motor-driven compressor	8,000	- 4,000	681.9	San Bernardino	Mojave Desert Air Quality Management District
Total			163,700			

a/ Incremental increase/decrease with the addition of the Kern River 2003 Expansion Project facilities.

b/ New compressor station.

KRGT's new and existing compressor stations are located in Class II areas in several different air quality control regions. The regulating authority in these regions is listed in table 4.11.1-1 (above). In these air quality control regions, the state and local AAQS standards applicable to the proposed compressor station modifications are at least as stringent as the NAAQS. The existing air quality in the vicinity of each compressor station differs. Areas in which the ambient pollutant concentrations are below the AAQS are classified as being in "attainment" of the AAQS. Areas designated as "unclassifiable" based on available data are presumed in "attainment" of the AAQS. Areas in which the ambient pollutant concentrations are above the AAQS are identified as being in "non-attainment" of the AAQS. Attainment classifications are

typically county and pollutant specific. The attainment status for each pollutant in the vicinity of each compressor station is listed in table 4.11.1-2 (below).

TABLE 4.11.1-2

Ambient Air Quality Classifications for the Compressor Stations Associated with the Kern River 2003 Expansion Project

Compressor Station	County, State	PM_{10}	SO_2	NO_2	CO	O_3
Muddy Creek	Lincoln, WY	A	A	A	A	A
Coyote Creek	Uinta, WY	A	A	A	A	A
Salt Lake	Salt Lake, UT	NA- Mod.	NA	A	M	M
Elberta	Utah, UT	NA- Mod.	A	A	A	A
Fillmore	Millard, UT	A	A	A	A	A
Veyo	Washington, UT	A	A	A	A	A
Dry Lake a/	Clark, NV	A	A	A	A	A
Goodsprings a/	Clark, NV	A	A	A	A	A
Daggett b/	San Bernardino, CA	NA- Mod.	A	A	A	NA- Sev.

a/ The areas surrounding the Dry Lake and Goodsprings Compressor Stations are in attainment for all pollutants. However, some areas of Clark County are classified as non-attainment for PM_{10} and CO. Additionally, the area surrounding the Goodsprings Compressor Station is a maintenance area for ozone.

b/ Despite the non-attainment status for PM_{10} and ozone in the vicinity of the Daggett Compressor Station, no air quality regulations apply to the operation of the station because the modified unit is electric powered and would not have any direct air emissions.

A = Attainment
NA = Non-attainment
M = Maintenance
NA-Mod. = Moderate Non-attainment
NA-Sev. = Severe Non-attainment

4.11.1.2 General Construction Impact and Mitigation

The proposed project would generate air emissions from temporary construction activities. The construction emissions would include equipment exhaust and fugitive dust. Construction activities, and hence construction emissions, would take place mainly during the hours of 7 a.m. to 7 p.m. each day for a total period of about 11 months, after which they would cease. Pipeline construction is a linear process where equipment does not stay at one location for an extended period of time as the project progresses. The average estimated PM_{10}, SO_2, NO_x, CO, and volatile organic compound (VOC) emissions from construction of the pipeline and compressor stations are shown in table 4.11.1-3 (page 4-243). In addition, the portion of the construction emissions that would occur in California are also listed in the table with the corresponding significance thresholds established by the Mojave Desert AQMD pursuant to the CEQA. Construction emission calculations are provided in appendix U.

TABLE 4.11.1-3

Potential Daily Construction Emissions Associated with the Kern River 2003 Expansion Project a/

Pollutant	Fugitive Dust from Expansion	Vehicle Emissions from Expansion	California Emissions b/	Significance Threshold
Particulate Matter	358	179	404	82
Sulfur Dioxide	0	167	43	137
Nitrogen Oxides	0	2,524	655	137
Volatile Organic Compounds	0	216	56	137
Carbon Monoxide	0	1,005	261	548

a/ All emissions are in units of pounds per day.

b/ Because 186.2 miles of the 717.5 miles of pipeline construction would take place in California, the California emissions were calculated by multiplying the total vehicle exhaust emissions by 0.259 (186.2 divided by 717.5) and adding the fugitive dust emissions.

As shown in table 4.11.1-3 (above), the construction emissions from the project would be above the significance threshold established by the Mojave Desert AQMD for all emissions except SO_2 and VOC. To reduce construction emissions, KRGT would implement emission control measures developed in consultation with local AQMDs. These measures include:

- properly maintaining and tuning equipment to manufacturers' specification;
- transporting workers from contractor yards to the construction site in buses provided by the contractor to reduce vehicle emissions;
- limiting the extent of a visible dust plume to less than 100 yards from the source;
- limiting opacity of fugitive dust to 20 percent or less;
- applying water and/or a non-toxic organic tackifier as a dust suppressant on non-paved roads and construction work areas, including topsoil piles, to limit excessive airborne particulates as a result of construction activities (see sections 4.2.3.1, 4.3.2.11, and 4.9.5);
- cleaning equipment traveling from a non-paved road to a paved road;
- installing construction entrances to prevent tracking of soil onto paved roads;
- cleaning soil tracked onto paved roads more than 50 feet from the point of origin within 1 hour of discovery and cleaning soil tracked onto paved roads less than 50 feet from the point of origin at the end of each work day;
- using tarps or other means to enclose material on haul trucks;
- limiting blast footprints to a size that can be stabilized after the blast;
- requiring the contractor to obtain approval from KRGT before blasting if wind speeds are 25 mph or greater; and

- keeping daily records of all dust control measures taken, including:

  a. the date, time, location, and dust control measures that were taken;

  b. inspection of all paved/non-paved intersections for trackouts with descriptions of conditions and any required clean-up; and

  c. weather conditions and wind speed and direction.

Before construction, KRGT would obtain a dust control permit from the Clark County Health District and submit a Dust Control Plan to the Mojave Desert AQMD and the UDEQ for approval.

Due to their temporary nature, emissions would not have a long-term impact on ambient air quality and KRGT's implementation of its proposed emission control measures as well as other measures specified by local AQMDs would reduce impacts associated with construction emissions to less than significant levels.

4.11.1.3 General Operational Impact and Mitigation

During operation, the air emissions from the compressor stations would include the following criteria pollutants: PM_{10}, SO_2, NO_x, CO, and VOC. The primary pollutants resulting from the combustion of natural gas are NO_x and CO. Because all emission units would burn pipeline quality natural gas, the quantity of PM_{10} and SO_2 emissions would be very small. The emissions expected from the operation of each compressor station are discussed in section 4.11.1.4.

Regulatory Requirements

Operational emissions from the new and modified KRGT compressor stations are regulated by the following regulations. The applicability of these regulations to each compressor station is discussed in section 4.11.1.4.

New Source Review (NSR) Program - The NSR program requires major stationary sources to obtain a permit prior to building new or modifying existing units if completion of the modification would result in a significant increase in the emissions of a regulated air pollutant. Those stationary sources located in an attainment area for the pollutant of interest are subject to the PSD regulations. Those sources located in a non-attainment area for the pollutant of interest are subject to the non-attainment new source review (NNSR) program established for that area.

Prevention of Significant Deterioration - The PSD program is outlined in the NSR program and applies to new major sources or major modifications at sources located in areas that do not exceed the NAAQS for any regulated criteria pollutants. A major source is classified as a stationary source with the potential to emit a regulated criteria pollutant at a rate of 100 tons per year (tpy) or more for sources listed in Title 40 CFR Part 52.21 (b)(1)(i)(a) or 250 tpy for sources not listed in Title 40 CFR Part 52.21 (b)(1)(i)(a). A major modification is defined under the PSD regulations as: 1) a modification resulting in a net emission increase greater than the PSD significant emission rates at an existing major source; or 2) a modification that constitutes a major source in itself. Because pipeline compressor stations are not listed in Title 40 CFR Part 52.21 (b)(1)(i)(a), the PSD applicability threshold is 250 tpy for any regulated criteria pollutant. An air pollution source that is subject to PSD review is required to: 1) submit a review of existing air quality; 2) use modeling analyses to demonstrate compliance with the NAAQS and applicable increments; 3) apply Best Available Control Technology (BACT); and 4) include an analysis of the general impact on the environment.

National Emission Standards for Hazardous Air Pollutants (NESHAPs) - NESHAPs have been established in Title 40 CFR Part 63 to control the emission of hazardous air pollutants (HAPs). The NESHAPs in Title 40 CFR Part 63 establish Maximum Achievable Control Technology (MACT) standards for specific source types. These MACT standards apply to major sources of HAPs. A major source is any source that has the potential to emit more than 10 tpy of any single HAP or 25 tpy of all HAPs in aggregate. Subpart HH (NESHAPs from Oil and Natural Gas Production Facilities) and Subpart HHH (NESHAPs from Natural Gas Transmission and Storage Facilities) of Title 40 CFR Part 63 are potentially applicable MACT standards for the KRGT facilities. Subpart YYYY, governing emissions from gas turbines, had a tentative proposal date of March 2002; however, no rule has been proposed to date.

New Source Performance Standards (NSPS) - Federal NSPS are outlined in Title 40 CFR Part 60. Federal NSPS requirements have been established for gas turbines in Title 40 CFR Part 60 Subpart GG. Subpart GG establishes emission standards for NO_x and SO_2 as well as testing and monitoring requirements. Federal NSPS requirements have been established for boilers in Subparts Da, Db, and Dc. No Federal NSPS have been established for natural gas-fired reciprocating engines.

NSPS Subpart GG would be applicable to the new and modified gas turbines at each compressor station. Subpart GG establishes a NO_x limit as well as an SO_2 limit. When calculated, the NSPS Subpart GG NO_x limit for Solar Mars 100 turbines is 194 ppm. The SO_2 limit can be met in one of two ways: by emitting less than 150 ppm of SO_2, or by burning fuel with less than 0.8 weight percent sulfur. The new and modified gas turbines associated with the proposed project would be equipped with low NO_x combustors (SoLoNO$_x$™ technology) to limit the NO_x emissions to 25 ppm. The natural gas that would be fired in the turbines would be pipeline quality natural gas, which would keep the sulfur content of the fuel below 0.8 weight percent. Therefore, the proposed turbines would meet the requirements of Subpart GG. The boilers at the compressor stations have or would have heat inputs of less than 10 million British thermal units; therefore, the NSPS for boilers do not apply.

Part 70 Operating Permit Program - Title V of the CAA requires an operating permit for any "major source" of air pollution. Operating permit requirements are outlined in Part 70 of the CFR Title 40. In Title 40 CFR Part 70, the EPA requires each state to develop an operating permit program. Part 70 also establishes criteria and hazardous air pollutant thresholds for defining "major sources" of air pollution. If a facility's potential emission of a regulated pollutant is greater than the "major source" threshold, the facility is a major source and must obtain a Part 70 operating permit. The "major source" threshold level for criteria pollutants is 100 tpy for sources located in attainment areas. The "major source" threshold level for HAPs is 10 tpy for any one HAP and 25 tpy for all HAPs in aggregate.

Conformity Analysis Requirements - A conformity analysis must be conducted if a Federal action would generate emissions that would exceed the conformity thresholds levels (*de minimis*) of the pollutants for which an air basin is in nonattainment. A conformity analysis must show that the emissions would conform to the state implementation plan (SIP) and would not worsen air quality in the air basin, which could be demonstrated through offsets, SIP provisions, or modeling. Emissions from sources subject to NSR or PSD requirements are exempt and are deemed to have conformed. The requirements for conformity analysis are in Title 40 CFR Parts 6, 51, and 93, and became effective March 15, 1994. If a conformity analysis is required, it will be prepared separate from the analyses for this EIS/EIR.

Best Available Control Technology - All new stationary sources in Wyoming, Utah, and Clark County, Nevada are required to implement BACT. Therefore, each new compressor station emission unit (except the Daggett Compressor Station, which has no new air emission units) must undergo a BACT evaluation.

Several NO_x control technologies were evaluated in the BACT analysis for the new compressor turbines. These controls included SCONO$_x$™, selective catalytic reduction, selective non-catalytic reduction, and dry SoLoNO$_x$™ burners. KRGT has selected dry SoLoNO$_x$™ burners, natural gas combustion, and proper operation and good combustion practices to minimize emissions from all turbines as BACT. A final ruling on the BACT evaluation for each turbine must be issued by the governing agency during the permitting process.

Once released into the atmosphere, NO_x may take one of several reaction pathways. Three of these pathways can result in significant adverse effects on air quality. One pathway for atmospheric NO_x is to form ground level ozone, which can have harmful effects on vegetation, wildlife, and humans. Another pathway for atmospheric NO_x is to form nitrates (particularly ammonium nitrates), which can noticeably reduce visibility. The final pathway of concern for ambient NO_x is deposition in soil, vegetation, and waterbodies resulting in effects similar to those of acid rain. KRGT's installation of low NO_x burners on new turbines would greatly limit the NO_x emissions from the compressor stations. As discussed below, many of the compressor stations are minor air emission sources and would not have significant impacts on air quality.

4.11.1.4 Site-specific Impact and Mitigation

Muddy Creek Compressor Station

KRGT proposes to install two new Solar Mars 100 turbines, one backup generator, and one boiler, and uprate the existing Mars 90 to a Mars 100 turbine at the existing Muddy Creek Compressor Station. All of the units at this compressor station would burn natural gas. The Mars 100 turbines are International Organization for Standardization (ISO) rated at 15,000 hp. The backup generator is ISO rated at 1,072 hp.

The Muddy Creek Compressor Station is located in Lincoln County, Wyoming, which is in attainment of the NAAQS for all pollutants. KRGT's station and Northwest's Muddy Creek Compressor Station are located on contiguous properties, under common control (Williams Pipeline Company), and have the same industrial grouping. Therefore, the emissions from Northwest's Muddy Creek Compressor Station must be included in determining applicability of the PSD regulations for KRGT's Muddy Creek Compressor Station. As such, the combined Muddy Creek Compressor Stations' potential to emit NO_x and CO is greater than 250 tpy each. An emission summary of the facilities is listed in table 4.11.1-4 (page 4-247).

The total HAP emissions from the Muddy Creek Compressor Station after the proposed modification are 3.1 tpy. Therefore, the compressor station would not be a major source of HAP emissions and, thus, would not be subject to NESHAP. The Muddy Creek Compressor Station is currently a major source and would therefore need to amend its current Part 70 operating permit.

The Muddy Creek Compressor Stations constitute a major source of NO_x and CO under the PSD regulations. Consequently, the KRGT Muddy Creek Compressor Station would be subject to PSD permitting if the proposed modifications result in a net emission increase greater than the significant emission rates. Table 4.11.1-4 (page 4-247) shows that the net NO_x and CO emission increases from the proposed modification would be greater than the PSD significant emission rates; therefore, the Muddy Creek Compressor Station would be subject to PSD review for NO_x and CO.

TABLE 4.11.1-4

Muddy Creek Compressor Station Criteria Pollutant Emission Summary and Applicability Thresholds

Unit	Pollutant									
	NO_x		CO		VOC		SO_2		PM_{10}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Two New Solar Mars 100 Turbines	17.22	75.46	20.98	91.88	6.00	26.31	0.58	2.58	1.14	5.01
Turbine Uprate	0.86	3.78	1.05	4.60	0.30	1.32	0.03	0.13	0.06	0.25
New Backup Generator	0.98	4.27	1.64	7.19	0.01	0.06	< 0.01	<0.01	<0.01	0.04
New Boiler	0.38	1.65	0.32	1.39	0.02	0.09	< 0.01	0.01	0.03	0.13
Total from Proposed Modifications	19.44	85.16	23.99	105.06	6.33	27.78	0.61	2.72	1.23	5.43
Current Muddy Creek PTE	—	283.1	—	243.1	—	48.2	—	5.4	—	11.3
Total Muddy Creek PTE after Modification	—	368.26	—	348.16	—	75.98	—	8.12	—	16.73
PSD SERs	—	40	—	100	—	40	—	40	—	15
Part 70 Thresholds	—	100	—	100	—	100	—	100	—	100

NO_x	nitrogen oxides (includes nitrogen oxide and nitrogen dioxide)
CO	carbon monoxide
VOC	volatile organic compounds
SO_2	sulfur dioxide
PM_{10}	particulate matter less than 10 microns in diameter
lb/hr	pounds per hour
tpy	tons per year
PTE	Potential to Emit
PSD	Prevention of Significant Deterioration
SER	Significant Emission Rate

As required under the PSD regulations, a dispersion modeling analysis (significance analysis) was conducted for NO_x and CO to determine the impact of the proposed modification (*i.e.*, the change in ambient pollutant concentration). As shown in table 4.11.1-5 (below), the significance analysis for CO indicates that the increase in CO emissions would not result in a significant ambient impact. Therefore, no further modeling was performed for CO.

TABLE 4.11.1-5

Muddy Creek Compressor Station Dispersion Modeling Summary

Pollutant	Class II MSL ($\mu g/m^3$)	Predicted Class II Impact ($\mu g/m^3$) a/	NAAQS ($\mu g/m^3$)	Predicted Cumulative Concentration b/ ($\mu g/m^3$)	PSD Increment ($\mu g/m^3$)	Predicted Increment c/ ($\mu g/m^3$)
Carbon Monoxide						
1-hour	2,000	855	---	---	---	---
8-hour	500	491	---	---	---	---
Nitrogen Dioxide						
Annual	1	2.4	100	54.8	25	7.4

a/ Values are based on the KRGT Muddy Creek Compressor Station's emissions alone.

b/ Includes emissions from nearby sources and a background concentration of 10 $\mu g/m^3$.

c/ Includes emission changes from nearby sources since the applicable baseline date.

MSL	Modeling Significance Level
NAAQS	National Ambient Air Quality Standards
PSD	Prevention of Significant Deterioration

The NO_x significance analysis, however, indicates that the NO_x emissions increase from the proposed modification at the Muddy Creek Compressor Station would be significant. Therefore, a full impact analysis was performed. The full impact analysis must estimate the cumulative, and change in, ambient concentrations in the vicinity of the Muddy Creek Compressor Station. The cumulative ambient concentration from the potential emissions of the Muddy Creek Compressor Station and nearby sources must be below the NAAQS. As shown in table 4.11.1-5 (page 4-247), the predicted cumulative concentration is 54.8 $\mu g/m^3$. This is below the NAAQS for NO_2 of 100 $\mu g/m^3$. The change in ambient concentration, or increment, since the PSD baseline date must be below the PSD increment. As shown in table 4.11.1-5, the predicted increment is 7.4 $\mu g/m^3$, which is below the PSD increment threshold of 25 $\mu g/m^3$. Therefore, the predicted ambient air quality impacts from the Muddy Creek Compressor Station comply with the applicable regulations.

In response to concerns raised by the BLM, a significance analysis was also performed for NO_x emissions at the nearest Class I area (Bridger Wilderness Area) which is more than 87 miles from the Muddy Creek Compressor Station. The predicted ambient NO_x concentration increase as a result of the proposed modification at the Muddy Creek Compressor Station is 0.0015 $\mu g/m^3$. This is well below the Class I modeling significance level of 0.1 $\mu g/m^3$; therefore, no further Class I area modeling was performed. In addition, continuous visibility-related background data collected as a part of the Interagency Monitoring of Protected Visual Environments program indicate that visibility in the Central Rocky Mountains is very good, with an average standard visual range of over 70 miles (Sisler, 1996).

Coyote Creek Compressor Station

KRGT proposes to install one Solar Mars 100 turbine, one backup generator, and one boiler at the new Coyote Creek Compressor Station. The proposed Solar Mars 100 turbine and backup generator are ISO rated at 15,000 hp and 1,072 hp, respectively. All of these units would burn natural gas.

The proposed Coyote Creek Compressor Station site is located in Uinta County, Wyoming, which is in attainment of the NAAQS for all pollutants. As shown in table 4.11.1-6 (page 4-249), the potential emissions from the Coyote Creek Compressor Station are less than 100 tpy. Therefore, the station would not be subject to PSD review. The total potential HAP emissions from the compressor station would be well below the major source thresholds at less than 0.5 tpy. Therefore, the Coyote Creek Compressor Station would not be subject to Part 70 permitting or NESHAP.

Salt Lake Compressor Station

KRGT proposes to install two Solar Mars 100 turbines, one backup generator, and one boiler at the new Salt Lake Compressor Station. The proposed Solar Mars 100 turbines and backup generator are ISO rated at 15,000 hp and 1,072 hp, respectively. All of these units would burn natural gas. Table 4.11.1-7 (page 4-249) lists the potential emissions from the proposed Salt Lake Compressor Station.

Because the proposed Salt Lake Compressor Station would be located in a non-attainment area for SO_2 and PM_{10}, the NNSR major source thresholds are only 100 tpy for those pollutants. Major sources of all other criteria pollutants are subject to the PSD regulations. As shown in table 4.11.1-7 (page 4-249), the PSD thresholds for criteria pollutants other than SO_2 and PM_{10} are 250 tpy. The applicability thresholds for PSD, NNSR, and Part 70 permitting are also listed in table 4.11.1-7. The Salt Lake Compressor Station is not subject to PSD or NNSR. The total potential HAP emissions from the Salt Lake Compressor Station would be well below the major source thresholds at less than 1 tpy. Therefore, the Salt Lake Compressor Station would not be subject to NESHAP. The potential CO emissions are greater than 100 tpy; therefore, the Salt Lake Compressor Station is subject to Part 70 permitting. During this permitting process, KRGT would need to evaluate the applicability of emission offsets and other state requirements.

TABLE 4.11.1-6

Coyote Creek Compressor Station Criteria Pollutant Emission Summary and Applicability Thresholds

Unit	Pollutant									
	NO_x		CO		VOC		SO_2		PM_{10}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
One New Solar Mars 100 Turbine	8.39	36.76	10.22	44.76	2.93	12.82	0.29	1.26	0.56	2.44
New Backup Generator	17.08	4.27	28.76	7.19	0.23	0.06	< 0.01	< 0.01	0.16	0.04
New Boiler	0.38	1.65	0.32	1.39	0.02	0.09	< 0.01	0.01	0.03	0.13
Total Coyote Creek PTE	25.85	42.68	39.30	53.34	3.18	12.97	0.29	1.27	0.75	2.61
PSD Major Source Threshold	—	250	—	250	—	250	—	250	—	250
Part 70 Major Source Threshold	—	100	—	100	—	100	—	100	—	100

NO_x nitrogen oxides (includes nitrogen oxide and nitrogen dioxide)
CO carbon monoxide
VOC volatile organic compounds
SO_2 sulfur dioxide
PM_{10} particulate matter less than 10 microns in diameter
lb/hr pounds per hour
tpy tons per year
PTE Potential to Emit
PSD Prevention of Significant Deterioration

TABLE 4.11.1-7

Salt Lake Compressor Station Criteria Pollutant Emission Summary and Applicability Thresholds

Unit	Pollutant									
	NO_x		CO a/		VOC		SO_2		PM_{10}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Two New Solar Mars 100 Turbines	18.89	82.70	22.99	100.70	6.58	28.84	0.65	2.83	1.29	5.65
New Backup Generator	17.08	2.56	28.76	4.31	0.23	0.03	< 0.01	< 0.01	0.15	0.02
New Boiler	0.38	1.65	0.32	1.39	0.02	0.09	< 0.01	< 0.01	0.03	0.13
Total Salt Lake PTE	36.35	86.91	52.07	106.40	6.83	28.96	0.65	2.83	1.47	5.80
PSD/NNSR Threshold	—	250	—	250	—	250	—	100	—	100
Part 70 Permitting Threshold	—	100	—	100	—	100	—	100	—	100

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a/ Dispersion modeling for CO is required under UAC R307-405-6(2); however, because the Salt Lake Compressor Station is not a major source, it is exempt from the requirements of UAC R307-405-6(2).

NO_x nitrogen oxides (includes nitrogen oxide and nitrogen dioxide)
CO carbon monoxide
VOC volatile organic compounds
SO_2 sulfur dioxide
PM_{10} particulate matter less than 10 microns in diameter
lb/hr pounds per hour
tpy tons per year
PTE Potential to Emit
PSD Prevention of Significant Deterioration
NNSR Non-attainment New Source Review

Elberta Compressor Station

KRGT proposes to remove two Solar Taurus 60 turbines and install one new Solar Mars 100 turbine, one backup generator, and one boiler at the existing Elberta Compressor Station. The proposed Solar Mars 100 turbine and backup generator are ISO rated at 15,000 hp and 1,072 hp, respectively. All of these units would burn natural gas. Table 4.11.1-8 (below) lists the potential emissions from the proposed additions or modifications at the Elberta Compressor Station.

TABLE 4.11.1-8

Elberta Compressor Station Criteria Pollutant Emission Summary and Applicability Thresholds

Unit	Pollutant									
	NO_x		CO		VOC		SO_2		PM_{10}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
One New Solar Mars 100 Turbine	9.19	40.26	11.19	49.02	3.21	14.04	0.32	1.38	0.61	2.67
New Backup Generator	17.07	2.56	28.73	4.31	0.20	0.03	0.01	< 0.01	0.13	0.02
New Boiler	0.38	1.65	0.32	1.39	0.02	0.09	< 0.01	0.01	0.03	0.13
Total Elberta PTE	26.64	44.47	40.24	54.72	3.43	14.16	0.33	1.39	0.77	2.82
Removal of two Solar Taurus 60 Turbines	—	-40.96	—	-49.88	—	-14.28	—	-1.40	—	-2.72
Net Emission Increase	—	3.52	—	4.84	—	-0.12	—	-0.01	—	0.11
PSD/NNSR Threshold	—	250	—	250	—	250	—	250	—	100
Part 70 Permitting Threshold	—	100	—	100	—	100	—	100	—	100

NO_x	nitrogen oxides (includes nitrogen oxide and nitrogen dioxide)
CO	carbon monoxide
VOC	volatile organic compounds
SO_2	sulfur dioxide
PM_{10}	particulate matter less than 10 microns in diameter
lb/hr	pounds per hour
tpy	tons per year
PTE	Potential to Emit
PSD	Prevention of Significant Deterioration
NNSR	Non-attainment New Source Review

The Elberta Compressor Station is located in Utah County, Utah, which is in non-attainment of the NAAQS for PM_{10}. Therefore, major sources of PM_{10} are subject to NNSR and major sources of all other criteria pollutants are subject to the PSD regulations. As shown in table 4.11.1-8 (above), the NNSR major source threshold for PM_{10} is 100 tpy and PSD major source thresholds for all other criteria pollutants are 250 tpy. The applicability thresholds for Part 70 permitting are also listed in table 4.11.1-8. As shown in the table, the Elberta Compressor Station is not subject to PSD or NNSR. The potential criteria pollutant and HAP emissions from the Elberta Compressor Station would be below the major source thresholds at less than 100 tpy and 0.5 tpy, respectively. Therefore, the Elberta Compressor Station would not be subject to NESHAP or Part 70 permitting.

Fillmore Compressor Station

KRGT proposes to install one new Solar Mars 100 turbine at the existing Fillmore Compressor Station. The proposed Solar Mars 100 turbine is ISO rated at 15,000 hp and would burn natural gas. Table 4.11.1-9 (page 4-251) lists the potential emissions from the proposed modifications to the Fillmore Compressor Station.

TABLE 4.11.1-9

Fillmore Compressor Station Criteria Pollutant Emission Summary and Applicability Thresholds

Unit	Pollutant									
	NO_x		CO		VOC		SO_2		PM_{10}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
One New Solar Mars 100 Turbine	9.26	40.52	11.28	49.34	3.23	14.13	0.32	1.39	0.61	2.69
Existing Fillmore PTE	—	42.96	—	51.27	—	14.34	—	1.40	—	2.82
Total Fillmore PTE	—	83.48	—	100.61	—	28.47	—	2.79	—	5.51
PSD Threshold	—	250	—	250	—	250	—	250	—	250
Part 70 Permitting Threshold	—	100	—	100	—	100	—	100	—	100

NO_x	nitrogen oxides (includes nitrogen oxide and nitrogen dioxide)
CO	carbon monoxide
VOC	volatile organic compounds
SO_2	sulfur dioxide
PM_{10}	particulate matter less than 10 microns in diameter
lb/hr	pounds per hour
tpy	tons per year
PTE	Potential to Emit
PSD	Prevention of Significant Deterioration

The Fillmore Compressor Station is located in Millard County, Utah, which is in attainment of the NAAQS for all pollutants. Therefore, major sources of criteria pollutants are subject to the PSD regulations. As shown in table 4.11.1-9 (above), the PSD major source thresholds for all criteria pollutants are 250 tpy. The applicability thresholds for Part 70 permitting are also listed in table 4.11.1-9. The Fillmore Compressor Station is not subject to PSD because its potential criteria emissions are less than 250 tpy. The potential CO emissions are greater than 100 tpy; therefore, the Fillmore Compressor Station is subject to Part 70 permitting. The total potential HAP emissions from the Fillmore Compressor Station would be well below the major source thresholds at less than 1 tpy. Therefore, the Fillmore Compressor Station would not be subject to NESHAP.

Veyo Compressor Station

KRGT proposes to restage the compressor driven by the existing Solar Mars 100 turbine and install two new Solar Mars 100 turbines, one backup generator, and one boiler at the existing Veyo Compressor Station. Restaging the existing compressor would not affect emissions. The new Solar Mars 100 turbines are ISO rated at 15,000 hp. The backup generator is rated at 1,072 hp and limited to 300 operation hours per year. All units would burn natural gas. Table 4.11.1-10 (page 4-252) lists the potential emissions from the proposed additions to the Veyo Compressor Station.

The Veyo Compressor Station is located in Washington County, Utah, which is in attainment of the NAAQS for all pollutants. Therefore, major sources of criteria pollutants are subject to the PSD regulations. As shown in table 4.11.1-10 (page 4-252), the PSD major source thresholds for all criteria pollutants are 250 tpy. The applicability thresholds for Part 70 permitting are also listed in table 4.11.1-10. The Veyo Compressor Station is not subject to PSD because its potential criteria emissions are less than 250 tpy. The potential NO_x and CO emissions are greater than 100 tpy; therefore, the Veyo Compressor Station is subject to Part 70 permitting. The total potential HAP emissions from the Veyo Compressor Station would be well below the major source thresholds at less than 1.4 tpy. Therefore, the Veyo Compressor Station would not be subject to NESHAP.

TABLE 4.11.1-10

Veyo Compressor Station Criteria Pollutant Emission Summary and Applicability Thresholds

Unit	Pollutant									
	NO_x		CO		VOC		SO_2		PM_{10}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Two New Solar Mars 100 Turbines	18.62	81.54	22.67	99.30	6.49	28.44	0.63	2.78	1.24	5.42
New Boiler	0.38	1.65	0.32	1.39	0.02	0.09	<0.01	0.01	0.03	0.13
New Generator	6.55	0.98	4.31	0.65	0.91	0.14	<0.01	<0.01	<0.01	<0.01
Increase from Proposed Modification	25.55	84.17	27.30	101.34	7.42	28.67	0.63	2.79	1.27	5.55
Existing Veyo PTE	—	36.50	—	44.32	—	12.74	—	1.27	—	0.71
Total Veyo PTE	—	120.67	—	145.66	—	41.41	—	4.06	—	6.26
PSD/NNSR Threshold	—	250	—	250	—	250	—	250	—	250
Part 70 Permitting Threshold	—	100	—	100	—	100	—	100	—	100

NO_x	nitrogen oxides (includes nitrogen oxide and nitrogen dioxide)
CO	carbon monoxide
VOC	volatile organic compounds
SO_2	sulfur dioxide
PM_{10}	particulate matter less than 10 microns in diameter
lb/hr	pounds per hour
tpy	tons per year
PTE	Potential to Emit
PSD	Prevention of Significant Deterioration
NNSR	Non-attainment New Source Review

Dry Lake Compressor Station

KRGT proposes to install one new Solar Mars 100 turbine, one backup generator, and one boiler at the new Dry Lake Compressor Station. The proposed Solar Mars 100 turbine and backup generator are rated at 15,000 hp and 1,072 hp, respectively. Table 4.11.1-11 (page 4-253) lists the potential emissions from the Dry Lake Compressor Station.

The proposed Dry Lake Compressor Station would be located in Clark County, Nevada. Although parts of this county have been designated as non-attainment with the NAAQS for certain pollutants, the area immediately surrounding the Dry Lake Compressor Station is in attainment of the NAAQS for all pollutants. Therefore, major sources of criteria pollutants are subject to the PSD regulations. As shown in table 4.11.1-11 (page 4-253), the PSD major source threshold for all criteria pollutant sources in Clark County is 100 tpy. The applicability thresholds for Part 70 permitting are also shown in table 4.11.1-11. The Dry Lake Compressor Station would not be subject to PSD because its potential criteria pollutant emissions would be less than 100 tpy. The total potential HAP emissions from the Dry Lake Compressor Station would be well below the major source thresholds at less than 0.6 tpy. Therefore, the Dry Lake Compressor Station would not be subject to Part 70 permitting or NESHAP.

Goodsprings Compressor Station

KRGT proposes to install two new Solar Mars 100 turbines and restage the compressor unit driven by the existing Solar Mars 100 turbine at the Goodsprings Compressor Station. The proposed Solar Mars 100 turbines are each rated at 15,000 hp. Table 4.11.1-12 (page 4-253) lists the potential emissions from the proposed additions at the Goodsprings Compressor Station. Restaging the existing compressor would not affect emissions.

TABLE 4.11.1-11

Dry Lake Compressor Station Criteria Pollutant Emission Summary and Applicability Thresholds

Unit	Pollutant									
	NO_x		CO		VOC		SO_2		PM_{10}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
One New Solar Mars 100 Turbine	10.24	44.84	2.38	10.37	3.57	15.64	0.35	1.53	0.68	2.98
New Boiler	0.38	1.65	0.32	1.39	0.02	0.09	<0.01	0.01	0.03	0.13
New Generator	17.08	4.27	28.79	7.19	0.23	0.06	<0.01	<0.01	0.15	0.04
Total Dry Lake PTE	2.77	50.76	31.49	18.95	3.82	15.79	0.35	1.54	0.86	3.14
PSD Threshold	—	100	—	100	—	100	—	100	—	100
Part 70 Permitting Threshold	—	100	—	100	—	100	—	100	—	100

NO_x nitrogen oxides (includes nitrogen oxide and nitrogen dioxide)
CO carbon monoxide
VOC volatile organic compounds
SO_2 sulfur dioxide
PM_{10} particulate matter less than 10 microns in diameter
lb/hr pounds per hour
tpy tons per year
PTE Potential to Emit
PSD Prevention of Significant Deterioration

TABLE 4.11.1-12

Goodsprings Compressor Station Criteria Pollutant Emission Summary and Applicability Thresholds

Unit	Pollutant									
	NO_x		CO		VOC		SO_2		PM_{10}	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
Two New Solar Mars 100 Turbines	19.45	85.20	4.50	19.72	6.78	29.71	0.66	2.91	1.30	5.65
Existing Goodsprings PTE	—	45.84	—	10.37	—	13.87	—	1.37	—	2.72
Total Goodsprings PTE	—	131.04	—	30.09	—	43.58	—	4.28	—	8.37
Net Emission Increase	—	85.2	—	19.72	—	29.71	—	2.91	—	5.65
PSD Threshold	—	50	—	100	—	50	—	100	—	100
Part 70 Permitting Threshold	—	50	—	100	—	50	—	100	—	100

NO_x nitrogen oxides (includes nitrogen oxide and nitrogen dioxide)
CO carbon monoxide
VOC volatile organic compounds
SO_2 sulfur dioxide
PM_{10} particulate matter less than 10 microns in diameter
lb/hr pounds per hour
tpy tons per year
PTE Potential to Emit
PSD Prevention of Significant Disturbance

The Goodsprings Compressor Station is located in Clark County, Nevada. Although parts of this county have been designated as non-attainment with the NAAQS for certain pollutants, the area immediately surrounding the Goodsprings Compressor Station is a maintenance area for NO_x and VOC, and attainment for all other criteria pollutants. Therefore, the PSD major source thresholds for NO_x and VOC are 50 tpy. As shown in table 4.11.1-12 (above), the PSD major source threshold for all other criteria pollutants in Clark County is 100 tpy. The applicability thresholds for Part 70 permitting are also shown in table 4.11.1-12. The

Goodsprings Compressor Station would be subject to PSD review because the NO_x emission increase associated with the proposed additions and modifications would be greater than 50 tpy. However, dispersion modeling is not required because the net emission increase of NO_x from the proposed additions and modifications would be less than 100 tpy, as established in Section 12.2.15.4 of the Clark County Air Pollution Control Regulations. The total potential HAP emissions from the Goodsprings Compressor Station would be well below the major source thresholds at less than 1.3 tpy. Therefore, the Goodsprings Compressor Station would not be subject to NESHAP.

The Goodsprings Compressor Station is located about 10 miles from the California border and is not expected to have a significant impact on air quality in California. However, if the Clark County Health District determines otherwise, the Mojave Desert AQMD would be noticed on the permitting process.

Daggett Compressor Station

KRGT proposes to restage and derate the electric motor-driven compressor at the existing Daggett Compressor Station. The electric compressor would be derated to 4,000 hp and does not emit any air pollutants. Activities that affect air quality in this area fall under the jurisdiction of the Mojave Desert AQMD. The Daggett Compressor Station does not require a Permit to Operate from the Mojave Desert AQMD.

Summary

The Muddy Creek and Goodsprings Compressor Stations are the only stations that would be PSD major sources. However, the Muddy Creek Compressor Station is the only compressor station subject to dispersion modeling. The Muddy Creek Compressor Station dispersion modeling indicated that the station would not cause or significantly contribute to a violation of the NAAQS. The dispersion modeling analysis also indicated that the Muddy Creek Compressor Station would not have a significant impact on the nearest Class I area.

4.11.2 Noise

Significance Criteria

Adverse impact on environmental noise levels would be considered significant and would require additional mitigation if:

- noise attributable to the operation of a proposed or modified compressor station would exceed a day-night sound level (L_{dn}) of 55 decibels of the A-weighted scale (dBA) at nearby noise-sensitive areas (NSA), such as residences, schools, hospitals, or other occupied dwellings; or

- project-related noise exceeds applicable state and local standards at nearby NSAs.

4.11.2.1 Existing Sound Levels

At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of the day and throughout the week. Variation is caused in part by changing weather conditions, the effects of seasonal vegetative cover, and human activities. Two measures used by Federal agencies for the time-varying quality of environmental noise known to affect people are the 24-hour equivalent sound level ($L_{eq(24)}$) and the L_{dn}. The $L_{eq(24)}$ is the level of steady sound with the same total (equivalent) energy as the time-varying sound of concern, averaged over a 24-hour period. The L_{dn} is the $L_{eq(24)}$ with 10 dBA added

to nighttime sound levels between the hours of 10 p.m. and 7 a.m. to account for people's greater sensitivity to sound during nighttime hours.

The equipment that would be operated continuously at the new and modified compressor stations would be the primary sources of noise associated with the Kern River 2003 Expansion Project. To characterize the existing sound levels in the vicinity of the proposed Coyote Creek, Salt Lake, and Dry Lake Compressor Stations, noise surveys were conducted during July 2001. Actual noise measurements could not be taken to characterize existing sound levels near the proposed modified compressor stations because the stations were undergoing construction or modifications associated with KRGT's California Emergency Action Project (FERC Docket No. CP01-106). Instead, existing noise levels were calculated by adding measured noise levels after KRGT's Phase I Expansion Project to the noise levels expected to result from the California Emergency Action Project. Some of KRGT's compressor stations are in very rural areas in which no NSAs are within 1 mile of the facility. For many of these facilities, KRGT measured/estimated the existing noise level at the property boundary only. The existing noise level at the property boundary or, if available, at the closest NSA is listed in table 4.11.2-1 (below) for each compressor station and described below.

TABLE 4.11.2-1

Summary of Existing Noise Levels Near the Compressor Stations Associated with the Kern River 2003 Expansion Project

State/Compressor Station	Measurement Location	Distance / Direction	Existing L_{eq} (dBA)	Existing L_{dn} (dBA)
WYOMING				
Muddy Creek	NSA #1	Approximately 5 miles / North	21.8	28.2 a/
Coyote Creek	West Property Line	On Facility Property	37.4	43.8
UTAH				
Salt Lake	NSA #1	2,700 feet / South	44.1 b/	50.5
	NSA #2	2,700 feet / South	47.6	54.0
Elberta	NSA #2	6,000 feet / East	38.2	44.6
Fillmore	NSA #1	9,600 feet / East-Southeast	22.6	29.0 a/
Veyo	NSA #1	Approximately 2 miles / East	18.5	24.9 a/
NEVADA				
Dry Lake	South Property Line	On Facility Property	39.4	45.8
Goodsprings	NSA #1	Approximately 2 miles / Northwest	26.0	32.4 a/
CALIFORNIA				
Daggett	NSA #4 c/	2,000 feet / Northwest	42.4	48.8

a/ Noise in rural areas varies considerably over the course of a day and throughout the year. This noise level variation makes it difficult to accurately determine background L_{eq} and L_{dn} noise levels. For purposes of this analysis, it may be assumed that the existing noise level at any rural location at which noise surveys indicated existing noise levels were below 35dBA L_{dn} is actually about 35 dBA L_{dn} or greater.

b/ Main source of noise at the Salt Lake Compressor Station NSAs was traffic on I-80 and Bangerter Highway, and a nearby warehouse and trucking facility.

c/ NSA #4 is a future NSA that has been treated as an existing NSA for this analysis. The nearest existing NSA is 2,400 feet to the northwest.

It should be noted that unless NSAs are located near a predominant and continuous noise source, such as an industrial facility or compressor station, noise in rural areas varies considerably over the course of a day and throughout the year. This noise level variation makes it difficult to accurately determine background L_{eq} and L_{dn} noise levels. Background noise levels in wilderness areas or very rural areas typically range between 35 and 45 dBA (L_{dn}). For the purposes of this analysis, it may be assumed that the existing noise

level at any rural location at which noise surveys indicated existing noise levels were below 35 dBA L_{dn} is actually about 35 dBA L_{dn} or greater.

Muddy Creek Compressor Station

The existing Muddy Creek Compressor Station is located in a rural portion of Lincoln County, Wyoming, approximately 15 miles southeast of Kemmerer, Wyoming. The closest NSA is a ranch residence located on Wagon Wheel Road about 5 miles north of the compressor station site. The existing L_{dn} at the closest NSA is estimated to be about 35 dBA.

Coyote Creek Compressor Station

The proposed Coyote Creek Compressor Station would be located in a rural portion of Uinta County, Wyoming approximately 15 miles south of Evanston, Wyoming. The closest NSA is a ranch residence located a distance of about 5 miles east of the compressor station site. A noise survey was conducted on July 5, 2001 to determine the existing noise levels at the station property boundary. The existing L_{eq} at the station property boundary is 37.4 dBA, which corresponds to an L_{dn} of 43.8 dBA.

Salt Lake Compressor Station

The proposed Salt Lake Compressor Station would be located in Salt Lake County, Utah just south of Interstate 80 and west of Bangerter Highway. The closest NSAs to the proposed Salt Lake Compressor Station are two residences located about 2,700 feet south of the proposed site (NSA #1 and NSA #2). A noise survey conducted on October 25, 2001 indicated an existing L_{eq} of 44.1 dBA at NSA #1 and 47.6 dBA at NSA #2. This equates to an L_{dn} of 50.5 dBA and 54 dBA at NSA #1 and NSA #2, respectively.

Elberta Compressor Station

The existing Elberta Compressor Station is located in Utah County, Utah, approximately 1 mile west of the town of Elberta. The closest NSAs to the Elberta Compressor Station are residences located about 6,000 feet east (NSA #2) and 7,000 feet east (NSA #1) of the compressor station site. The existing L_{eq} at the nearest NSA (NSA #2) is 38.2 dBA, which corresponds to an L_{dn} of 44.6 dBA.

Fillmore Compressor Station

The Fillmore Compressor Station is located in Millard County, Utah, approximately 17 miles south of Fillmore. The closest NSA to the Fillmore Compressor Station is a residence located about 9,600 feet east-southeast of the compressor station site. The existing L_{dn} at the closest NSA is estimated to be about 35 dBA.

Veyo Compressor Station

The Veyo Compressor Station is located in Washington County, Utah, approximately 3 miles west of Veyo and 20 miles northwest of St. George. The closest NSA to the Veyo Compressor Station is a residence located about 2 miles east of the compressor station site. The existing L_{dn} at the closest NSA is estimated to be about 35 dBA.

Dry Lake Compressor Station

The Dry Lake Compressor Station would be located in Clark County, Nevada, approximately 25 miles northeast of Las Vegas. The closest NSA to the compressor station is a residence located about 4 miles northeast of the compressor station. A noise survey was conducted on July 15, 2001 to determine the existing noise levels at the property boundary. The existing L_{eq} at the property boundary is 39.4 dBA, which corresponds to an L_{dn} of 45.8 dBA.

Goodsprings Compressor Station

The Goodsprings Compressor Station is located in Clark County, Nevada approximately 2 miles southeast of Goodsprings. The closest NSA to the compressor station is located about 2 miles northwest of the compressor station site. The existing L_{dn} at the closest NSA is estimated to be about 35 dBA.

Daggett Compressor Station

The Daggett Compressor Station is located in San Bernardino County, California, approximately 2 miles east of Daggett. There are nine NSAs within 1 mile of the compressor station. The closest NSA (NSA #4) is a future noise receptor located approximately 2,000 feet to the northwest of the compressor station site. The existing L_{eq} at NSA #4 is 42.4 dBA, which corresponds to an L_{dn} of 48.8 dBA.

4.11.2.2 Impact and Mitigation

Noise would be generated during the construction phase of the pipeline project and during the construction and operation of the compressor stations. Pipeline construction is like having an assembly line, with crews conducting separate but sequential activities, each generally proceeding at rates ranging from several hundred feet to 1 mile per day. Depending on the distance between each crew in the assembly line, construction activities in any one area could last from several weeks to several months on an intermittent basis. KRGT would operate construction equipment on an as-needed basis during this period. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and local. The noise levels from pipeline and compressor station construction equipment are not expected to exceed 78.8 dBA and 81.9 dBA at a distance of 100 feet from the construction site. This equates to noise levels of approximately 58.8 dBA for pipeline construction and 61.9 dBA for compressor station construction at a distance of 1,000 feet. Nighttime noise is not expected to increase during construction because most construction activities would be limited to daytime hours.

Primary noise sources during the operation of the compressor stations are the gas turbine air intakes and exhausts and compressor units. Other less significant noise sources include ancillary equipment such as lube oil coolers, gas aftercoolers, and station piping. Only the Muddy Creek, Veyo, Dry Lake, and Goodsprings Compressor Stations would be equipped with gas aftercoolers. The Daggett Compressor Station is powered by an electric motor-driven compressor. The noise sources at the Daggett Compressor Station include motor machinery surfaces, lube oil cooler, blower, and station piping.

In 1974, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin on Safety*. This publication evaluates the effects of environmental noise with respect to health and safety. The EPA has determined that noise levels should not exceed an L_{dn} of 55 dBA, which is the level that protects the public from indoor and outdoor activity interference. The EPA's L_{dn} noise level standard was used in this analysis to evaluate the impact on noise quality. A 55 dBA L_{dn} noise limitation equates to an L_{eq} of 48.6 dBA (*i.e.*, the compressor station must not exceed a continuous noise impact of 48.6 dBA at any NSA). No other Federal, state, or local noise regulations apply to KRGT's compressor stations.

The noise impact of each compressor station was calculated using *Noise* and *Noiseplot*. *Noise* is a computer program that calculates the sound pressure levels at selected points of interest and gives a detailed output of noise contributions for each source. The computer calculations are based on the hemispherical radiation of noise from each source. *Noiseplot* is a computer program that calculates and plots the total dBA noise contours for the compressor station. The barrier effect of the compressor station building and control building were included in the calculations. The noise attenuation attributable to air was based on weather conditions of 60 degrees Fahrenheit and 90 percent relative humidity. Details of the noise study for each compressor station modification are provided below.

The noise studies assumed that the new or modified equipment would include the following types of noise controls:

- turbine air intake and exhaust silencers;
- acoustically treated enclosures for the turbines; and
- lube oil coolers similar to Solar's 90 dBA low-noise cooler.

Muddy Creek Compressor Station

Facilities at the existing Muddy Creek Compressor Station include two 15,000-hp (ISO rated) Solar Mars 100 turbines and two gas aftercoolers. KRGT proposes to install two new Solar Mars 100 turbines and a third gas aftercooler.

The noise analysis estimates that noise levels attributable to the compressor station would be below 55 dBA L_{dn} at distances greater than 2,400 feet. Due to the large distance separating the closest NSA and the compressor station, there should not be a perceptible or significant noise impact at the NSA.

Coyote Creek Compressor Station

The Coyote Creek Compressor Station would be a new compressor station equipped with one 15,000-hp (ISO rated) Solar Mars 100 turbine.

The estimated noise attributable to the Coyote Creek Compressor Station after the proposed facilities are operational would be an L_{eq} of 13.3 dBA at the nearest NSA. This equates to an L_{dn} attributable to the compressor station of 19.7 dBA at the nearest NSA. This noise level is more than 35 dBA below the FERC limit of 55 dBA L_{dn}.

Salt Lake Compressor Station

The Salt Lake Compressor Station would be a new compressor station equipped with two 15,000-hp (ISO rated) Solar Mars 100 turbines.

The estimated noise attributable to the Salt Lake Compressor Station after the proposed facilities are operational would be an L_{eq} of 41.4 dBA at NSA #1 and 41.8 dBA at NSA #2. This equates to an L_{dn} attributable to the compressor station of 47.8 dBA and 48.2 dBA at NSA #1 and NSA #2, respectively. These noise levels are more than 6 dBA below the FERC limit of 55 dBA L_{dn}.

Elberta Compressor Station

Facilities at the existing Elberta Compressor Station include two Solar Taurus 60 turbines. KRGT proposes to install one new 15,000-hp (ISO rated) Solar Mars 100 turbine to replace the two existing turbines.

The estimated noise attributable to the Elberta Compressor Station after the proposed facilities are operational would be an L_{eq} of 26.5 dBA at the nearest NSA. This equates to an L_{dn} attributable to the compressor station of 32.9 dBA at the nearest NSA. This noise level is more than 22 dBA below the FERC limit of 55 dBA L_{dn}.

Fillmore Compressor Station

Facilities at the existing Fillmore Compressor Station include one 15,000-hp (ISO rated) Solar Mars 100 turbine. KRGT proposes to install one new Solar Mars 100 turbine.

The estimated noise attributable to the Fillmore Compressor Station after the proposed facilities are operational would be an L_{eq} of 25.6 dBA at the nearest NSA. This equates to an L_{dn} attributable to the compressor station of 32 dBA at the nearest NSA. This noise level is 23 dBA below the FERC limit of 55 dBA L_{dn}.

Veyo Compressor Station

Facilities at the existing Veyo Compressor Station include one 15,000-hp (ISO rated) Solar Mars 100 turbine that was installed without a compressor building as a part of the California Emergency Action Project. KRGT proposes to install two new Solar Mars 100 turbines, a gas aftercooler, and an additional compressor building.

The estimated noise level attributable to the Veyo Compressor Station after the proposed modification would be 26.6 dBA at the nearest NSA. This equates to an L_{dn} attributable to the compressor station of 33 dBA at the nearest NSA. This noise level is 22 dBA below the FERC limit of 55 dBA L_{dn}.

Dry Lake Compressor Station

The Dry Lake Compressor Station would be a new compressor station equipped with one 15,000-hp (ISO rated) Solar Mars 100 turbine and one gas aftercooler.

The estimated noise from the Dry Lake Compressor Station after the proposed facilities are operational would be an L_{eq} of 20.0 dBA at the nearest NSA. This equates to an L_{dn} attributable to the compressor station of 26.4 dBA at the nearest NSA. This noise level is more than 28 dBA below the FERC limit of 55 dBA L_{dn}.

Goodsprings Compressor Station

Facilities at the existing Goodsprings Compressor Station include one 15,000-hp (ISO rated) Solar Mars 100 turbine. KRGT proposes to install two additional Solar Mars 100 turbines and expand the existing two-fan gas aftercooler.

The estimated noise from the Goodsprings Compressor Station after the proposed facilities are operational would be an L_{eq} of 32.1 dBA at the nearest NSA. This equates to an L_{dn} attributable to the compressor station of 38.5 dBA at the nearest NSA. This noise level is more than 16 dBA below the FERC limit of 55 dBA L_{dn}.

Daggett Compressor Station

Facilities at the existing Daggett Compressor Station include one electric motor-driven compressor. KRGT proposes to restage and derate the existing motor from 8,000 hp to 4,000 hp. This modification is expected to reduce the existing noise levels.

The estimated noise attributable to the Daggett Compressor Station after the proposed modifications are completed would be an L_{eq} of 37.6 dBA at the nearest NSA. This equates to an L_{dn} attributable to the compressor station of 44 dBA at the nearest NSA. This noise level is 4 dBA below the existing noise levels and 11 dBA below the FERC limit of 55 dBA L_{dn}.

Summary

During the planning phases of any proposed project, extensive research is conducted to determine the construction and operational requirements of the pipeline and compressor stations. Based on these studies, no vibration issues are anticipated along the proposed or existing natural gas pipeline system facilities.

With the exception of the Salt Lake and Daggett Compressor Stations, the nearest NSAs are greater than 1 mile from the new and modified compressor stations. The noise analysis conducted at each of the compressor station sites indicates that all of the new and modified compressor stations would produce noise levels significantly less than 55 dBA L_{dn} at the nearest NSA with the exception of the Salt Lake and Daggett Compressor Stations. As a result, noise impacts from the new and modified stations would be less than significant.

To ensure that the actual noise resulting from the operation of the Salt Lake and the Daggett Compressor Stations is below an L_{dn} of 55 dBA, KRGT would conduct a noise survey to verify that the noise from the Salt Lake and Daggett Compressor Stations operated at full load does not exceed an L_{dn} of 55 dBA at any NSAs, and file the results of the noise survey with the FERC and the CSLC (for the Daggett Compressor Station) no later than 60 days after placing the compressor stations into service. If the noise attributable to the operation of the compressor stations at full load exceeds an L_{dn} of 55 dBA at any nearby NSAs, KRGT would file a report on what changes are needed and would install additional noise controls to meet that level within 90 days of completing the survey. KRGT would confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the FERC and the CSLC (for the Daggett Compressor Station) no later than 60 days after it installs the additional noise controls.

4.12 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic but is classified as a simple asphyxiate, posing a slight inhalation hazard. If methane is inhaled in high concentration, oxygen deficiency can occur, resulting in serious injury or death.

Methane has an auto-ignition temperature (minimum temperature required in the absence of a spark or flame to set methane on fire) of 1,166 degrees Fahrenheit and is flammable at concentrations between 5 and 15 percent by volume in air. Flammable concentrations of methane within an enclosed space in the presence of an ignition source can explode. However, because methane is buoyant at atmospheric temperatures and disperses rapidly in air, unconfined mixtures of methane in air are rarely explosive.

4.12.1 Safety Standards

The DOT is mandated to provide pipeline safety under United States Code, Title 49, Chapter 601. The Research and Special Programs Administration's (RSPA) Office of Pipeline Safety (OPS) administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards, which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. The RSPA's work is shared with state agency partners and others at the Federal, state, and local level. The Kern River 2003 Expansion Project would be inspected and monitored by the western region of the OPS. These inspectors would complete inspections during construction of the pipeline to ensure that materials and construction methods meet the DOT standards. Following construction, OPS inspectors would conduct audits of KRGT's facilities typically once every 2 years. These audits would consist of reviewing operation and maintenance records, evaluating emergency procedures, and performing random field inspections of the natural gas facilities.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. Part 192 of Title 49 CFR specifically addresses natural gas pipeline safety issues. It does not, however, address other issues such as siting and routing, bond issues, etc. These items, in part, are a matter of private negotiation between pipeline companies and landowners and/or local government zoning boards. Siting and routing are also the responsibility of the FERC, the CSLC, and the cooperating agencies and are part of this EIS/EIR.

Under a Memorandum of Understanding (MOU) on Natural Gas Transportation Facilities dated January 15, 1993 between the DOT and the FERC, the DOT has the exclusive authority to promulgate Federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations requires that an applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facility for which a Certificate is requested in accordance with Federal safety standards and plans for maintenance and inspection, or shall certify that it has been granted a waiver of the requirements of the safety standards by the DOT in accordance with Section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards. If the FERC becomes aware of an existing or potential safety problem, there is a provision in the MOU to promptly alert the DOT. The MOU also provides for referring complaints and inquiries made by state and local governments and the general public that involve safety matters related to pipelines under the FERC's jurisdiction. The FERC also participates as a member of the DOT's Technical Pipeline Safety Standards Committee, which determines if proposed safety regulations are reasonable, feasible, and practicable.

As part of the leasing process in California, the CSLC reviews pipeline projects to ensure that they are designed in compliance with applicable Federal and California standards, and that they reflect current geologic and seismic information. The CSLC's engineering and environmental review assesses both siting and safety issues, such as the location of the project relative to seismic and populated areas, and the adequacy of the information contained in the applicant's construction, operations, maintenance, and emergency response plans (*e.g.*, proposed internal and external maintenance inspection processes, integrity testing methods to be applied, corrosion monitoring and testing and calibration of the cathodic protection system, leak monitoring, and emergency response plans and procedures). In determining whether or not to approve a lease and/or certify the CEQA documentation for a project, the CSLC may consider if standards above the DOT minimum standards provided for in CFR Part 192 are warranted in fault zone and populated areas, and may require additional safety measures, such as the installation of automatic shutoff valves in these areas. For approved projects, the CSLC staff also reviews (for consistency with the CSLC's action on the lease) post-construction documentation, including "as-built" construction plans showing any design changes or other amendments to the project as approved, pipeline test results (*e.g.*, smart pig and hydrostatic testing), and details of any extraordinary occurrences such as spill incidents and accidents.

The pipeline and aboveground facilities associated with the Kern River 2003 Expansion Project would be designed, constructed, operated, and maintained in accordance with or to exceed the DOT Minimum Federal Safety Standards in Title 49 CFR Part 192. These regulations, which are intended to protect the public and to prevent natural gas facility accidents and failures, include specifications for material selection and qualification; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion. The DOT regulations also incorporate by reference the additional codes and standards provided in table 4.12.1-1 (page 4-263).

The standards in the Federal regulations become more stringent as the human population density increases. Part 192 also defines area classifications, based on population density in the vicinity of the pipeline, that correspond to minimum safety requirements. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous 1-mile length of pipeline. The four area classifications are defined as follows:

- Class 1 - location with 10 or fewer buildings per mile intended for human occupancy;
- Class 2 - location with more than 10 but less than 46 buildings per mile intended for human occupancy;
- Class 3 - location with 46 or more buildings per mile intended for human occupancy or where the pipeline lies within 100 yards of any building or small well-defined outside area occupied by 20 or more people during normal use; and
- Class 4 - location where buildings with four or more stories aboveground are prevalent per mile.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. Pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. All pipelines installed in navigable rivers, streams, and harbors must have a minimum cover of 48 inches in soil or 24 inches in consolidated rock. Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock.

TABLE 4.12.1-1

Documents Incorporated by Reference into Title 49 CFR Part 192

Organization	Title (edition, where applicable)
American Gas Association Pipeline Research Committee, Project PR-3-805	A Modified Criterion for Evaluating the Remaining Strength of Corroded Pipe (December 22, 1989).
American Petroleum Institute (API) Specification 5L	Specification for Line Pipe (41st edition, 1995).
API Recommended Practice 5L1	Recommended Practice for Railroad Transportation of Line Pipe (4th edition, 1990).
API Specification 6D	Specification for Pipeline Values (Gate, Plug, Ball, and Check Values) (21st edition, 1994).
API Standard 1104	Welding of Pipelines and Related Facilities (18th edition, 1994).
American Society for Testing and Materials (ASTM) Designation: A 53	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded, and Seamless (A53-96).
ASTM Designation: A 106	Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service (A106-95).
ASTM Designation: A 333/A 333M	Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service (A 333/A 333M-94).
ASTM Designation: A 372/A 372M	Standard Specification for Carbon and Alloy Steel Forgings for Thin-Walled Pressure Vessels (A 372/A 372M-95).
ASTM Designation: A 381	Standard Specification for Metal-Arc-Welded Steel Pipe for Use With High-Pressure Transmission Systems (A 381-93).
ASTM Designation: A 671	Standard Specification for Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures (A 671-94).
ASTM Designation: A 672	Standard Specification for Electric-Fusion-Welded Steel Pipe for High-Pressure Service at Moderate Temperatures (A 672-94).
ASTM Designation A 691	Standard Specification for Carbon and Alloy Steel Pipe, Electric-Fusion-Welded for High- Pressure Service at High Temperatures (A 691-93).
ASTM Designation D 638	Standard Test Method for Tensile Properties of Plastics (D 638-96).
ASTM Designation D 2513	Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings (D 2513-87 edition for Sec. 192.63(a)(1), otherwise D 2513-96a).
ASTM Designation D 2517	Standard Specification for Reinforced Epoxy Resin Gas Pressure Pipe and Fittings (D 2517-94).
ASTM Designation: F 1055	Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene Pipe and Tubing (F 1055-95).
The American Society of Mechanical Engineers (ASME)/ANSI B16.1	Cast Iron Pipe Flanges and Flanged Fittings (1989).
ASME/ANSI B16.5	Pipe Flanges and Flanged Fittings (1988 with October 1988 Errata and ASME/ANSI B16.5a-1992 Addenda).
ASME/ANSI B31G	Manual for Determining the Remaining Strength of Corroded Pipelines (1991).

TABLE 4.12.1-1 (cont'd)

Documents Incorporated by Reference into Title 49 CFR Part 192

Organization	Title (edition, where applicable)
ASME/ANSI B31.8	Gas Transmission and Distribution Piping Systems (1995).
ASME Boiler and Pressure Vessel Code, Section I	Power Boilers (1995 edition with 1995 Addenda).
ASME Boiler and Pressure Vessel Code, Section VIII, Division 1	Pressure Vessels (1995 edition with 1995 Addenda).
ASME Boiler and Pressure Vessel Code, Section VIII, Division 2	Pressure Vessels: Alternative Rules (1995 edition with 1995 Addenda).
ASME Boiler and Pressure Vessel Code, Section IX	Welding and Brazing Qualifications (1995 edition with 1995 Addenda).
Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. SP44-96	Steel Pipe Line Flanges (includes 1996 errata) (1996).
National Fire Protection Association (NFPA) 30	Flammable and Combustible Liquids Code (1996).
ANSI/NFPA 58	Standard for the Storage and Handling of Liquefied Petroleum Gases (1995).
ANSI/NFPA 59	Standard for the Storage and Handling of Liquefied Petroleum Gases at Utility Gas Plants (1995).
ANSI/NFPA 70	National Electrical Code (1996).

Class locations also specify the maximum spacing allowed for sectionalizing block valves (referred to as MLVs in other sections of this EIS/EIR). Part 192 regulations require at least one sectionalizing block valve every 20 miles in Class 1 locations, every 15 miles in Class 2 locations, every 8 miles in Class 3 locations, and every 5 miles in Class 4 locations. The spacing for all of KRGT's proposed MLVs meets the DOT's requirements. Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, maximum allowable operating pressure, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. KRGT would upgrade the pipeline design when an increase in population density adjacent to the right-of-way indicates a change in class location for the pipeline.

The majority of the proposed pipeline route would cross open land that is sparsely populated. Approximately 10.3 miles (1 percent) of the pipeline route would be located in Class 2 or 3 areas (all in Utah). The rest of the pipeline route (approximately 99 percent) is located in Class 1 areas, with no portions of the pipeline route located in Class 4 areas (see table 4.12.1-2 (below)).

TABLE 4.12.1-2

Existing Class 2 and 3 Locations Along the Kern River 2003 Expansion Project Pipeline Route a/

	Class 2		Class 3	
State/Facility	Milepost Range	Length (miles)	Milepost Range	Length (miles)
UTAH				
Coyote Creek Loop 1	86.6 - 87.3	0.7 (2.1%)	87.3 - 87.8	0.5 (1.5%)
Coyote Creek Loop 2	124.5 - 124.6	0.1 (1.4%)	130.3 - 131.4	1.1 (15.3%)
Salt Lake Loop	136.8 - 137.3	0.5 (0.8%)	133.4 - 133.9	0.5 (0.8%)
	150.1 - 154.7	4.6 (7.7%)	135.1 - 136.1	1.0 (1.7%)
			136.3 - 136.8	0.5 (0.8%)
			145.9 - 146.1	0.2 (0.3%)
			163.1 - 163.7	0.6 (1.0%)
Utah Total		5.9 (1.7%)		4.4 (1.3%)

a/ All other portions of the pipeline route are within a Class 1 area. No portions of the pipeline route are within a Class 4 area.

KRGT's pipe material specifications are listed in table 4.12.1-3 (page 4-266). The pipe would have a coating of 12 millimeters of thickness (mils) fusion bond epoxy coating and 8 mils abrasion resistant coating. In addition, the pipe would be internally coated to reduce friction.

Before construction, KRGT would inspect the pipe at the mill where it is manufactured to ensure that it meets specifications and quality standards. During construction, the integrity of coating designed to protect against corrosion would be checked and imperfections would be corrected. Welds would be quality checked with x-rays. KRGT would test the pipe with water to a pressure ranging from 125 to 180 percent of the MAOP.

Before placing the pipeline into service, KRGT would perform post-construction geometry pig surveys, which would locate any construction-related dents. The generation of instrumented internal inspection device run through the pipeline would be dependent upon the expected type of defect. Dents would be found with a geometry pig; corrosion would be found with any number of pigs that run in various mediums from natural gas to air to water. Internal inspection technology continues to evolve and the specific inspection devices that would be used are dependent upon the technology and type of inspection devices available at the time of the inspection.

TABLE 4.12.1-3

Pipe Specifications for the Kern River 2003 Expansion Project

Pipe Diameter (inches)	Outside Diameter (inches)	Pipe Wall Thickness (inches)	Design Factor	Grade	Material Specifications	Manufacturing Process a/	Class Location
36	36.000	0.750	0.50	X60/X70	API 5L	DSAW	FAB b/
36	36.000	0.618	0.50	X70	API 5L	DSAW	3
36	36.000	0.515	0.60	X70	API 5L	DSAW	2
36	36.000	0.429	0.72	X70	API 5L	DSAW	1
42	42.000	0.875	0.50	X60/X70	API 5L	DSAW	FAB
42	42.000	0.720	0.50	X70	API 5L	DSAW	3
42	42.000	0.600	0.60	X70	API 5L	DSAW	2
42	42.000	0.500	0.72	X70	API 5L	DSAW	1

a/ DSAW = Double submerged arc welded.

b/ FAB = wall thickness used in the fabricated assemblies, including mainline block valves and launcher/receiver facilities. These wall thicknesses are used for all fabricated assemblies, regardless of the area classification (*i.e.*, the same wall thicknesses are used for valve settings and L/R regardless of the class).

KRGT would install a cathodic protection system to prevent or minimize corrosion of the buried pipeline. The cathodic protection system would impress a direct current on the pipe thus providing a ground-bed anode that would corrode instead of the pipeline. The main components of the cathodic protection system would be anode beds, rectifiers, and test stations.

KRGT would clearly mark the pipeline facilities at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative may be reached in the event of an emergency or before any excavation in the area of the pipeline by a third party. KRGT participates in all communication and notification services to prevent damage to underground utilities (One-Call systems).

The pipeline system would be inspected by air to observe right-of-way conditions and identify indications of leaks, evidence of pipeline damage, evidence of encroachment (*i.e.*, landowners building permanent structures on the permanent right-of-way), or damage to erosion controls resulting from erosion or washouts. KRGT currently inspects the pipeline system by air on a biweekly basis, weather permitting. This greatly exceeds the DOT requirement for patrolling, which stipulates that pipeline patrols be conducted at least annually.

The existing KRGT pipeline is operated from a centralized Gas Control Center in Salt Lake City, Utah. The existing KRGT/Mojave Common System pipeline is operated by El Paso Natural Gas Company from its Gas Control Center in Colorado Springs, Colorado. These systems are operated and monitored by trained gas control employees 24 hours per day. They constantly monitor the pipeline pressures, flow conditions, and operating conditions of the compressor and meter stations throughout the entire system. The proposed pipeline would also be operated from these Gas Control Centers.

KRGT operates numerous safety systems on its existing pipeline system that would also be used on the Kern River 2003 Expansion Project pipeline. The mechanical type safety controls include relief valves

on the outlet of compressor stations, remotely operated MLVs in populated areas, and low pressure shutdowns on MLVs in populated locations that close when the pressure drops below a certain level. The turbines at each compressor station would be equipped with computer-controlled shutdowns. KRGT would equip the MLVs located upstream and downstream of faults crossed with actuators (see section 4.1.4.1).

Automatic valves would typically close faster than remotely operated valves, which need to be closed from the Gas Control Centers. However, automation is limited in many places on KRGT's system due to the remoteness of the MLVs (radio signal cannot access certain MLVs due to mountain ranges and other obstructions to radio signals). If a situation occurs that may require closure of a MLV, a gas control worker in the applicable Gas Control Center would attempt to verify that a situation exists that may result in impacts on public safety or damage to personal property. This is done to prevent unnecessary closure of MLVs that could be detrimental to customers connected to the pipeline. The gas control worker has the authority to make the decision to close the MLV, but may also consult with the Manager of Gas Control, Director of Operations Support, or a local field representative. During normal operation of the pipeline, there is a 2-minute interval between scans on the Supervisory Control and Data Acquisition (SCADA) system. If an event alarms at the Gas Control Center, the gas control worker can put the individual site(s) on a faster interval scan where the SCADA system scans those sites at a faster rate so that any unfolding events can be quickly analyzed. If the gas control worker determines that it is necessary to close a MLV, a "close" command would be sent to the MLV. The MLV site communication would verify that the command is received, and the gas control worker would send a second "close" command to reconfirm the request. Once the second close command has been received, the MLV would close. The typical time that it takes to close a MLV on a large-diameter pipeline is approximately 2 minutes. The total time from the first close command to the MLV closure can be as little as 3 to 4 minutes.

KRGT's existing compressor stations are equipped with combustible gas and fire detection alert systems and an emergency shutdown system. All of these existing systems would be modified to include the new equipment. KRGT's gas detection system is designed to sound an alarm upon detection of 25 percent of the lower explosive limit of natural gas in air. Automatic emergency shutdown of the compressors, evacuation or venting of gas from the station pipeline, and isolation of the station from the main pipeline would occur following a fire detection alarm or the detection of a 50 percent lower explosive limit inside the station. KRGT's compressor stations are also equipped with relief valves or pressure protection devices to protect the station piping from overpressure if station or unit control systems failed. A telemetry system would notify KRGT personnel locally and at the Gas Control Center of the activation of safety systems and alarms. These personnel would in turn instruct maintenance personnel to investigate and take proper corrective actions.

KRGT has in place a policy to ensure its operations employees identify safety-related (unsafe) conditions and follow company procedures in reporting these conditions to their management. The operations management then confirms the existence of a potential safety-related condition, and establishes communication with the pipeline safety manager. KRGT's policy contains flow charts for evaluating defects to determine what remedial action is required. Examples of defects evaluated with these flow charts include leaks, dents, corrosion, mechanical damage and imperfection, and arc burns. Each step in the flowchart requires personnel to evaluate the defect from an array of criteria. A required course of action is then determined once the flow chart steps are completed.

The first step in KRGT's procedure for the repair or replacement of damaged pipe is to take immediate action to protect the safety of the public and company personnel. Once the work area is safe, qualified KRGT personnel evaluate the pipe to determine if the pipe is leaking, if there is coating damage, surface scratching of the pipe, gouging or removed metal, dents, or cracking of the pipe. KRGT personnel evaluate the extent of the defect, taking into account the circumferential as well as overall extent of the defect. The severity and characteristics of the damage are evaluated using several methods, depending upon

the defect. For example, dye-penetrant material finds cracks that may result from third-party mechanical damage. Third-party damage can also produce dents in the pipe. The dents are measured and if they exceed certain criteria, they are either repaired or cut out. If corrosion is the cause of the defect, the areas of corrosion are measured and repaired, if necessary. Before making repairs, the pipeline pressure would be reduced if necessary to a safe level based upon the preliminary determination of the defect. After repairs are performed, the pipe is recoated, backfilled, and placed into operation.

KRGT's compressor station crews would perform operation and maintenance of the new and existing equipment. KRGT would perform routine checks of the facilities, including calibration of equipment and instrumentation, inspection of critical components, and scheduled and routine maintenance of equipment. Safety equipment, such as pressure relief devices, fire detection and suppression systems, and gas detection systems, would be periodically tested for proper operation.

The number of employees KRGT has dedicated to pipeline monitoring, safety inspections, and facility audits varies from day to day on the pipeline system. It is KRGT's policy that every employee involved in operations and maintenance has a pipeline safety responsibility.

KRGT is required to monitor its entire system once a year for changes in population density. When these changes occur, KRGT is required to ensure that the installed pipeline meets the criteria for pipe design that applies in the higher class location. If it does not meet these requirements, the pipe is replaced, the operating pressure in the line is reduced, or similar safety measures are undertaken by KRGT to achieve the required margin of safety.

Federal law requires KRGT to have public education programs. KRGT would provide residents who live along the rights-of-way with information about the pipeline, including what activities to look for and what to do in an emergency. KRGT would provide these residents with information and emergency phone numbers to call in the event of seeing anything unusual. KRGT would work with local emergency response officials to educate them about the nature of its operations and the appropriate actions to take if there is an accident.

All of these operation and maintenance procedures are documented in a written plan KRGT developed in accordance with Title 49 CFR Part 192. KRGT has provided its operation and maintenance plan to the CSLC per its request. This plan, however, does not include specifications for conducting instrumented internal inspections using a high-resolution device commonly known as a "smart pig." Although not currently required by the OPS, an instrumented internal inspection on a periodic basis with a high-resolution tool is a proactive method of determining the mechanical integrity of a pipeline (*e.g.,* by obtaining data that show whether or not corrosion is occurring internally or externally and/or if other damage anomalies have occurred along the pipeline) as well as verifying that the cathodic protection system is protecting the external wall of the pipeline. To ensure implementation of maximum feasible mitigation (as defined by the CEQA) and to assist the CSLC in reviewing KRGT's project for consistency with the CSLC's action on the new or amended leases across California School Lands, **the Agency Staffs recommend the following measure:**

- **<u>Before placing the pipeline system into service in California</u>, KRGT shall submit to the CSLC for approval a revised operation and maintenance plan. The revised plan shall address internal and external maintenance inspections of the completed facility, including details of integrity testing methods to be applied, corrosion monitoring and testing of the cathodic protection system, and leak monitoring. The plan shall also specify that KRGT shall, unless expressly prohibited by DOT regulations, conduct an internal inspection with a high-resolution instrument on a periodic basis, at a minimum of one inspection every 10 years, or sooner if the evidence suggests that**

significant corrosion or defects exist or if any new Federal or state regulations require more frequent or comparable inspections. Within 3 months following the promulgation of any new Federal or state regulations, KRGT shall update the plan and submit a revised copy to the CSLC.

Under Title 49 CFR Part 192, Section 192.615, each pipeline operator must also establish an emergency response plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. While KRGT's primary safety focus is accident prevention, KRGT has, in accordance with Part 192, developed an emergency response plan for the proposed project based on its current plan, which would be coordinated and tested (through drills and exercises) with local fire/police departments and emergency management agencies. This plan would also be reviewed by the DOT OPS and is subject to DOT rules and regulations. KRGT has provided its emergency response plan to the CSLC per its request. Key elements of the emergency response plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- making personnel, equipment, tools, and materials available at the scene of an emergency;
- protecting people first and then property, and making them safe from actual or potential hazards; and
- emergency shutdown of the system and safe restoration of service.

KRGT maintains 24-hour emergency response capabilities, including an emergency-only toll-free telephone number. The number is included in informational mail-outs, posted on all pipeline markers, and provided to local emergency agencies in the vicinity of the pipeline.

KRGT currently meets with the emergency services departments of the municipalities and counties along its existing pipeline facilities. Fire and safety equipment is maintained along the pipeline system, and KRGT personnel and local emergency response groups are trained in response procedures. KRGT personnel consult with local fire departments and emergency response agencies to determine if additional equipment, training, and preparedness support are needed and provide additional equipment, training, and support where the needs are identified. KRGT provides these departments with the 24-hour emergency numbers and verbal, written, and mapping descriptions of the pipeline system. KRGT representatives also meet with all local emergency service units on an on-going basis. These procedures would continue for the Kern River 2003 Expansion Project.

To assist the CSLC in reviewing the project for consistency with its action to issue to KRGT new right-of-way leases or to amend the existing leases across California School Lands, KRGT would provide the following documents pertaining to the California portion of the project to the CSLC within 120 days of the completion of work in California:

- a set of "as built" construction plans, certified by a California-registered civil/structural engineer, showing all design changes or other amendments to the construction as originally approved;

- certified copies of all completed pipeline integrity test results (hydrostatic tests, gauging runs, etc.) including copies of any failed test results with an explanation of the reason for failure; and

- a post-construction written narrative report confirming completion of the project with discussion of any significant field changes or other modifications to the approved design or execution plan, and providing details of any extraordinary occurrences such as spill incidents and accidents involving serious injury or loss of life, and a summary of a quality control and weld inspection program including all failed and repaired welds.

4.12.2 Pipeline Accident Data

Since February 9, 1970, Title 49 CFR Part 191 has required all operators of transmission and gathering systems to notify the DOT of any reportable incident and to submit a report on form F7100.2 within 20 days. Reportable incidents are defined as any leaks that:

- caused a death or personal injury requiring hospitalization;

- required taking any segment of transmission line out of service;

- resulted in gas ignition;

- caused estimated damage to the property of the operator, or others, of a total of $5,000 or more;

- required immediate repair on a transmission line;

- occurred while testing with gas or another medium; or

- in the judgement of the operator was significant, even though it did not meet the above criteria.

The DOT changed reporting requirements after June 1984 to reduce the amount of data collected. Since that date, operators must report only incidents that involve property damage of more than $50,000, injury, death, or release of gas, or that are otherwise considered significant by the operator. Table 4.12.2-1 (below) presents a summary of incident data for the periods 1970 to 1984 and 1986 to 2001, recognizing the difference in reporting requirements. The 14.5-year period from 1970 through June 1984, which provides a larger universe of data and more basic report information than subsequent years, has been subject to detailed analysis as discussed in the following sections (Jones *et al.*, 1986).

TABLE 4.12.2-1

Industry Service Incidents by Cause per 1,000 miles-year (percentage)

Cause	1970 to 1984	1986 to 2001
Outside forces	0.70 (54%)	0.10 (40%)
Corrosion	0.22 (17%)	0.06 (23%)
Construction or material defect	0.27 (21%)	0.03 (14%)
Other	0.11 (8%)	0.06 (23%)
Total	1.30	0.25

During the 14.5-year period, 5,862 service incidents were reported over the more than 300,000 total miles of natural gas transmission and gathering systems nationwide. Of the 5,862 incidents, 20 incidents resulted in fatalities, 191 incidents resulted in injuries, and 22 incidents had both fatalities and injuries. While the total number of incidents works out to more than one incident per day, the total number of deaths in this period was 74, and the total number of injuries was 438, or 5 deaths and 30 injuries per year during this period. Service incidents, defined as failures that occur during pipeline operation, remained fairly constant over this period with no clear upward or downward trend in annual totals. In addition, 2,013 test failures were reported. Correction of test failures removed defects from the pipeline before operation.

Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 4.12.2-1 (page 4-270) provides a percentage distribution of the causal factors, as well as the annual frequency of each factor per 1,000 miles of pipeline in service.

The pipelines included in the data set in table 4.12.2-1 (page 4-270) vary widely in terms of age, pipe diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

The dominant incident cause is outside forces, constituting 53.5 percent of all service incidents between 1970 and 1984. Outside forces incidents result from the encroachment of mechanical equipment, such as bulldozers and backhoes; from earth movements due to soil settlement, washouts, or geological hazards; from weather effects, such as winds, storms, and thermal strains; and from willful damage. Table 4.12.2-2 (below) shows that human error in equipment usage was responsible for about 75 percent of outside force incidents. Since April 1982, operators have been required to participate in "One-call" public utility programs in populated areas, to minimize unauthorized excavation activities in the vicinity of pipelines. The One-call program is a service used by public utilities and some private sector companies (*e.g.*, oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. The 1986 through 2001 data show that the portion of incidents caused by outside forces has decreased to 40 percent.

TABLE 4.12.2-2

Outside Forces Incidents by Cause (1970 to 1984)

Cause	Percent
Equipment operated by outside party	67.1
Equipment operated by or for operator	7.3
Earth Movement	13.3
Weather	10.8
Other	1.5

The frequency of service incidents is strongly dependent on pipeline age. While pipelines installed since 1950 exhibit a fairly constant level of service incident frequency, pipelines installed before that time have a significantly higher rate, partially due to corrosion. Older pipelines have a higher frequency of corrosion incidents, since corrosion is a time-dependent process. Further, more advanced coatings and cathodic protection to reduce corrosion potential are generally used on newer pipe.

Older pipelines have a higher frequency of outside forces incidents, partly because their location may be less well known and less well marked than newer lines. In addition, the older pipelines contain a disproportionate number of smaller diameter pipelines, which have a greater rate of outside forces incidents. Small-diameter pipelines are more easily crushed or broken by mechanical equipment or earth movements.

Table 4.12.2-3 (below) clearly demonstrates the effectiveness of corrosion control in reducing the incidence of failures caused by external corrosion. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, significantly reduces the rate of failure compared to unprotected or partially protected pipe. The data show that bare, cathodically protected pipe actually has a higher corrosion rate than unprotected pipe. This anomaly reflects the retrofitting of cathodic protection to actively corroding spots on pipes.

TABLE 4.12.2-3

External Corrosion by Level of Control (1970 to 1984)

Corrosion Control	Incidents per 1,000 miles/year
None - bare pipe	0.42
Cathodic protection only	0.97
Coated only	0.40
Coated and cathodic protection	0.11

4.12.3 Impact on Public Safety

The service incidents summarized in table 4.12.2-1 (page 4-270) include pipeline failures of all magnitudes with widely varying consequences. About two-thirds of the incidents were classified as leaks; the remaining one-third were classified as ruptures, implying a more serious failure. Fatalities or injuries occurred in 4 percent of the service incidents reported in the 14.5-year period from 1970 through June 1984.

Table 4.12.3-1 (below) presents the average annual fatalities that occurred on onshore and offshore natural gas transmission and gathering lines from 1970 to 2001. The data show that the total annual average for the period 1984 through 2001 was 3.1 fatalities per year for onshore pipeline. The simplified reporting requirements in effect after June 1984 do not differentiate between employees and nonemployees.

TABLE 4.12.3-1

Annual Average Fatalities – Gas Transmission and Gathering System a/ b/

Year	Employees	Nonemployees	Total
1970 to June 1984	2.4	2.6	5.0
1984 to 2001	NA	NA	4.1
1984 to 2001	NA	NA	3.1 c/

a/ 1970 through June 1984 – Jones, *et al.*, 1986.

b/ U.S. DOT Hazardous Materials Information System.

c/ Without 18 offshore fatalities occurring in 1989 – 11 fatalities resulted from a fishing vessel striking an offshore pipeline and 7 fatalities resulted from an explosion on an offshore production platform.

NA = Employee/nonemployee breakdown not available after June 1984.

The nationwide totals of accidental fatalities from various manmade and natural hazards as listed in table 4.12.3-2 (page 4-273) provide a relative measure of the industry-wide safety of natural gas pipelines. Direct comparisons between accident categories should be made cautiously, because individual exposures to hazards are not uniform among categories. Nevertheless, the average of 3.1 public fatalities per year is relatively small considering the more than 311,000 miles of transmission and gathering lines in service nationwide.

TABLE 4.12.3-2

Annual Nationwide Accidental Deaths a/

Type of Accident	Fatalities
All accidents and adverse effects (1990, 1995, 1997, 1998 average)	93,525
Motor vehicles (1990, 1994-1998 average)	42,114
Railroad accidents (1990-1998 average)	1,158
All liquid and gas pipelines (1986-2001 average)	24.6
Gas Transmission and gathering lines (1986-2001 average) b/	3.1

a/ All data, unless otherwise noted, reflect statistics from the U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States 118th Edition (Published 1998).

b/ U.S. Department of Transportation, Office of Pipeline Safety, 2002, http://ops.dot.gov/stats.htm.

A recent incident near Carlsbad, New Mexico resulted in 12 fatalities. At this time, National Transportation Safety Board (NTSB) and OPS investigators are investigating the causes of this incident. NTSB and OPS investigators at the accident site observed internal corrosion in the section of the pipe that failed, but until laboratory analysis is performed, it is too early to say what caused the pipe to rupture. The NTSB is responsible for determining the cause of the failure and is conducting laboratory tests to identify any flaws or corrosion in the walls of the pipe. The NTSB will also examine the company's record and maintenance procedures. The OPS has ordered the section of the pipeline that failed, as well as two pipelines adjacent to the failed pipeline, to be shut down until the OPS determines that they can be operated safely. The OPS is independently determining whether the Federal pipeline safety regulations it established were violated and whether to take additional enforcement actions against the operator if there is probable cause to believe there were violations (DOT, 2001). Despite this recent incident, the available data show that natural gas pipelines continue to be a safe, reliable means of energy transportation. Based on approximately 311,000 miles in service, the rate of public fatalities for the nationwide mix of transmission and gathering lines in service is about 0.01 per 1,000 miles per year. Using this rate, the Kern River 2003 Expansion Project might be expected to result in a public fatality every 139.4 years. Based on these numbers, the proposed KRGT facilities would represent only a slight increase in risk to the nearby public.

During agency scoping, representatives of Edwards AFB commented on the proposed pipeline's proximity to an existing railroad track, and on the potential conflicts with flight paths and emergency flight/landing procedures during construction of the proposed facilities on the base property. Regarding the existing railroad, the closest offset of the proposed pipeline from the Atchison, Topeka, and Santa Fe Railroad is approximately 650 feet. At this distance, a train derailment should not be a risk to the pipeline. The nearest runways associated with two airports identified on Edwards AFB are at least 1 mile from the pipeline facilities. No major aboveground facilities would be constructed in this area, and no additional safety concerns are anticipated related to the construction or operation of the pipeline in the vicinity of Edwards AFB flight paths. There are no aboveground structures associated with the pipeline operation that would interfere with emergency flight/landing procedures. Construction equipment would be present during the construction phase for a period of a few months. Potential hazards associated with the equipment and Edwards AFB procedures are not anticipated, and would be no different than potential hazards from other construction activity occurring north of the base.

4.13 CUMULATIVE IMPACTS

Both NEPA and CEQA require lead agencies to consider the cumulative impacts of proposals under their review. Cumulative impacts may result when the environmental effects associated with a proposed project are superimposed on or added to either temporary or permanent impacts associated with past, present, or reasonably foreseeable future projects. Although the individual impact of each separate project might not be significant, the additive effects of multiple projects could be.

Existing environmental conditions in the project area reflect changes based on past projects and activities. Much of the project area is rural and relatively undeveloped. About 93 percent of the proposed pipeline would be located adjacent to KRGT's existing pipeline. Because the right-of-way associated with KRGT's existing pipeline is 12 years old, it is considered an existing condition. Construction of the proposed pipeline would result in only an incremental increase in this existing right-of-way. However, significant changes to portions of the project area have resulted from activities related to agriculture, grazing, mining, water diversion, transportation projects, recreation, and exotic species introductions.

Table 4.13-1 (page 4-275) lists the present or reasonably foreseeable future projects or activities that may have a cumulative or additive impact on resources that would be affected by construction of the Kern River 2003 Expansion Project. Projects and activities included in this analysis are generally those located within the same counties directly affected by construction of the Kern River 2003 Expansion Project. More distant projects are not assessed because their impact would generally be localized and therefore would not contribute significantly to cumulative impact in the proposed project area. Electric generation facilities that are proposed to be built or expanded are included in this analysis because the pollutants emitted from these facilities could potentially have a cumulative effect on the region's air quality. Although several of these projects reflect the growing demand for energy, not all of the projects are likely to be constructed. Additionally, while the tentative construction schedule for these projects has been identified when available, the actual construction schedules of these projects will depend on factors such as economic conditions, the availability of funds, and political considerations.

The potential cumulative impacts associated with each resource are discussed below.

4.13.1 Geology and Soils

The Kern River 2003 Expansion Project facilities are expected to have a temporary impact on near-surface geology and soils. Since these effects would be highly localized and limited primarily to the period of construction, cumulative impacts on geology and soils would only occur if other projects are constructed at the same time and place as the KRGT facilities. Only a few of the projects listed in table 4.13-1 (page 4-275) are proposed to occur at the same locations as KRGT's facilities. Although the exact construction schedules for these projects are unknown, it is possible that one or more of these projects could be built at the same time as KRGT's facilities. If this occurs, some cumulative impact on geology and soils could result. This cumulative impact would be minimized, however, by implementation of erosion control and restoration measures during the construction and restoration of the various projects. Consequently, potential cumulative impacts on geological resources and soils would be minor.

TABLE 4.13-1

Existing or Proposed Activities Cumulatively Affecting Resources of Concern for the Kern River 2003 Expansion Project

Activity	Location	Description	Anticipated Construction Dates
Pipeline Projects			
Williams Energy Services - Upgrade of Opal Gas Plant	Lincoln County, Wyoming	Re-piping at the existing plant coalescer, installation of a Taurus 70 turbine (10,310 hp ISO) and a C451 compressor, and associated foundation and piping work .	Completed March 2002
Jonah Gas Gathering Company - Opal Loop Natural Gas Pipeline and Compressor Station	Sublette, Sweetwater, and Lincoln Counties, Wyoming	50.3 miles of 20-inch-diameter pipeline adjacent to the existing Bird Canyon Pipeline from Bird Canyon to Opal, 9,000 horsepower (hp) of additional compression at the Bird Canyon Compressor Station.	Pipeline completed December 2001. Compressor station completed May 2002.
Southern California Gas - Adelanto Lateral	Adelanto and Kramer Junction, San Bernardino County, California	32-mile-long lateral pipeline and meter station designed to measure and deliver up to 200 thousand cubic feet per day of natural gas.	Completed March 2002
Williams Pipeline Company (Williams) - Williams Products Pipeline	New Mexico, Colorado, Utah. Utah counties include: Utah, Juab, Sanpete, Carbon, Emery, Grand, and San Juan	262 miles of new 12-inch-diameter pipeline between Crescent Junction, Utah and North Salt Lake City, Utah of which 67 miles would be adjacent to the existing KRGT natural gas pipeline system; conversion of 220 miles of existing 10- and 12-inch-diameter pipeline between Crescent Junction, Utah and Bloomfield, New Mexico; new terminal and pump station north of Nephi, Utah.	2004
Questar Pipeline Company (Questar) - Questar Pipeline	Utah, Sanpete, and Carbon Counties, Utah	75 miles of 24-inch-diameter pipeline from west of Price, Utah to an interconnect with the existing KRGT natural gas pipeline system west of Elberta, Utah; additional compression at the Oak Spring Station.	Completed November 2001
Williams - KRGT California Emergency Action	Lincoln County, Wyoming; Millard, Utah, and Washington Counties, Utah; Clark County, Nevada; and San Bernardino, California	Provide an additional 135,000 dekatherms per day; upgrade/restage existing compressors at Muddy Creek, Fillmore, and Goodsprings Compressor Stations and install compressors at three new sites; Elberta, Veyo, and Daggett.	Completed June 2001
Williams - 2002 Kern River Expansion	Lincoln County, Wyoming; San Bernardino, California	Completion of facilities not associated with the KRGT Emergency California Action; new turbine compressor package at Muddy Creek Compressor Station; install an electric-driven compressor at Daggett Compressor Station, and new meter runs at the existing Opal Meter Station.	Completed April 2002
Questar - Southern Trails Pipeline	New Mexico, Utah, Arizona, several counties in California including San Bernardino	Conversion of 675 miles of crude oil pipeline to natural gas pipeline from Los Angeles, California to San Juan New Mexico; 65 miles of new pipeline including extensions, reroutes, replacements, and excavations; seven new compressor stations, of which six would be located on existing oil pump station sites (three in California, two in Arizona, one in Utah, and one in New Mexico).	Fall 2001 - Summer 2002
Northwest Pipeline Corporation - Rockies Expansion Project	Lincoln and Sweetwater Counties, Wyoming; Bear Lake, Caribou, and Bannock Counties, Idaho	91.1 miles of 24- and 30-inch-diameter pipeline in six loops mainly adjacent to Northwest Pipeline Corporation's existing mainline; modifications to seven compressor stations for a net increase of 24,924 hp of compression; and nine contractor yards.	Spring - Fall 2003

TABLE 4.13-1 (cont'd)

Existing or Proposed Activities Cumulatively Affecting Resources of Concern for the Kern River 2003 Expansion Project

Activity	Location	Description	Anticipated Construction Dates
Power Generation/Transmission Projects			
Cogentrix Energy - Toquop Energy Power Plant	Near Mesquite, Lincoln County, Nevada	Natural gas-fired 1,100-megawatt (MW) combined cycle power plant, 1,000-foot-long natural gas lateral pipeline, and meter station.	Fall 2002 - Fall 2004
Calpine Corporation - Moapa Paiute Energy Center	Clark County, Nevada	Natural gas-fired 760-MW power plant; two 230 kilovolt (kV) transmission lines; an access road; a 4,000- to 6,000-foot-long, 20-inch-diameter natural gas lateral pipeline and meter station; borrow pits; a well field; water lines; staging areas; and railroad sidings.	Spring 2003 - Spring 2005
Mirant Las Vegas L.L.C. - Apex Generating Station	Clark County, Nevada	Natural gas-fired, air-cooled 1,100-MW power plant, two 500-kV transmission lines within a 150-foot-wide utility right-of-way corridor.	April 2001 -October 2002 (first unit); early 2004 (second unit)
Reliant Energy (Reliant) - Arrow Canyon Power Plant	Clark County, Nevada	Natural gas-fired, air-cooled 500-MW power plant, transmission lines; a 2-mile-long, 16-inch-diameter natural gas lateral pipeline; and ancillary components.	Indefinitely deferred
Reliant - Bighorn Power Plant	Clark County Nevada	Natural gas-fired combined cycle 580-MW power plant, transmission lines; a 3.2-mile-long, 16- to 20-inch-diameter natural gas lateral pipeline; and ancillary components.	Fall 2001 - Spring 2003
Duke Energy Moapa, L.L.C. - Moapa Energy Facility	Clark County, Nevada	Natural gas-fired, air-cooled 1,200-MW power plant; two proposed 4.78-mile-long, 500-kV transmission lines; and a 3.75-mile-long, 16-inch-diameter natural gas pipeline.	Fall 2001 - Spring 2003
Pacific Gas & Electric National Energy Group - Meadow Valley Generating Project	Clark County, Nevada	Natural gas-fired, air-cooled 1,000-MW power facility; approximate 19.3-mile-long, 500-kV alternating current transmission line; 0.8-mile-long, 20-inch-diameter natural gas supply line; 0.8-mile-long, 20-inch-diameter wastewater discharge line; a 17.5-mile-long, 20-inch-diameter water pipeline; 8.5-mile-long, 20-inch-diameter water pipeline; 9-mile-long, 69-kV transmission line; substation; 9-mile-long, 34.5-kV (maximum) distribution line.	Fall 2001 - Spring 2004
Pinnacle West Energy - Silverhawk Power Station	Clark County, Nevada	Natural gas-fired combined cycle 570-MW power plant at Apex Industrial Park.	Spring 2002 - Spring 2004
Overton Power District - Tortoise Power Plant	Clark County, Nevada	Natural gas-fired 60-MW additional peaking.	Operational 2002
Black Hills - Las Vegas Cogeneration II	North Las Vegas, Clark County, Nevada	Natural gas-fired combined cycle 230-MW power plant.	Completed May 2002 with commercial operation commencing by September 2002
Sempra - Copper Mountain Power	Clark County, Nevada	Natural gas-fired combined cycle 500-MW power plant located adjacent to the existing El Dorado Energy facility.	Spring 2003 - Fall 2004
Nevada Power - Southern Nevada Centennial Projects	Clark County, Nevada	100 miles of new transmission line to connect and deliver power from generation facilities located in three general areas: Apex, Stateline, and Eldorado Valley.	2002 - 2004

TABLE 4.13-1 (cont'd)

Existing or Proposed Activities Cumulatively Affecting Resources of Concern for the Kern River 2003 Expansion Project

Activity	Location	Description	Anticipated Construction Dates
		Apex New 500-kV switchyard at Harry Allen and a new 500-kV transmission line from the Harry Allen to the Crystal substations. New 500-kV transmission line from the Harry Allen to Mead substations and a WAPA substation, located in the El Dorado Valley south of Boulder City. New 500-kV transmission line from the Harry Allen substation to Nevada Power's existing Northwest substation located near US 95 and Kyle Canyon Road; a new 500-kV switchyard located adjacent to the existing Northwest 230/138/12-kV substation. Stateline New double-circuit 230-kV line from Primm to Nevada Power's existing Jean substation; a new double-circuit line from the Jean to the Arden substations. Eldorado Reconduct the existing Nevada Power Craig Highland 138-kV Line located in the jurisdiction of the City of North Las Vegas and the City of Las Vegas.	
Victorville Gas, L.L.C. - High Desert Power Project	Victorville, San Bernardino County, California	Natural gas-fired 720-MW power facility; new electric 230-kV switchyard; a 7.3-mile-long transmission line; and a 32-mile-long, 24-inch-diameter natural gas lateral pipeline.	April 2001 - Summer 2002
AES - Antelope Valley	Kern County, California	Natural gas-fired1,000-MW power facility.	TBD
Sempra Energy Resources and Occidental Energy Ventures Corp. - Elk Hills Power Project	Kern County, California	Natural gas-fired 570-MW generating station. 300 MW simple cycle operation of the plant to begin in the spring of 2002 with full; combined cycle operation projected to start in spring of 2003.	2001 - 2003
Pastoria Energy Facility L.L.C. - Pastoria Power Plant	Kern County, California	Natural gas-fired 750-MW combined cycle power plant; a new 230-kV electric switchyard; a 1.38-mile-long double circuit 230-kV overhead transmission line; and an 11.65-mile-long, 16- to 20-inch-diameter natural gas pipeline.	May 2000 - Spring 2004
La Paloma Generating Company, L.L.C. - La Paloma Power Plant	Kern County, California	Natural gas-fired 1,048-MW power facility.	May 2000 - Summer 2002
Planned Local Developments, Commercial, or Residential			
Hotel Construction	200 feet north of MP 87.3 (Coyote Creek Loop 1)	New hotel and parking lot. Estimated land requirement is 2 acres.	Completed Fall 2001
Park and Preservation Area	MPs 135.5-136.5 (Salt Lake Loop)	Future park and preservation area bordering the pipeline route. Approximately 370 acres. Proposed by West Valley City within the next 5 to 15 years.	2007 - 2017
Legacy Highway/Western Transportation Corridor	MPs 141.5-146.7 (Salt Lake Loop)	Potential new highway construction following 5900 West Street proposed by the Utah Department of Transportation and the City of Jordan. Approximately 190 acres based on a 300-foot cross section. Anticipated construction within 5 to 15 years.	2007 - 2017
School Construction	MP 151.0 (Salt Lake Loop)	Two new elementary schools approximately 0.5 mile west of the existing KRGT pipeline and proposed pipeline route are planned by the City of Riverton and the Jordan School District. Each site would occupy about 12 acres.	2007

TABLE 4.13-1 (cont'd)

Existing or Proposed Activities Cumulatively Affecting Resources of Concern for the Kern River 2003 Expansion Project

Activity	Location	Description	Anticipated Construction Dates
Residential Development	MPs 154.2, 154.4, and 155.5 (Salt Lake Loop)	In the City of Bluffdale, Utah, the pipeline route would pass through three planned developments. From north to south: Scenic Ridge Estates is currently under construction and will encompass about 20 acres; an unnamed development in the planning stages could begin construction in 2002 and would occupy about 10 acres; and Stoneleigh Heights would encompass about 700 acres and is scheduled to begin construction in the spring of 2002.	2001 - 2002
Widening Interstate 15	Clark County, Nevada	Nevada Department of Transportation is planning to begin widening Interstate 15 between the California/Nevada state line and Primm. The widening includes a 20-mile-long southbound segment from Primm to the state line and a 3-mile-long northbound segment near Primm. The widening is taking place in the median, leaving two existing lanes open in each direction.	Late 2001 - Early 2002
Fort Irwin National Training Center Expansion	San Bernardino County, California	Legislation (PL-106-554) to expand Fort Irwin National Training Center by 132,000 acres, subject to NEPA compliance and Section 7 consultation.	Still in environmental review process, start date, if approved, unknown.
Caltrans Highway 58 Realignment	San Bernardino County, California	Approximately 12.5 miles of Highway 58 realignment from west of Hinkley to Barstow.	Still in environmental review process, start date, if approved, unknown.
Federal Detention Center	Lenwood, San Bernardino County, California	1,500-bed detention facility for illegal aliens located more than 1 mile from the pipeline route.	Unknown

4.13.2 Water Resources

The proposed Kern River 2003 Expansion Project would not involve construction of permanent diversions or dams, and therefore is expected to have only temporary impacts on surface water quality. Cumulative effects on surface water resources affected by the proposed project would be limited primarily to waterbodies that are affected by other projects located within the same watershed as KRGT's facilities. Direct in-stream effects associated with open-cut crossings would result in the greatest impact on water resources. Runoff from construction activities near waterbodies could also result in cumulative impacts, although this effect would be relatively minor and would be controlled by implementation of erosion and sediment controls. The majority of the projects listed in table 4.13-1 (page 4-275) are located across a wide geographic area spanning several hydrologic basins. Additionally, many of the projects would not involve direct in-stream impacts. Therefore, the collective effects of these projects on surface water resources are expected to be minor.

An exception to this would be where the proposed Williams Product Pipeline could be constructed adjacent to the proposed pipeline route for about 65 miles in Utah between approximate MPs 124.5 and 189.0. The proposed Williams pipeline would cross 12 perennial waterbodies, including 3 natural drainages and 9 canals, that are also crossed by KRGT's proposed pipeline. If constructed around the same time, the two projects could effectively double the impact of increased sedimentation and turbidity on these waterbodies; however, none of the affected waterbodies contain high value fisheries or municipal water intakes downstream of the proposed pipeline crossing areas. These effects would be mitigated by several factors. First, the effect of each crossing would be of short duration and would dissipate quickly after the crossing is completed. KRGT would minimize impact on these waterbodies by implementing its WWCM Procedures and restoring and stabilizing the streambanks after construction. The BLM conducted an analysis of the Williams Product Pipeline in its Questar, Williams, Kern River Final EIS (QWK EIS) dated June 2001. The construction and mitigation measures described in the QWK EIS are very similar to KRGT's WWCM Procedures because both are based on the FERC Procedures. The QWK EIS concludes that implementation of Williams' mitigation procedures would minimize the impacts of its project on waterbodies. Additionally, both KRGT's and Williams Product Pipeline construction activities at waterbody crossings would be in accordance with Federal, state, and local permit requirements, which may require additional mitigation measures.

The proposed project is not expected to contribute to cumulative impact on groundwater resources. No new high volume groundwater extraction wells or irrigation systems are proposed by KRGT. The effects of blasting on water supply wells would be limited to the pipeline right-of-way and are not anticipated to result in a long-term impact on groundwater resources. Reestablishment of preconstruction contours and vegetation would allow surface waters to infiltrate back into groundwater recharge areas; therefore, proposed project activities are not expected to affect the groundwater quality or quantity currently available.

4.13.3 Wetlands

The only wetlands crossed by the proposed project are in Wyoming and Utah. None of the wetlands crossed would be permanently filled or drained as a result of the project. A cumulative impact on wetlands could occur where the proposed KRGT pipeline would be constructed adjacent to the planned Williams Product Pipeline. As described above under water resources, the two pipeline routes are adjacent to one another between KRGT's MPs 124.5 and 189.0. In that segment, the KRGT route crosses 43 wetland areas and would result in a total disturbance of 37.5 acres. Section 4.4 discusses the expected impact on wetlands and determines that, because all of the wetlands are classified as emergent, the impacts would be temporary to short term and the implementation of KRGT's proposed WWCM Procedures would reduce those impacts to less than significant levels. The QWK EIS concludes that implementation of William's mitigation procedures would minimize the impacts of its project on wetlands. KRGT and Williams would both be

required to comply with conditions included in their COE permits and state water quality certifications. Because no significant impact would occur, the project is not expected to contribute to cumulative impacts on wetland resources.

4.13.4 Vegetation and Wildlife

When projects are constructed at the same time, or are timed closely together, they would have a cumulative impact on vegetation and wildlife living in the area where the projects would be built. The removal of woodland, desert, and semi-desert vegetation would have long-term consequences because the regeneration of vegetation in arid and semi-arid environments is slow.

When considered with other present and foreseeable future projects in the area, the Kern River 2003 Expansion Project would have a cumulative impact on vegetation and wildlife. Site and right-of-way clearing and excavations for the pipeline and other projects would remove vegetation and wildlife habitat, displace wildlife, and could result in many secondary effects including increased stress, predation, fragmentation, OHV use, and establishment of exotic or noxious weeds. These effects would be greatest where other projects are constructed within the same time frame and area as the proposed KRGT facilities (*e.g.*, the Williams Product Pipeline).

The total amount of vegetation that may be affected by all of the proposed projects listed in table 4.13-1 (page 4-275) is substantial but still relatively small compared to the abundance of the habitat in the project area. While these projects could potentially fragment vegetation habitat, this effect would be minimal because no densely forested areas would be crossed by the proposed pipeline. This effect would be further reduced by the collocation of many of these projects (nearly all the pipeline and road projects) with existing rights-of-way. All of the projects would involve mitigation measures designed to minimize the potential for long-term erosion, increase the stabilization of site conditions, and in many cases control the spread of noxious weeds, thereby minimizing the degree and duration of the cumulative impact of these projects.

Regarding sensitive species, compensatory offsite mitigation would likely be required for each of these projects by agencies to offset interim losses in habitat function for desert tortoise and other significant wildlife or vegetation during restoration. Offsite mitigation involves purchasing and providing some protection and potential management to lands in the region that are similar to what would be disturbed, which would reduce overall impacts on vegetation and wildlife.

4.13.5 Land Use

The Kern River 2003 Expansion Project and several of the other foreseeable future projects could result in both temporary and permanent changes to current land uses. Because desert and semi-desert habitats dominate most of the land affected by the Kern River 2003 Expansion Project, the predominant land use in the project area is rangeland. The Kern River 2003 Expansion Project would temporarily disturb about 7,996.0 acres of rangeland, 978.9 acres of developed land, 897.8 acres of agricultural land, 542.3 acres of forest land, 57.6 acres of wetlands, and 24.8 acres of open water. The hundreds of miles of other pipelines, road improvements, and power generating and compression facilities would disturb thousands of additional acres. The proposed expansion of the Fort Irwin NTC would affect about 132,000 acres in San Bernardino County, California. Added to this impact would be hundreds of acres associated with local development projects, such as the new hotel construction that is planned north of the Coyote Creek Loop 1, the Legacy Highway/Western Transportation Center, new Riverton and Jordan district schools, and the planned residential developments in Bluffdale near the Salt Lake Loop.

The Kern River 2003 Expansion Project would incrementally add to the cumulative impact on land uses in the project area. The majority of this additional impact would be temporary, however, as most land

uses would be allowed to revert to prior uses following construction. Some land uses would be restricted or prohibited on the new permanent right-of-way, such as aboveground structures, but because the majority of the pipeline would be located adjacent to other existing rights-of-way, many of these restrictions are already in place.

Permanent impacts on land use would be small and limited primarily to the new compressor stations and other aboveground facilities. The proposed power plants would be located on lands designated or zoned for industrial use. The transmission lines would be located within right-of-way corridors reserved for utilities and designated for that use by the appropriate agencies. Because all of these land uses would be consistent and compatible with the existing plans and zoning, or otherwise would probably not be built, the combination of projects would not significantly contribute to cumulative impacts on land use.

4.13.6 Transportation

The Kern River 2003 Expansion Project is not expected to add significantly to the cumulative impact on transportation. No public roads would be permanently eliminated or created by KRGT's facilities. Several public road expansion projects are planned in the project area, however, over the next 15 years. These include a proposal by the Caltrans to realign a 12- to 13-mile-long portion of State Highway 58 between Hinkley and Barstow, California; a proposal by the Nevada DOT to widen about 23 miles of Interstate 15 between the California/Nevada state line and Primm, Nevada; and a proposal by the Utah DOT to construct a new highway near the City of Jordan, Utah. Based on the schedule of these projects, it seems unlikely that they would be constructed during the same time as the KRGT facilities.

Other road maintenance activities in the project area could include repaving, clearing road shoulders, and similar activities. If these activities occur at the same time and place as the Kern River 2003 Expansion Project, cumulative impacts on traffic could occur. These impacts would be limited to temporary disruptions, such as slower traffic or detours lasting several days at a time. Access to homes and businesses would be maintained during construction. Potential cumulative impacts on transportation are expected to be temporary and short term.

4.13.7 Recreation

OHV use occurs throughout various portions of the project area, peaking during the winter months along the southern portion of the project and the summer months along the northern portion of the project. Construction of one or more of the proposed projects could negatively affect the recreation experience during construction. The presence and movement of construction equipment, materials, and workers may be temporarily disruptive to these recreationists, particularly if more than one project is under construction at any one time. The combination of projects could also cumulatively increase accessibility to sensitive environmental areas by OHV users. KRGT would minimize this impact by working with landowners and land management agencies to identify areas where blocking the right-of-way from OHV use would be appropriate and practical. Therefore, the proposed project would not significantly contribute to cumulative impact on recreation.

4.13.8 Visual Resources

The visual character of the existing landscape is defined by historic and current land uses such as agriculture, recreation, mining, conservation, and to a lesser extent residential or commercial development. The visual qualities of the landscape are further influenced by existing linear installations such as highways, railroads, pipelines, and electrical transmission and distribution lines. Within this context, the proposed compressor stations, electric generation facilities, other aboveground facilities, and transmission lines would have the most visible impact, while the pipeline projects would be visually subordinant to the existing

landscape character and would contribute only incrementally to the overall visual conditions of the surrounding landscape. The total number of proposed aboveground facilities is relatively small and widely distributed and generally would only add marginally to the effect of existing structures in the area. Therefore, the proposed project would not significantly contribute to cumulative impacts on visual resources.

4.13.9 Socioeconomics

Present and reasonably foreseeable future projects could cumulatively impact socioeconomic conditions in the project area. There may be both beneficial and detrimental effects on employment, housing, infrastructure, and public services.

Employment – The projects considered here would have cumulative effects on employment during construction if more than one project is built at a time. For example, the Kern River 2003 Expansion Project expects to employ 400 to 450 people on each of the 10 construction spreads, with an additional 35 to 90 people at each compressor station. The workforce for a typical power generation facility is estimated at 250 (400 workers at peak activity). It is estimated that up to 30 percent of the construction workforce would be local hires. If the larger projects are built simultaneously, the demand for workers is likely to exceed the local supply of appropriately skilled labor. On the beneficial side, the increased demand for workers could reduce current unemployment and perhaps lead to higher wages for the duration of construction. Other indirect employment benefits would include temporary service jobs in the local area (*e.g.*, restaurants and gas stations).

Permanent employment would increase slightly in the project area, with the power plants, hotel, and public facility projects providing the most long-term job opportunities. One of several power generation facilities proposed in the project area, the Moapa Paiute Energy Center, is expected to provide 20 to 30 jobs for plant operations. Assuming the other proposed power generation facilities employ similar numbers of people, the projects would add between 200 and 300 new job opportunities in the southern Nevada and California area. The Kern River 2003 Expansion Project and other pipeline projects, by contrast, would probably add only 12 or fewer new staff each, which would be distributed throughout the project area. Therefore, the proposed project would not significantly contribute to cumulative impact on permanent employment.

Housing – Given the vacancy rates in the area and the number of hotel/motel rooms and camp sites, construction crews should not encounter difficulty in finding temporary housing. The degree of cumulative impact on the housing resources would depend upon the season of project construction and the number of projects being constructed simultaneously. If construction occurs concurrently with other projects and during the peak tourism times (summer months along the northern portion of the route, winter months along the southern portion of the route) temporary housing would still be available but may be slightly more difficult to find and/or more expensive to secure. Regardless, these effects would be temporary, lasting only for the duration of construction, and there would be no long-term cumulative effect on housing.

Traffic - Indirectly, workers' cars and construction trucks and equipment added to the existing traffic levels could contribute to increased traffic congestion during construction. Traffic congestion, however, is not expected to be a major problem in the project area even if several projects are being constructed at once. Specific timing for approval of other reasonably foreseeable projects such as power plant and transmission line improvements cannot be predicted. However, it is unlikely they would reach peak traffic conditions simultaneously. Because most of the roads in the project area currently have little or no congestion, construction workers frequently share rides and travel to and from work during off-peak hours, and the

projects are spread out over a large area with the traffic going to different destinations, potential cumulative impacts on traffic are expected to be temporary and short term.

Infrastructure and Public Services – The cumulative impact of the Kern River 2003 Expansion Project and other projects and activities on infrastructure and public services would depend on the number of projects under construction at one time. The small incremental demands of several projects occurring at the same time could become difficult for police, fire, and emergency service personnel to address. This problem would be temporary, occur only for the length of construction, and could be mitigated by the various project proponents providing their own personnel to augment the local capability or by providing additional funds or training for local personnel. No long-term cumulative effect on infrastructure and public services is anticipated.

4.13.10 Cultural and Paleontological Resources

Past disturbances to cultural resources in the project area have been related to prior studies; accidental disturbance by OHV users; intentional destruction or vandalism; and construction and maintenance operations associated with existing roads, railroads, and transmission lines. Each of the currently proposed projects would include mitigation measures designed to avoid or minimize additional direct impacts on cultural resources. Where direct impacts on significant cultural resources are unavoidable, mitigation (*e.g.*, recovery and curation of materials) would occur before construction. Pressure on nearby sites is likely to continue, however, and would be at least slightly exacerbated by the addition of more cleared rights-of-way in the same general area. Increased access by rights-of-way and service roads would increase the potential for trespass or vandalism at previously inaccessible sites. The proposed pipeline would add incrementally to the effects of the other reasonably foreseeable projects on cultural resources in the project area.

Construction of the Kern River 2003 Expansion Project could also add to the loss of fossil resources as a result of surface-disturbing activities associated with existing and reasonably foreseeable projects. However, if significant paleontological resources are identified, construction would be diverted and data recovered during construction of this project as well as other surface-disturbing projects within the same right-of-way.

4.13.11 Air Quality and Noise

Construction of most of the reasonably foreseeable future projects listed in table 4.13-1 (page 4-275) would involve the use of heavy equipment that produces noise, air contaminants, and dust. Operation of proposed compressor stations and power generation facilities would also contribute cumulatively to both air quality and noise. These effects could add to the ongoing air and noise impacts in the project area. The short-term additional noise during construction could, for example, create enough disturbance to nesting birds to constitute a potential adverse impact. The majority of these effects would be mitigated by the large geographical area over which the various projects are located. Noise impacts are particularly localized and attenuate quickly as the distance from the noise source increases. Therefore, cumulative noise impacts associated with construction would be unlikely unless one or more of the projects occur at the same time in the same location. Air impacts, although less localized than noise impacts, would also tend to be regional and confined primarily to the airsheds in which the projects occur. Cumulative impact on air quality, therefore, would be limited primarily to areas where more than one project is proposed within the same airshed.

Over the long term, KRGT's proposed pipeline and compression facilities would not contribute significantly to the current air pollution levels. KRGT's compressor stations would emit air pollutants, but typically would not be considered a major source and are generally located in rural areas within different geographical areas. During operation of the KRGT facilities, the air emissions from the compressor stations would include the following criteria pollutants: PM_{10}, SO_2, NO_x, CO, and VOC. The primary pollutants resulting from the combustion of natural gas are NO_x and CO. Because all emission units would burn pipeline quality natural gas, the quantity of PM_{10} and SO_2 emissions would be very small and would have a negligible cumulative impact on air quality throughout the project area.

Indirectly, the Kern River 2003 Expansion Project could result in a cumulative impact on the region's air quality by providing natural gas to new or expanded power plants in the project area. KRGT's proposed facilities could potentially provide natural gas to several independent power producer (IPP) power generation plants in Nevada and California (see table 4.13-1 (page 4-275)).

Ambient air quality is primarily a result of the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the meteorological conditions. Ambient air quality standards have been developed by Federal and state governments in order to establish levels of air quality, which when exceeded, may cause adverse effects to human health. Both Nevada and California have established ambient air quality standards. Table 4.13.11-1 (below) compares the ambient air standards that must be met for Nevada, California, and those of the United States.

TABLE 4.13.11-1

Ambient Air Quality Standards Comparison

Pollutant	Nevada Standards	California	Federal	Averaging Period
Ozone	0.12 ppm	0.09 ppm	0.12 ppm	1 hour
Sulfur Dioxide	—	0.25 ppm	---	1 hour
	0.5 ppm	—	0.5 ppm a/	3 hour
	0.14 ppm	0.04 ppm	0.14 ppm	24 hour
	0.03 ppm	—	0.03 ppm	Annual
Nitrogen Dioxide	—	0.25 ppm	---	1 hour
	0.05 ppm	—	0.05 ppm	Annual
Carbon Monoxide	9 ppm -below 5,000 feet msl	9 ppm	9 ppm	8 hour
	6 ppm - above 5,000 feet msl	—	—	8 hour
	35 ppm	20 ppm	35 ppm	1 hour
TSP	—	---	—	24 hour
	---	—	—	Annual
PM_{10}	150 $\mu g/m^3$	50 $\mu g/m^3$	150 $\mu g/m^3$	24 hour
	50 $\mu g/m^3$	30 $\mu g/m^3$	50 $\mu g/m^3$	Annual
Lead	—	1.5 $\mu g/m^3$	---	30 day
	1.5 $\mu g/m^3$	—	1.5 $\mu g/m^3$	3 months
Hydrogen Sulfide	0.08 ppm	unknown	---	1 hour

a/ Federal secondary standard for protecting the public welfare from adverse effects (such as acid rain). All other Federal standards listed above are primary standards, which protect the public health with an adequate margin of safety.

ppm Parts per million
msl Mean sea level
TSP Total Suspended Particulate
PM_{10} Particulate matter less than 10 microns in diameter
$\mu g/m^3$ micrograms per cubic meter

The demand for additional power in the project area cannot be met by currently available non-polluting sources of energy. New natural gas-fired power plants could meet this demand but the burning of natural gas in new or expanded power plants would increase ambient pollutant concentrations. Compared to alternative fuels, however, the current proposals to burn natural gas would minimize possible impact on air quality. If natural gas is replaced by less clean burning fossil fuels, the emissions resulting from the new or expanding power plants would increase substantially. For example, the amount of carbon produced by the combustion of fuel oil would be 38 percent greater than that produced by natural gas (U.S. Department of Energy, 1998).

As shown in table 4.13-1 (page 4-275), all but 1 of the 11 proposed power plants near the Kern River 2003 Expansion Project facilities in Nevada are located in Clark County. Of the power plants in Clark County, six would be located in either the Apex Valley or adjacent Moapa Valley Airsheds near KRGT's proposed Dry Lake Compressor Station. Two of the other proposed power plants in Clark County would be located in the Ivanpah Airshed near KRGT's Goodsprings Compressor Station, where additional compression is proposed.

All of the proposed power plants must be evaluated by Federal, state, and local agencies prior to their approval in accordance with United States air quality regulations. Several of the proposed power generation facilities in Clark County have already undergone environmental review by agencies. The Moapa Paiute Energy Center draft EIS (BLM Case No. N-66776) discusses cumulative effects of reasonably foreseeable power projects including the Meadow Valley Generating Project, the Moapa Energy Facility, the Apex Generating Station, and the Arrow Canyon Power Plant. The Reliant Energy Bighorn EA (BLM Case No. N-74211) discusses cumulative effects resulting from the Bighorn Power Plant and reasonably foreseeable projects in the Ivanpah Airshed. The impacts addressed in the Moapa Paiute Energy Center draft EIS are discussed below to explain in detail the anticipated ambient air impacts from the power plants near the project. Because the Ivanpah Airshed is outside of the Las Vegas non-attainment area and the Goodsprings Compressor Station is not large enough to require air dispersion modeling, the compressor station expansion should not result in significant adverse cumulative impacts on the ambient air quality standards. If the necessary approvals and permits for the power plants are issued, it would imply that the anticipated impact of these facilities on air quality is acceptable.

Existing conditions are detailed in the Moapa Paiute Energy Center draft EIS (2001) and summarized in table 4.13.11-2 (page 4-286). The BLM's assessment of cumulative effects extended outwards 65 kilometers in all directions from the Moapa Paiute Energy Center and included the Moapa and Apex Valley Airsheds. The Moapa Valley was determined to be in attainment for all criteria air pollutants. In the Apex Valley, all pollutants were determined to be well below the NAAQS except for PM_{10} emissions, which exceeded the 24-hour threshold once in 1998, once in 1999, and twice in 2000. CO levels recorded at monitoring stations outside the Las Vegas CO non-attainment area are well below the NAAQS; however, two monitoring stations within the non-attainment area showed violations. The monitoring stations closest to the Apex Valley measured no violations of the CO ambient air quality standards.

Cumulative impacts of air emissions from all potential sources were assessed to the extent possible for reasonably foreseeable projects associated with the Moapa Paiute Energy Center. Emissions of existing, new, and proposed projects were included in the cumulative impact analysis based on the available data. Both stationary and fugitive air emission sources were included. Emissions modeling of NO_x, CO, PM_{10}, and SO_2 concluded that concentrations of CO and SO_2 were below EPA modeling significance levels, while the modeled concentrations of NO_x and PM_{10} were above those levels. The EPA modeling significance levels represent a threshold for air quality impact assessments and are based on the smallest change in concentration that is considered significant. Thus, for the cumulative impact assessment(s), only NO_x and PM_{10} were analyzed because the concentrations of CO and SO_2 from the proposed project would not be significant.

TABLE 4.13.11-2

Air Quality Baseline for Analysis of Cumulative Impacts

Baseline Air Standards and Conditions ($\mu g/m^3$)			
Pollutant/Time Frame	Class II PSD Increment	NAAQS	Existing Mean/Maximum Value
Ozone			
1-hour	NA	235	77/192
Nitrogen Dioxide			
Annual Mean	25	100	11/14
Carbon Monoxide			
1-hour	NA	40,000	---
8-hour	NA	10,000	---
Sulfur Dioxide			
3-hour	512	1,300	---
24-hour	91	363	3/3
Annual	20	80	10/31
PM_{10}			
24-hour	30	150	30/351
Annual	17	50	19/20
Lead			
Quarter	NA	1.5	---

$\mu g/m^3$ Micrograms per cubic meter
PSD Prevention of Significant Deterioration
NAAQS National Ambient Air Quality Standards
PM_{10} Particulate matter less than 10 microns in diameter

Source: Moapa Paiute Energy Center draft EIS, 2001.

The Moapa Paiute Energy Center draft EIS concluded that short-term increases in PM_{10} would result from construction of all of the reasonably foreseeable future actions; however, their effect would be localized and would result in concentrations below Federal and state standards. In addition to modeling the existing and proposed sources in both valleys, background-monitoring data collected in the Apex Valley were also added to the modeled results to produce conservative (overestimated) results. Because many of the background sources are already represented in the Apex Valley monitoring data, this double counting of background impacts provides a safe margin to determine cumulative impacts. Table 4.13.11-3 (below) shows the background emissions and cumulative effect of the IPPs in the area.

TABLE 4.13.11-3

Background Emissions and Cumulative Effects

Criteria Pollutant $\mu g/m^3$	Background	Cumulative a/	Total	NAAQS
NO_x	11	12.52	23.52	100
PM_{10}				
24-hour	20	54.0	74.0	150
Annual	19	4.33	23.34	50

a/ Source: Moapa Paiute Energy Center draft EIS, 2001.

$\mu g/m^3$ Micrograms per cubic meter
NAAQS National Ambient Air Quality Standards
NO_x Nitrogen oxides
PM_{10} Particulate matter less than 10 microns in diameter

Because total emissions for the generation facilities would not change the attainment status of the affected airsheds, the Moapa Paiute Energy Center draft EIS concluded that cumulative impacts would be minimal. This conclusion is consistent with the findings in the Apex Heavy Use Industrial Park Conceptual

Master Plan and Apex EA that was approved by the BLM on November 27, 1990. The Apex EA described the attenuation that occurs with distance and how predicted concentrations from stack sources would drop to approximately 80 to 85 percent 2 miles from the source and to below 40 percent of the maximum 3 miles from the emission source. This indicates emissions from facilities located in the Apex Airshed could affect the Las Vegas Valley, but it is unlikely emissions from the proposed energy center would reach that airshed. The Apex EA further detailed how future facilities at Apex would increase the concentration of regulated emissions in the airsheds and how recommended siting strategy and controls to reduce air quality impacts from the Apex development would be implemented to maintain attainment status.

Specific information for proposed power generation facilities in California was not available; however, cumulative air impacts are expected to be minor. KRGT does not propose to add any new gas-fired compressors in California as part of the Kern River 2003 Expansion Project. The proposed power plants would be subject to agency review and approval before they can operate. These reviews would include an assessment of the impact of potential air emissions and requirements for additional mitigation if air emissions are determined to exceed acceptable limits.

4.13.12 Reliability and Safety

Impacts on reliability and public safety would be mitigated through the use of the DOT Minimum Federal Safety Standards in Title 49 CFR Part 192, which are intended to protect the public and to prevent natural gas facility accidents and failures. No cumulative impacts would be anticipated to occur.

4.14 GROWTH-INDUCING IMPACTS

The CEQA requires the consideration and discussion in an EIR of the growth-inducing impact of the proposed project. NEPA does not have a similar requirement. As specified in Sections 15126.2 (d) of the *Guidelines for Implementation of the California Environmental Quality Act*, an EIR shall:

> *Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a waste water treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

Most development projects could induce growth in the area in which they are located. The following six criteria are used as a guide to evaluating the growth-inducing potential for the proposed project.

1. Would the Kern River 2003 Expansion Project foster growth or remove obstacles to economic or population growth?

No. The project area is already served by various fuel supplies and economic activity is already taking place. The demand for energy and the proposed pipeline are a result of, rather than a precursor to, development in this region. Although it is recognized that the availability of a new or an alternative source of natural gas may be a contributing factor in stimulating economic and population growth, and could result in the construction of additional power infrastructure, none of the power plants that the Kern River 2003 Expansion Project would serve are solely dependent on the supply from the proposed expansion project. Therefore, the additional gas supplied by the proposed project would not be a growth-inducing impact.

2. Would the project provide new employment?

Yes. It is anticipated that the proposed Kern River 2003 Expansion Project would provide temporary employment for up to 450 construction workers per construction spread, and a maximum of 90 temporary jobs for the construction of compressor stations. KRGT anticipates adding about 12 permanent staff to its existing district offices to handle project operations, with additional support provided as needed by locally based contractors; however, these positions would be spread out over the extensive project area.

3. Would the project provide new access to undeveloped or under developed areas?

No. The project would not involve the creation of any new permanent roads and KRGT would use only existing access roads to access the right-of-way. KRGT would implement OHV controls such as signs, fences, berms, breaches, boulders, shrubs, trees, and other salvaged vegetation to prevent OHV use in environmentally sensitive areas in consultation with land management agencies.

4. Would the project extend public service to a previously unserved area?

No. The project would not extend public service to areas currently unserved by natural gas. The primary result of the Kern River 2003 Expansion Project would be to meet increased energy demands from existing customers.

5. Would the project tax existing community services?

No. The number of non-local workers would be small relative to current populations in the project area and local communities have adequate infrastructure and community services to meet the needs of these non-local workers.

6. Would the project cause development elsewhere?

No. As stated above, the plants that may be served by the Kern River 2003 Expansion Project are not solely dependent on the project for an energy source. Therefore, the addition or absence of the gas supply from the proposed project would not affect development.

Summary

The potential growth-inducing impact of the Kern River 2003 Expansion Project would be the construction of additional power infrastructure as listed in table 1.4-1 (page 1-12); however, because the proposed power plants supplied by the Kern River 2003 Expansion Project would not be solely dependent on the natural gas supplied by the pipeline, the proposed infrastructure growth would occur with or without the construction of the pipeline and thus would not be attributable to the proposed project.

CONCLUSIONS AND RECOMMENDATIONS

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 SUMMARY OF THE STAFFS' ENVIRONMENTAL ANALYSIS

The conclusions and recommendations presented in this section are those of the environmental staffs of the FERC and the CSLC (Agency Staffs). The BLM will present, in its ROD for the Kern River 2003 Expansion Project, its own conclusions and recommendations that incorporate the concurrence or non-concurrence of the other affected Federal land management agencies.

Review of the information provided by KRGT and further developed from data requests; field investigations; scoping; literature research; alternatives analysis; and contacts with Federal, Tribal, state, and local agencies, and individual members of the public indicates that the proposed project would result in limited adverse environmental impact. The Agency Staffs have concluded that if the project is constructed and operated in accordance with applicable laws and regulations, KRGT's proposed mitigation, and the Agency Staffs' additional mitigation recommendations, it would be an environmentally acceptable action. Although many factors were considered in this determination, the principal reasons are:

- 93 percent of the proposed pipeline would be located adjacent to KRGT's existing pipeline and 99 percent would be within or adjacent to existing rights-of-way;
- the project would be consistent with or in conformance with all identified resource management plans, land and resource management plans, general management plans, and local land management plans;
- KRGT would implement its Blasting Plan, Spill Plan, Drilling Mud Release Contingency Plan, Groundwater Monitoring Plan, UECRM Plan, WWCM Procedures, PRM Plan, site-specific Reclamation Plans, Noxious Weed Plan, Wildfire Protection Plan, and COM Plan to protect natural resources during construction and operation of the project;
- use of the directional drill method would avoid disturbances to the beds and banks of the Bear River, East Branch Weber River, and Weber River and associated wetlands;
- the appropriate consultations with the FWS, the SHPOs, the BLM, the FS, other affected land management agencies, and Native Americans, and any appropriate compliance actions resulting from these consultations, would be completed before KRGT would be allowed to begin construction in any given area; and
- an environmental inspection and mitigation monitoring program would ensure compliance with all mitigation measures that become conditions of certification.

In addition, the Agency Staffs developed specific mitigation measures to further reduce the environmental impact that would otherwise result from construction of the project. The Agency Staffs are recommending that these mitigation measures be attached as conditions to any authorization issued by the FERC or the CSLC. These mitigation measures are presented in section 5.6.

Table 5.1-1 (page 5-10), presents a summary of the potential environmental impacts from the project as well as the mitigation that would be applied to reduce environmental impacts and lists the agency(ies) responsible for monitoring each of the mitigation requirements. With one exception, discussed in section 5.4, KRGT's proposed and the Agency Staffs' recommended mitigation would reduce potential environmental impacts to less than significant levels. Table 5.1-1 forms the basis for the detailed mitigation

monitoring program that would be implemented during construction and operation of the Kern River 2003 Expansion Project.

5.2 ALTERNATIVES CONSIDERED

The No Action or Postponed Action Alternative was considered. While the No Action or Postponed Action Alternative would eliminate the environmental impacts identified in this EIS/EIR, KRGT's proposed service area would be denied access to the 885,626 Dth/d of natural gas KRGT proposes to add to its system. Consequently, the new and existing power plants would need to obtain natural gas from other sources, use alternative energy sources, or use alternative fuels.

The first option could require the construction of additional and/or new pipeline facilities in other locations to transport natural gas supplies. If other natural gas facilities are approved and constructed, each project would result in its own set of specific impacts that could be less or greater than those associated with the current proposal. The second option, use of alternative energy sources, is infeasible because the use of solar, hydroelectric, or other energy sources (*e.g.*, geothermal, fuel cells) has not been developed to the point where they would be viable energy alternatives to the proposed project.

The third option would require KRGT's customers (*e.g.*, power plants) to apply for and seek regulatory approval to use other fuels. This change in fuels could have two effects. First, it could delay or jeopardize the operating schedule of many proposed power plants, which are currently designed and being permitted to burn natural gas. Second, assuming regulatory approval to use alternative fuels could be obtained within the required time frames, it could result in increased use of less clean burning fuels and a corresponding increase in emissions.

Alternatives involving the use of other existing pipeline systems were evaluated. No existing system was found to be both environmentally preferable to the proposed facilities and able to meet the project's objectives.

Two KRGT system alternatives including a pipeline looping-only alternative (both single-loop and double-loop) and a compression-only alternative (both additional compression at existing compressor stations and additional compressor stations) were evaluated. Neither of these alternatives was found to be feasible or environmentally preferable to the proposed facilities.

Six route alternatives were evaluated in comparison with the corresponding segment of KRGT's proposed route. These alternatives were identified to respond either to concerns raised by agencies, to avoid sensitive resources, to address engineering issues, or to respond to comments on the draft EIS/EIR. None of the route alternatives considered were determined to be environmentally preferable to the proposed route.

Twelve minor route deviations from the existing pipeline that are proposed by KRGT were analyzed to determine whether they are environmentally preferable to a route adjacent to KRGT's existing pipeline. All of these deviations were determined to be warranted and environmentally acceptable.

Two alternative sites for the Salt Lake Compressor Station and one alternative site for the Dry Lake Compressor Station were evaluated. None of the alternative sites offer a clear environmental advantage over the respective proposed site.

5.3 ENVIRONMENTALLY PREFERABLE PROJECT

The Agency Staffs have determined that KRGT's proposed route is the environmentally preferable project.

5.4 SIGNIFICANT UNAVOIDABLE IMPACTS/STATEMENT OF OVERRIDING CONSIDERATIONS

Effects on all resources were evaluated to determine any significant impact that would remain so after mitigation. As shown in table 5.1-1 (page 5-10), with one exception, all environmental impacts would be reduced to less than significant levels by KRGT's proposed or the Agency Staffs' recommended mitigation. The Agency Staffs have determined that a long-term reduction in special concern vegetation communities (*i.e.,* yucca, cactus, and agave communities) could occur and that potential impacts on these species could be significant. Approval of the project would be subject to a Statement of Overriding Considerations under the CEQA due to this significant unavoidable impact that could remain after mitigation is applied.

5.5 IRREVERSIBLE/IRRETRIEVABLE COMMITMENT OF RESOURCES; SHORT- AND LONG-TERM USES OF THE ENVIRONMENT

The major nonrenewable resources that would be consumed by the proposed project are fossil fuels used to power construction vehicles and, over the life of the project, the pipeline itself (the proposed compressor stations would be natural-gas powered). Theoretically, the pipeline components could be reclaimed at the end of the pipeline's operational life. However, there would be a number of irretrievable resources committed to the proposal if the necessary authorizations are granted. The primary resources irretrievably lost would include soils (resulting from water and wind erosion in disturbed areas); water (used for dust control); crop production (lost or reduced for one season); land use (aboveground facilities would replace rangeland and agricultural land for the life of the project); wildlife habitat (temporary to long-term loss); and yucca, cactus, and agave communities (long-term loss). The loss of cultural resources also would be irretrievable, if allowed to occur.

As discussed in section 4.12, the proposed project has been designed to meet or exceed all safety requirements, and the potential for irreversible damage to the environment during operation is slight.

The proposed project would transport significant volumes of natural gas to customers in Utah, Nevada, and southern California. Its operation would be consistent with Federal policies encouraging competitive natural gas transportation services. For these reasons, the limited irreversible and irretrievable resource commitments are acceptable.

5.6 FERC AND CSLC STAFFS' RECOMMENDED MITIGATION

If the FERC and the CSLC approve the Kern River 2003 Expansion Project, the Agency Staffs recommend that the following measures be included as specific conditions of the Certificate/permit to further mitigate the environmental impact associated with the construction and operation of the proposed project and to assist the agencies in their compliance monitoring activities:

1. Kern River Gas Transmission Company (KRGT) shall follow the construction procedures and mitigation measures described in its application, supplemental filings (including responses to staff data requests), and as identified in the environmental impact statement/environmental impact report (EIS/EIR), unless modified by the FERC Order. KRGT must:

a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the FERC (Secretary) and the California State Lands Commission (CSLC);
b. justify each modification relative to site-specific conditions;
c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
d. receive approval in writing from the Director of the Office of Energy Projects (OEP) and, for the lands under the CSLC's jurisdiction, the Executive Officer of the CSLC **before using that modification**.

2. The Director of OEP has delegation authority to take whatever steps are necessary to ensure the protection of all environmental resources during construction and operation of the project. This authority shall allow:

   a. the modification of conditions of the FERC Order; and
   b. the design and implementation of any additional measures deemed necessary (including stop work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation.

3. **Prior to any construction,** KRGT shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors (EIs), and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before becoming involved** with construction and restoration activities.

4. The authorized facility locations shall be as shown in the EIS/EIR, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction**, KRGT shall file with the Secretary revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the FERC Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

   KRGT's exercise of eminent domain authority granted under Natural Gas Act (NGA) Section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. KRGT's right of eminent domain granted under NGA Section 7(h) does not authorize it to increase the size of its natural gas pipeline to accommodate future needs or to acquire a right-of-way for a pipeline to transport a commodity other than natural gas.

5. KRGT shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that will be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction** in or near that area.

This requirement does not apply to route variations recommended herein or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

a. implementation of cultural resources mitigation measures;
b. implementation of endangered, threatened, or special concern species mitigation measures;
c. recommendations by state regulatory authorities; and
d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. KRGT shall file with the CSLC for review and approval, a set of final engineering design drawings as issued for construction for the portion of the project in California, certified by a California-registered civil/structural engineer. In addition to the pipeline alignments and profiles, the drawings shall provide information such as tie-in details, pipeline grade and material specifications, wall thickness, weight and corrosion coating, minimum bend radius (wherever applicable, such as directional drilling installations), normal and maximum operating pressure, hydrostatic test information, cathodic protection and test stations, and location and details of the nearest upstream pipeline flow emergency shutdown equipment, etc.

7. **Within 60 days of the acceptance of this Certificate and before construction** begins, KRGT shall file an initial Implementation Plan with the Secretary and the CSLC for the review and written approval of the Director of OEP and the CSLC describing how KRGT will implement the mitigation measures required by the FERC Order and the CSLC mitigation monitoring program. KRGT must file revisions to the plan as schedules change. The plan shall identify:

a. how KRGT will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
b. the number of EIs assigned per spread and a description of how KRGT will ensure that sufficient personnel are available to implement the environmental mitigation;
c. company personnel, including EIs and contractors, who will receive copies of the appropriate material;
d. the training and instructions KRGT will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);
e. the company personnel (if known) and specific portion of KRGT's organization having responsibility for compliance;
f. the procedures (including use of contract penalties) KRGT will follow if noncompliance occurs; and
g. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:

    i. the completion of all required surveys and reports;
    ii. the mitigation training of onsite personnel;
    iii. the start of construction; and
    iv. the start and completion of restoration.

8. KRGT shall file updated status reports with the Secretary and, for the portion of the project in California, the CSLC on a **weekly** basis **until** all construction-related activities, including restoration, are complete. On request, these status reports will also be provided to other Federal and state agencies with permitting responsibilities. Status reports shall include:

   a. the current construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
   b. a listing of all problems encountered and each instance of noncompliance observed by the EI(s) during the reporting period (both for the conditions imposed by the FERC and any environmental conditions/permit requirements imposed by other Federal, state, or local agencies);
   c. a description of any corrective actions implemented in response to all instances of noncompliance, and their cost;
   d. the effectiveness of all corrective actions implemented;
   e. a description of any landowner/resident complaints that may relate to compliance with the requirements of the FERC Order and the CSLC mitigation monitoring program, and the measures taken to satisfy their concerns; and
   f. copies of any correspondence received by KRGT from other Federal, state, or local permitting agencies concerning instances of noncompliance, and KRGT's response.

9. KRGT must receive written authorization from the Director of OEP **before commencing service from the project**. Such authorization will only be granted following a determination that rehabilitation/restoration of the right-of-way is proceeding satisfactorily.

10. **Within 30 days of placing the certificated facilities in service**, KRGT shall file an affirmative statement with the Secretary, certified by a senior company official:

   a. that the facilities have been constructed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
   b. identifying which of the Certificate conditions KRGT has complied with or will comply with. This statement shall also identify any areas along the right-of-way where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

11. **Before commencement of any blasting**, KRGT shall submit to the FERC and the CSLC (for the portion of the project in California) for approval:

   a. a copy of the license of the person(s) conducting or supervising the blasting operations and evidence that the person is certified to perform such activity in the jurisdiction where blasting occurs; and
   b. a copy of the contractor-prepared site-specific blasting plans. The site-specific plans shall include a contingency plan that includes safe methods and procedures to identify any misfired detonations and to proceed with further work after misfires. (ARM1)[1/]

12. KRGT shall incorporate the following measure into its pipeline operations and maintenance procedures. **Following an earthquake within the parameters shown in the table below**, KRGT

[1/] Designates the agency-recommended mitigation measure for the mitigation monitoring program as listed in table 5.1-1 (page 5-10).

operations personnel shall inspect all parts of the pipeline alignment that fall within the specified distance of the earthquake epicenter for evidence of permanent ground deformation (*e.g.*, cracks or displacements). If surface fault rupture is reported or observed, the pipeline alignment within at least 1,000 feet of the rupture shall be inspected. KRGT shall submit reports of its findings to the FERC and the CSLC.

Earthquake Magnitude (Richter scale)	Epicentral Distance (miles)
6	5
6.5	10
7	15
7.5	20

(ARM2)

13. KRGT shall conduct a reassessment of the subsidence hazard in California **after every 15 years of operation**. Regions of subsidence that approach 5 feet shall be identified and the pipeline condition and performance shall be evaluated. KRGT shall submit a report of its evaluation to the CSLC and appropriate action shall be taken based on the CSLC's findings. (ARM3)

14. **Before construction of the Bear and Weber River crossings may begin**, KRGT shall file with the FERC for the review and written approval of the Director of OEP revised site-specific horizontal directional drill (HDD) crossing plans for these rivers that show all workspace requirements for the drilling operations and the wetlands that would be affected by each workspace. If surveys indicate no wetlands are present, KRGT shall file the survey documentation that supports the finding. (ARM4)

15. **Before construction**, KRGT shall file with the FERC and the CSLC a revised Noxious Weed Plan. The revised plan shall include provisions for KRGT to:

    a. update its list of known noxious weed infestations to include the data acquired during its noxious weed surveys conducted in 2002;
    b. treat all weeds deemed noxious by Federal, state, and/or county weed control agencies to the extent that they do not present a significant hindrance to reclamation efforts; and
    c. schedule its weed control efforts to occur before seed maturation/development. (ARM5)

16. If active construction in desert tortoise habitat would continue after January 31, KRGT shall coordinate with the U.S. Fish and Wildlife Service (FWS), the Bureau of Land Management (BLM), and the California Department of Fish and Game (CDFG) (in California) to identify site-specific locations where KRGT would install temporary tortoise-proof fence or cover open trenches at the end of each work day. The results of these consultations shall be filed with the FERC and the CSLC **before construction in desert tortoise habitat may continue after January 31.** (ARM6)

17. If a population of Ute ladies'-tresses is identified at mileposts 0.63, 0.83, 1.33, 27.3, or 34.9, KRGT shall bore the area or adjust its route to avoid impacting this species, unless otherwise permitted by the FWS. Such route modifications shall be filed with the FERC for the review and written approval of the Director of OEP **before construction**. (ARM7)

18. KRGT shall conduct preconstruction surveys for nesting Bendire's thrashers in areas of suitable habitat that would be disturbed by construction activities. If any active Bendire's thrasher nests are

found, KRGT shall adhere to the CDFG-recommended 1,000-foot buffer unless otherwise permitted by the CDFG. (ARM8)

19. KRGT shall not begin construction activities **until**:

a. KRGT completes any outstanding species-specific surveys and the FERC receives comments from the FWS regarding the preconstruction survey reports;
b. the FERC completes formal consultation with the FWS;
c. KRGT has completed and filed with the FERC the results of consultations with the Utah Division of Wildlife Resources regarding measures to avoid or minimize impacts on special status species in Utah;
d. KRGT has completed and filed with the FERC the results of consultations with the BLM regarding measures to avoid or minimize impacts on special status species on lands managed by the BLM; and
e. KRGT has received written notification from the Director of OEP that construction or use of conservation measures may begin. (ARM9)

20. **In California**, KRGT shall not begin construction activities **until**:

a. KRGT completes any outstanding species-specific surveys in California and the FERC and the CSLC receive comments from the FWS and the CDFG regarding the applicable preconstruction survey reports;
b. the FERC completes formal consultation with the FWS;
c. the CDFG makes a consistency determination on the FWS' Biological Opinion pursuant to Section 2080.1 of the California Fish and Game Code or issues an Incidental Take Permit that covers both federally and state-listed species that may be affected;
d. KRGT obtains an Incidental Take Permit under Section 2081 of the California Fish and Game Code for all state-listed species that may be affected, or receives concurrence from the CDFG that an Incidental Take Permit is not required;
e. KRGT has completed and filed with the FERC and the CSLC the results of consultations with the BLM regarding measures to avoid or minimize impacts on special status species on lands managed by the BLM in California; and
f. KRGT has received written notification from the Director of OEP and the CSLC that construction or use of conservation measures may begin in California. (ARM9)

21. KRGT shall defer construction and use of its facilities and any staging, storage, or temporary work areas and new or to-be-improved access roads **until**:

a. KRGT prepares and files with the FERC and the CSLC (for the California portion of the project), and submits to the consulting parties, as appropriate, any outstanding cultural resources reports and necessary treatment plans;
b. KRGT files with the FERC and the CSLC (for the California portion of the project) the comments of the consulting parties on all cultural resources reports and plans submitted for review;
c. the CSLC reviews and approves all cultural resources reports and plans prepared for the California portion of the project and notifies KRGT in writing that construction may proceed; and
d. the Director of OEP reviews and approves all cultural resources reports and plans and notifies KRGT in writing that construction may proceed.

All material filed with the FERC and the CSLC containing **location, character, and ownership information** about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "**CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE.**" (ARM10)

22. **Before placing the pipeline system into service in California**, KRGT shall submit to the CSLC for approval a revised operation and maintenance plan. The revised plan shall address internal and external maintenance inspections of the completed facility, including details of integrity testing methods to be applied, corrosion monitoring and testing of the cathodic protection system, and leak monitoring. The plan shall also specify that KRGT shall, unless expressly prohibited by U.S. Department of Transportation regulations, conduct an internal inspection with a high-resolution instrument on a periodic basis, at a minimum of one inspection every 10 years, or sooner if the evidence suggests that significant corrosion or defects exist or if any new Federal or state regulations require more frequent or comparable inspections. Within 3 months following the promulgation of any new Federal or state regulations, KRGT shall update the plan and submit a revised copy to the CSLC. In addition, the revised plan shall include procedures for implementing the operational mitigation measures for conditions 12 and 13 above. (ARM11)

TABLE 5.1-1

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
GEOLOGY						
KRGT1	Effects from construction could include disturbances to the natural topography along the right-of-way and at aboveground facilities due to grading and trenching activities (section 4.1.2).	Significant (CEQA Class II)	After completion of construction, Kern River Gas Transmission Company (KRGT) would restore topographic contours and drainage conditions as closely as feasible to their preconstruction condition.	Less than significant (CEQA Class III)	All c/	Federal Energy Regulatory Commission (FERC), California State Lands Commission (CSLC), and Bureau of Land Management (BLM) monitors would verify mitigation is followed.
KRGT2 ARM1	Where hard bedrock is encountered, blasting would be required to complete the excavation. If blasting is not controlled properly, it can cause damage to existing structures and pipelines, wells, and springs. Temporary effects of blasting can include hazards posed by uncontrolled fly-rock and nuisances caused by noise, increased dust, and venting of gases following blasts (section 4.1.2).	Significant (CEQA Class II)	KRGT would conduct blasting for grade or trench excavation only after all other reasonable means of excavation have been used and are unsuccessful in achieving the required results. KRGT has prepared a Blasting Plan to minimize the effects of blasting and ensure safety during blasting operations. The plan provides guidelines, requirements, and specifications for the use and storage of blasting materials and for the safety of personnel and nearby facilities. All blasting-related operations would comply with Federal, state, and local regulations and permit conditions and would be conducted by or under the direct supervision of experienced personnel legally licensed and certified to perform such activity in the jurisdiction where blasting occurs. To avoid injury to personnel and damage to structures or other features like water wells and the existing pipeline, KRGT's Blasting Plan stipulates that the blasting contractor must prepare site-specific blasting plans. Among other requirements, these plans would identify the distance and orientation to the nearest structure (both aboveground and underground) and the procedures to be used for storing, handling, transporting, loading, and firing explosives. The site-specific blasting plans must be	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT2 ARM1 (cont'd)			reviewed by the company engineer, and the company inspector's approval must be received before each blast. KRGT's Blasting Plan also stipulates the following: • KRGT would not store explosives on Federal land without prior written permission from the land management agency; copies of this permission would be posted on each magazine; • KRGT would give at least 72 hours advance notice of blasting activities to the land management agency, railroads, highway departments, and local communities; occupants of nearby residences, buildings, and businesses; and local farmers; • KRGT would erect and maintain warning signs at all approaches to the blast areas and flaggers would be stationed on all roadways passing within 1,000 feet of blasting activities; • KRGT would not prime or fuse explosives until just before use; • KRGT would conduct blasting during daylight hours and would monitor blasting activities with three-axis seismographs to ensure that safe vibration levels are not exceeded. Limits of vibration measured as peak particle velocity would not exceed 4 inches per second adjacent to an underground pipeline and 2 inches per second for any aboveground structure (including water wells); and • if an aboveground structure or water well is damaged by blasting, KRGT would compensate the owner. To ensure that potential impacts associated with blasting are minimized through skillful operations and the use of site-specific plans, before commencement of any blasting, KRGT would submit to the FERC and the CSLC (for the portion of the project in California) for approval: • a copy of the license of the person(s) conducting or supervising the blasting operations and evidence that the person is certified to perform such activity			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT2 ARM1 (cont'd)			in the jurisdiction where blasting occurs; and • a copy of the contractor-prepared site-specific blasting plans. The site-specific plans would include a contingency plan that includes safe methods and procedures to identify any misfired detonations and to proceed with further work after misfires.			
KRGT3	The construction and operation of a pipeline near or over mineral resources could affect existing and future production at active or currently inactive mineral resource areas by restricting activities within the pipeline right-of-way. In general, potential significant effects include diminished mineral land value, loss of mineral land access, and loss of revenues generated by future mineral production (section 4.1.3.1).	Significant (CEQA Class II)	Analysis indicates that nearly all of KRGT's pipeline route is adjacent to existing pipelines or other utilities that have already precluded further mineral development. Additionally, impacts on future mineral development would be negligible and would not constitute a significant loss of a mineral resource or mineral availability because of the narrow nature of the right-of-way relative to the expanse of areas with mineral resource potential. In the event any conflicts between the pipeline and other mineral resource operations are identified, KRGT would compensate the owners of these resources for potential losses.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT4	The pipeline route crosses various gathering and transmission pipelines (foreign lines) associated with oil and gas production areas located between mileposts (MP) 0.0 and 80.0 of the Muddy Creek Loop and Coyote Creek Loop 1. Construction of the project could cause damage or disruption to these foreign lines (section 4.1.3.1).	Significant (CEQA Class II)	To avoid damage or disruption to any foreign lines crossed by the proposed pipeline, KRGT would: • contact and provide the necessary advance notice (no less than 72 hours) to one-call utility location programs before construction; • continually probe the depth of cover over foreign line(s) during trench excavation and hand excavate the final 2 feet; and • install the pipeline with a normal vertical separation from foreign pipelines of 2 feet. In no case would the pipeline be installed with less than 1 foot of separation from a foreign pipeline.	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT5	Much of the project route is located within areas of past seismic activity. Potential seismic hazards include active faults, earthquakes/ground shaking, and soil liquefaction (section 4.1.4.1).	Significant (CEQA Class II)	KRGT would construct and test project facilities to meet Federal standards outlined in the U.S. Department of Transportation's (DOT) regulations in Title 49 Code of Federal Regulations (CFR) Part 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards.* KRGT has also committed to design all project facilities to meet or exceed the latest edition of the Uniform Building Code (UBC), International Building Code (IBC), and recognized industry standards under the direction of certified professional engineers. However, the UBC, IBC, and DOT (Title 49 CFR Part 192) requirements do not necessarily address all seismic design criteria required in California, particularly at fault crossings and liquefaction potential zones. In California, the CSLC requires the incorporation of current seismological engineering standards such as the *Guidelines for the Design of Buried Steel Pipe* (American Lifeline Alliance), *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems* (American Society of Civil Engineers), and other recognized industry standards for seismic-resistant design at all fault crossings and liquefaction potential zones in California. The CSLC also requires all engineered structures, including pipeline alignment sheets, buildings and other structures, profile drawings wherever necessary, and other appurtenances and associated facilities in California, to be designed, signed, and sealed by California-registered professionals certified to perform such activities in the jurisdiction where the facilities would be located.	Less than significant (CEQA Class III)	All	KRGT certified compliance with the DOT Minimum Federal Safety Standards in its application to the FERC. FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT6 ARM2	The pipeline route would cross seven faults or fault zone areas where the potential for surface fault rupture exists. The potential impact of any fault on the pipeline would depend on the fault activity, the expected	Significant (CEQA Class II)	See KRGT5. Mitigation measures KRGT incorporated into the final design include the following: • orient the pipe at the fault crossing to produce tension in the pipe material in lieu of compression; • provide a substantial unanchored length of pipe across the fault;	Less than significant (CEQA Class III)	Utah California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT6 ARM2 (cont'd)	magnitude of displacement, the geometry of the fault crossing, and the proximity to population. The potential for large differential ground movements leading to surface rupture would require special design considerations (section 4.1.4.1).		• create ditch geometries (deeper or wider dependent on fault type and orientation) to minimize forces on the pipe; • place medium dense sandy backfill around the pipe at the fault crossing; • use heavy-wall pipe at the fault crossing; • avoid pipe wall-thickness transitions near fault traces; • use a certified engineering geologist to observe the construction excavation in the vicinity of the fault crossings to verify that the design assumptions are valid and the treatments are centered in the correct locations; and • equip the mainline valves (MLVs) located upstream and downstream of the faults with actuators. KRGT would incorporate the following measure into its pipeline operations and maintenance procedures. Following an earthquake within the parameters shown in the table below, KRGT operations personnel would inspect all parts of the pipeline alignment that fall within the specified distance of the earthquake epicenter for evidence of permanent ground deformation (*e.g.*, cracks or displacements). If surface fault rupture is reported or observed, the pipeline alignment within at least 1,000 feet of the rupture would be inspected. KRGT would submit reports of its findings to the FERC and the CSLC. Earthquake Magnitude (Richter scale) / Epicentral Distance (miles) 6 / 5 6.5 / 10 7 / 15 7.5 / 20			
KRGT7	Ground shaking resulting from earthquakes is a potential hazard to the pipeline facilities, especially in the northern parts of Utah and in California, primarily along	Significant (CEQA Class II)	KRGT's commitment to meet or exceed the proper design standards for project facilities in seismically active areas (see KRGT5) and its measures to mitigate for surface fault rupture/displacement hazards (see KRGT6/ARM2) would reduce the potential effects of ground shaking associated with earthquakes to less than significant levels.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT7 (cont'd)	the Daggett Loop. Damage to buried pipelines is most often caused by the differential movements of geologic material as opposed to shaking itself. Aboveground structures would more likely be damaged by ground shaking (section 4.1.4.1).					
KRGT8	Soil liquefaction can affect a pipeline by causing lateral spreading, loss of bearing strength, flow failures, subsidence, and flotation (section 4.1.4.1).	Significant (CEQA Class II)	Mitigation measures for soil liquefaction hazards are similar to those used at active fault crossings (see KRGT5 and KRGT6/ARM2).	Less than significant (CEQA Class III)	Utah Nevada California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT9	In areas of slope instability, construction and operation of pipeline facilities could cause landslides. Significant landslides, rockfalls, and debris flows have the potential to damage pipeline facilities (section 4.1.4.2).	Significant (CEQA Class II)	KRGT has sited the pipeline route to avoid landslide-prone areas wherever possible and has avoided areas of slope instability for the vast majority of the pipeline route. In areas that cannot be avoided, the potential for slope instability would be mitigated by KRGT's implementation of the temporary and permanent erosion control and restoration practices in its Upland Erosion Control, Revegetation, and Maintenance Plan (UECRM Plan), Wetland and Waterbody Construction and Mitigation Procedures (WWCM Procedures), and site-specific recommendations from Sergent, Hauskins & Beckwith. These include: • installation of slope breakers and sediment barriers across the right-of-way; and • installation of ditch plugs (trench breakers) at vertical intervals of 100 feet or less for slope gradients of 20 percent or more near MP 45.5 of the Muddy Creek Loop and between MPs 65.0 and 73.0 of the Coyote Creek Loop. In addition to the above measures, to prevent or minimize potential hazards associated with construction-induced slope instability within California, KRGT would retain a	Less than significant (CEQA Class III)	Wyoming Utah California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT9 (cont'd)			California-certified Engineering Geologist to oversee construction activities (*e.g.*, excavation) in areas of potentially unstable ground as well as oversee the attempts to locate traces of Quaternary faults during excavation.			
KRGT10	Some areas in the vicinity of the project have the potential for subsidence resulting from hydrocompaction (section 4.1.4.3).	Significant (CEQA Class II)	To reduce the potential for hydrocompaction, KRGT would: • restore natural drainage patterns that intersect the right-of-way to prevent ponding over the trenchline; and • conduct post-construction surveillance and monitoring of areas susceptible to collapse-induced settlement to identify areas where pipeline maintenance would be necessary to relieve stresses on the pipe.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT11 ARM3	Subsidence due to excessive groundwater withdrawal could occur along the route in the Escalante Desert near Milford, Utah, and in the Las Vegas Valley and Dry Valley in Nevada. The potential for subsidence due to groundwater withdrawal also exists in the western Mojave Desert (section 4.1.4.3).	Significant (CEQA Class II)	KRGT would check for evidence of subsidence during routine pipeline operations overflights and other maintenance activities along the entire pipeline route. Repairs would be made as necessary. KRGT would conduct a reassessment of the subsidence hazard in California after every 15 years of operation. Regions of subsidence that approach 5 feet would be identified and the pipeline condition and performance would be evaluated. KRGT would submit a report of its evaluation to the CSLC and appropriate action would be taken based on the CSLC's findings.	Less than significant (CEQA Class III)	Utah Nevada California	No monitoring required in Utah or Nevada. CSLC monitors would verify mitigation is followed in California
KRGT12	Flash flooding or debris flows along the pipeline could create a rupture if long, unsupported sections of the pipeline become exposed (section 4.1.4.4).	Significant (CEQA Class II)	KRGT would install the pipeline at least 5 feet below the natural bottoms of susceptible drainages and channels.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT13	Hazards associated with volcanic activity include eruptions, lava flows, glowing avalanches, ash flows, volcanic mudflows	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	Utah Nevada	No monitoring required.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT13 (cont'd)	(lahars), tephra falls, and emission of volcanic gases, some of which could jeopardize the integrity of the pipeline and/or aboveground facilities (section 4.1.4.5).					
KRGT14	Avalanches could jeopardize the integrity of the pipeline and/or aboveground facilities (section 4.1.4.6).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	Wyoming Utah	No monitoring required.
KRGT15	The proposed Salt Lake Compressor Station site at MP 132.0 is located within the West Valley Fault Zone and within an area of high soil liquefaction potential (section 4.1.4.7).	Significant (CEQA Class II)	Excavations during construction of the compressor station would be inspected for evidence of fault traces. If such evidence is discovered, a qualified engineering geologist would evaluate the potential impact on the proposed structures and develop means to mitigate the risk posed by fault rupture. Final design approval and construction would comply with the Salt Lake County Natural Hazards Ordinance, Chapter 19.75 of the Counties Zoning Ordinance, local building permits, and current building codes for seismic design.	Less than significant (CEQA Class III)	Utah	FERC monitors would verify mitigation is followed.
KRGT16	Paleontological resources could be affected by construction of the pipeline and associated aboveground facilities, as well as by the resulting increased public access to these resources. Without mitigation, ground disturbance during construction could cause significant impact on paleontological resources (section 4.1.5.1).	Significant (CEQA Class II)	To mitigate potential impacts on paleontological resources, KRGT has developed a Paleontological Resource Mitigation Plan (PRM Plan) for the Kern River 2003 Expansion Project. In accordance with the PRM Plan, KRGT would conduct preconstruction surveys in areas where the proposed pipeline alignment deviates from the existing right-of-way in areas of high paleontological sensitivity. During construction, KRGT would monitor sedimentary units where previous field surveys identified scientifically significant fossils along the pipeline route and all areas that have a high paleontological sensitivity where trenching would be conducted outside the previously disturbed construction right-of-way. Specific mitigation measures in the PRM Plan include: • obtaining a permit for the monitoring and recovery of paleontological specimens on property managed	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT16 (cont'd)			by the BLM or other Federal land management agencies (on private lands, KRGT would notify the agency/entity having jurisdiction over paleontological resources (*e.g.*, permitting and archiving in each state) before construction and obtain necessary permits); • monitoring sedimentary units where previous and new field surveys identified scientifically significant fossils along the proposed pipeline route and for those route deviations or alternatives in areas of high paleontological sensitivity identified in table 4.1.5-1 (page 4-29). An approved, qualified paleontological monitor would be present during ground-disturbing activities. Disturbed areas would be checked immediately after brushing and trenching, and before the pipe is installed and the trench is backfilled. The paleontologist would also be present to monitor when fossils or fossiliferous sediments are encountered during ground-disturbing activities. The monitor would identify the diagnostic elements of any fossils and be equipped to preserve unearthed fossils. The monitor would have the authority to temporarily divert construction equipment in the event significant paleontological resources are discovered. • educating workers about the potential discovery and importance of paleontological resources and spot-checks by paleontologists in non-monitored areas; • notification of the paleontologist in the event of a find in a non-monitored area; • determination and verification of the paleontological sensitivity of additional workspace areas before ground disturbance; • preparation, identification, preservation, and curation of recovered fossils; and • preparation of reports to document findings. All phases of mitigation would be conducted under the direct supervision of a qualified paleontologist and in accordance with applicable permits. Recovered fossils			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT16 (cont'd)			would be prepared to the point of identification and preserved for curation at a museum or as set forth in the repository agreement. To assist the CSLC's third-party monitors with implementation of the mitigation monitoring program, KRGT would provide copies of all paleontological permits to the CSLC before construction in California. Upon completion of excavation and grading activities, a final monitoring report would be prepared by KRGT that would include a summary of field observations, recoveries, and an itemization of all specimens collected. Within 90 days of the completion of construction of the pipeline and associated facilities, KRGT would provide copies of the final paleontological resources monitoring report to the FERC, the CSLC (for lands in California), and the BLM and other appropriate Federal land management agencies.			
SOILS						
KRGT17	Clearing, grading, and the movement of equipment on the right-of-way would remove the protective vegetative cover and expose soils to the effects of wind, rain, and runoff (section 4.2.3.1).	Significant (CEQA Class II)	Erosion control measures proposed for the Kern River 2003 Expansion Project are detailed in both KRGT's UECRM Plan and its site-specific Reclamation Plans (see KRGT50 to 55). To summarize, during construction KRGT would install and maintain various erosion control measures. These include temporary slope breakers on slopes and temporary sediment barriers such as straw bales or silt fence across the right-of-way during construction at the base of slopes, adjacent to waterbodies, wetlands, and roadways, and along the edge of the right-of-way as necessary to prevent sediment from flowing off the right-of-way. KRGT would install erosion control netting on waterbody banks, very steep slopes, and in drainages that may be susceptible to erosion. To protect topsoil from wind erosion, KRGT would apply water and/or a water-based non-toxic, organic tackifier to the topsoil piles in all areas identified as highly susceptible to wind erosion and in other areas where soil conditions warrant. KRGT48 and 90/ARM6 provide additional discussion on the use of these measures and the potential impact on surface waters and the desert tortoise, respectively.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT17 (cont'd)			KRGT would implement reclamation efforts to enhance revegetation and address soils with poor revegetation potential. These efforts would include topsoil segregation, recontouring, applying erosion control mulch on slopes, respreading cut vegetation or preserved rock mulch, imprinting the surface of the right-of-way, installing permanent slope breakers, and seeding with species adaptable to the climate.			
KRGT18	Construction equipment operating and traveling on the construction right-of-way, especially during wet periods and on poorly drained soils, can compact the soil (section 4.2.3.1).	Significant (CEQA Class II)	KRGT addresses compaction in its UECRM Plan, WWCM Procedures, and site-specific Reclamation Plans (see KRGT50 to 55). To summarize, KRGT would minimize compaction by adjusting construction schedules to avoid compaction-prone areas during short-term weather events. Rutting and compaction would be avoided or minimized by operating heavy construction equipment on timber mats across minor tributaries, adjacent wetlands, and other areas as deemed necessary during construction. It would be the responsibility of the environmental inspector (EI), in conjunction with the agencies' compliance monitor, to assess the potential for compaction given the soil type, hydrologic conditions, and current and predicted weather events. After construction, KRGT would test disturbed soils for compaction using a cone penetrometer or other appropriate device in comparison with adjacent undisturbed soils. Should compaction occur, soils would be plowed with a paratill, paraplow, or other deep tillage device to alleviate compaction.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT19	In addition to erosion and compaction, construction activities such as grading, trenching, and backfilling can cause mixing of soil horizons (section 4.2.3.1).	Significant (CEQA Class II)	To reduce the mixing of soil horizons on its construction right-of-way, KRGT would segregate topsoil in accordance with its UECRM Plan and site-specific Reclamation Plans (see KRGT50 to 55). At a minimum, KRGT would segregate topsoil in all annually cultivated or rotated agricultural lands, hay fields, and residential areas. KRGT would also segregate topsoil in those other lands where the landowner requests that it occur. To ensure that all landowners affected by the project are aware of their right to request topsoil segregation, KRGT sent letters to all landowners requesting that they notify KRGT of their desire to have this treatment performed on their land.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT19 (cont'd)			In deep soils, KRGT would segregate at least 12 inches of topsoil. Where shallow soils (with topsoil less than 12 inches deep), or soils with stony subsoil are encountered, KRGT would make every effort to segregate the entire topsoil layer. KRGT would segregate topsoil using one of the following methods: from either the full work area (full right-of-way method), from the trench and subsoil storage area (trench plus spoilside method), or from the trench and working side (trench plus working site method). The determination of where each topsoil segregation method would be used would be finalized before construction and included in the Construction, Operation, and Maintenance Plan (COM Plan) for the BLM, private landowner agreements, and other applicable permits. Topsoil would be stockpiled separately from subsoil and the two stockpiles would be replaced in the proper order during backfilling and final grading. Topsoil segregation treatments for rangeland and native habitats are described in more detail in KRGT50 to 55; KRGT's UECRM Plan addresses topsoil segregation in residential and agricultural lands.			
KRGT20	Trenching, ripping, or blasting of stony or shallow bedrock soils can bring stones or rock fragments to the surface, which could interfere with agricultural practices and hinder restoration of the right-of-way (section 4.2.3.1).	Significant (CEQA Class II)	In all actively cultivated or rotated cropland and improved pastures, KRGT would minimize these impacts by segregating topsoil and removing (picking) excess rock from the top 12 inches of soil so that the size, density, and distribution of rock on the right-of-way is similar to adjacent undisturbed areas. On rangelands, KRGT anticipates rocks may be disposed of along the right-of-way by scattering them in a natural pattern, as permitted by the landowner or land management agency. If caliche is found in the subsoil, small pieces would be buried on the right-of-way with at least 24 inches of cover while larger pieces of caliche may be disposed of in an appropriate landfill.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT21	Construction can facilitate the establishment of noxious or invasive weeds where none or few existed. The clearing of existing perennial vegetation provides an opportunity for weed species to invade the right-of-way, and the movement of equipment along the right-of-way could transport weed seed and plant parts from one location to another (section 4.2.3.1).	Significant (CEQA Class II)	To minimize and control the spread of noxious weeds, KRGT would implement its Noxious Weed Plan (see KRGT60 and ARM5) and its site-specific Reclamation Plans (see KRGT50 to 55).	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT22	Contamination from spills or leaks of fuels, lubricants, and coolant from construction equipment could have an impact on soils (section 4.2.3.1).	Significant (CEQA Class II)	Implementation of KRGT's Spill Plan (see KRGT27) would reduce the impacts of soil contamination from spills or leaks to less than significant levels.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT23	Impacts on soils associated with the new aboveground facilities would be permanent (section 4.2.3.2).	Less than significant (CEQA Class III)	No specific mitigation proposed. Mitigation measures implemented in these locations would be limited to erosion control measures as described in both KRGT's UECRM Plan and its site-specific Reclamation Plans (see KRGT50 to 55).	Less than significant (CEQA Class III)	All	No monitoring required.
WATER RESOURCES						
KRGT24	Construction of the pipeline and aboveground facilities could affect groundwater in several ways. Clearing, grading, trenching, and soil stockpiling activities could temporarily alter overland flow and groundwater recharge patterns. Near-surface soil compaction caused by heavy	Significant (CEQA Class II)	Implementation of KRGT's mitigation measures identified for soils (see KRGT17 to 23) would reduce these impacts on groundwater to less than significant levels.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT24 (cont'd)	construction equipment/vehicles could reduce the soil's ability to absorb water, which could increase surface runoff and the potential for ponding (section 4.3.1.1).					
KRGT25	Trenching and trench dewatering could cause temporary fluctuations in the elevation of the water table (section 4.3.1.1).	Significant (CEQA Class II)	KRGT would discharge water from the trench into well-vegetated upland areas or properly constructed dewatering structures or filter bags, which would allow the water to infiltrate back into the soil and return to the underlying aquifer. Trench dewatering would be conducted in compliance with applicable permits.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT26	The alteration of the natural soil strata by trenching and other earthwork could eliminate some existing groundwater pathways or result in new migration pathways for groundwater, particularly in wetland areas (section 4.3.1.1).	Significant (CEQA Class II)	Following installation of the pipeline, KRGT would backfill the trench with previously excavated materials, restoring confining soils breached during construction. KRGT would place trench breakers (sand bags installed around the pipe) in the trench, on slopes, and at the base of slopes adjacent to wetlands and waterbodies as necessary to prevent groundwater migration along the pipeline/trench. Upon completion of construction, KRGT would restore surface contours to ensure that the original overland flow and recharge patterns are reestablished.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT27	Accidental spills or leaks of hazardous liquids could contaminate groundwater and affect aquifers (section 4.3.1.1).	Significant (CEQA Class II)	KRGT has prepared a Spill Plan to address preventive and mitigative measures that would be used to minimize the potential impact of a hazardous spill during construction of the project facilities. Some pertinent measures in KRGT's Spill Plan include: • training of contractor personnel on the contents and requirements of the Spill Plan; • a requirement for routine inspections and maintenance of equipment to prevent accidental spills or leaks; • specifications for the storage, proper labeling, and secondary containment of oil and other hazardous liquids in containers; • a requirement for daily inspection of containers for leaks and deterioration; • a requirement to replace leaky or deteriorated	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT27 (cont'd)			containers immediately after an inadequate condition is detected; • a requirement that vehicle-mounted tanks be equipped with flame/spark arrestors or vents to prevent self ignition; • specifications that prevent or restrict the transfer of liquids or the refueling of equipment within 100 feet of waterbodies and wetlands, 200 feet of water supply wells, and 400 feet of municipal or community wells or protected wellhead or watershed areas; • a requirement that service vehicles used to transport lubricants and fuel be equipped with emergency spill response kits, chemical response kits, and other equipment such as shovels, brooms, polyethylene sheeting, and fire protection equipment; • notification, response, and cleanup procedures in the event of a spill; • the names and telephone numbers of state and local officials to be contacted in the event of a spill; and • state reporting requirements (*i.e.*, reportable quantity).			
KRGT28	A total of 247 water supply wells or springs have been identified as potentially occurring within 200 feet of the construction right-of-way. As many as 79 of these water supply wells or springs are in locations where blasting for pipeline placement may be necessary. Although adverse impacts on groundwater resources are not anticipated, blasting near water supply wells or springs could cause temporary damage or	Significant (CEQA Class II)	KRGT would conduct final identification and confirmation of groundwater resources through additional field surveys and contacts with local landowners within the project corridor before construction. These surveys would also verify water wells within groundwater source protection areas crossed by the pipeline route. To determine whether pipeline construction activities have affected groundwater quality or yield, KRGT would implement its Groundwater Monitoring Plan. With landowner permission, wells and springs within 150 feet of the construction right-of-way would be sampled before construction to obtain water quality and yield data for each sampling point. Any isolated springs that sustain a riparian community and/or provide a wildlife benefit would be delineated using current U.S. Army Corps of Engineers (COE) methodology. Sampling of water wells or springs	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT28 (cont'd)	changes in water levels and turbidity. Similar impacts may occur for water wells near other construction activities such as trenching and dewatering (section 4.3.1.2).		outside the 150-foot monitoring area would be done at landowner request. If it is determined that blasting or other construction activities have diminished a water supply, KRGT would arrange for a temporary water supply through a local supplier and make the necessary repairs to the affected water well, or install another comparable well. KRGT would obtain the applicable state and local permits before repairing or replacing any water wells and for any temporary domestic water supplies. Specific mitigation measures would be coordinated with the landowner or land management agency in order to meet the landowner's specific needs. KRGT would conduct biological monitoring at isolated springs to determine any adverse impact on the riparian community or diminishment of its value to wildlife. Post-construction well monitoring would be conducted as requested by the well owner or for disputed situations. Within 30 days of placing the facilities in-service, KRGT would file a report with the FERC and the CSLC (in California) describing any complaints received from landowners about water quality or yield, the results of the biological monitoring at any isolated springs, and the remedial action taken to address concerns.			
KRGT29	Shallow groundwater could affect the buoyancy of the pipe (*i.e.*, the pipeline would be more likely to float) and increase the potential for corrosion (section 4.3.1.3).	Significant (CEQA Class II)	In areas where the positive buoyancy of the pipeline may exceed the combined uplift resistance of backfill soil and soil adjacent to the ditch, KRGT would install weights, use concrete-coated pipe, or anchor the pipeline. In addition to the use of externally coated pipe, KRGT would install cathodic protection where necessary to guard against corrosion.	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.
KRGT30	Seven potential sources of groundwater and/or soil contamination have been identified near the proposed pipeline facilities. The precise location of the historic landfill associated with the Beaver County	Significant (CEQA Class II)	If contaminated groundwater and/or sediments (based on evidence of land-filled debris, subsoil discoloration, or odor) are encountered along the pipeline route or at aboveground facility sites during construction, KRGT would implement the following steps: • halt all construction work in the immediate vicinity of areas where hazardous or unknown wastes are	Less than significant (CEQA Class III)	Utah Nevada California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT30 (cont'd)	Special Service #5 Landfill relative to the pipeline route has not been determined (section 4.3.1.4).		encountered; • evacuate all construction, oversight, and observing personnel to a road-accessible, up-wind location until the types and levels of potential contamination can be verified; • notify KRGT's Chief Inspector, EI, and land management agency Authorized Officer. Following consultation with onsite personnel and the land management agency hazardous materials coordinator, the EI, in conjunction with the agencies' compliance monitor, would be responsible for implementing follow-up actions, including mobilizing emergency response personnel and coordinating with the U.S. Environmental Protection Agency, or state or local agencies; • notify and mobilize an emergency response contractor if an immediate or imminent threat to human health or the environment exists; • if the land management agency Authorized Officer or his/her designee has determined that an immediate or imminent threat to human health or the environment does not exist, or has been abated, KRGT or a qualified subcontractor would collect representative samples of the waste and surrounding materials for laboratory analysis; and • remove and properly dispose of contaminated materials, if feasible. If the extent of contamination is too widespread for economical removal, or if disposal options are technically infeasible or cost-prohibitive, backfilling of that portion of the trench would be suspended until appropriate mitigation options are approved by the FERC and the CSLC (in California). Before construction, KRGT would consult with the owner/operator of the Beaver County Services #5 Landfill in Utah to determine the extent of the historic landfill. If land filled materials are encountered during subsurface excavation, KRGT would dispose of the material in a permitted landfill and replace it with engineered fill.			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT30 (cont'd)			KRGT would also coordinate with Nellis Air Force Base (AFB) to confirm that the cap associated with Landfill LF-34 is not disturbed during construction activities.			
KRGT31	Existing surface water features at the proposed Salt Lake Compressor Station site include a canal (Brighton Canal) that once crossed the site from the southeast to the northwest but has been rerouted along the south and west boundary of the proposed facility location (section 4.3.2.2).	Significant (CEQA Class II)	KRGT would direct drainage from the site to the west and north. KRGT would obtain necessary permits for construction of project facilities and comply with Federal, state, and local regulations.	Less than significant (CEQA Class III)	Utah	FERC monitors would verify mitigation is followed.
KRGT32	Clearing and grading of streambanks, in-stream blasting (if required), in-stream trenching, trench dewatering, and backfilling could affect waterbodies through modification of aquatic habitat, increased sedimentation, increased turbidity, decreased dissolved oxygen concentrations, stream warming, releases of chemical and nutrient pollutants from sediments, or introduction of chemical contamination such as fuel and lubricants (sections 4.3.2.3 and 4.3.2.4).	Significant (CEQA Class II)	KRGT would minimize impacts on surface waters by implementing the waterbody construction and restoration measures contained in its WWCM Procedures. The WWCM Procedures are applicable to any stream or river with perceptible flow at the time of crossing and other permanent waterbodies such as ponds and lakes. Some of the relevant mitigation measures pertaining to waterbody crossings specified in KRGT's WWCM Procedures include: • locating all extra work areas at least 50 feet away from waterbody boundaries in non-cultivated areas where topographic conditions permit, otherwise extra work areas would be a minimum of 10 feet from the waterbody; • limiting clearing of vegetation between extra work areas and the edge of the waterbody to preserve riparian vegetation; • maintaining adequate flow rates throughout construction to protect aquatic life and prevent the interruption of existing downstream uses; • restricting storage and refueling activities near surface waters; • restricting spoil placement near surface waters;	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT32 (cont'd)			• limiting use of equipment operating in the waterbody to that needed to construct the crossing; • requiring construction across waterbodies to be completed as quickly as possible and during the windows specified in the WWCM Procedures or required by applicable permits; • developing and submitting to the FERC site-specific construction procedures for each waterbody greater than 100 feet wide at the crossing location (major waterbody); • requiring temporary erosion and sediment control measures to be installed across the entire width of the construction right-of-way after clearing and before ground disturbance; • requiring maintenance of temporary erosion and sediment control measures throughout construction until streambanks and adjacent upland areas are stabilized; • requiring bank stabilization and reestablishment of bed and bank contours and riparian vegetation after construction; and • limiting post-construction maintenance of vegetated buffer strips adjacent to streams. KRGT would also obtain waterbody crossing permits from the COE under Section 404 of the Clean Water Act (CWA) and state water quality certifications under Section 401 of the CWA. These and other permits required by individual states for waterbody crossings could include additional mitigation measures. All construction activities at waterbody crossings would be in accordance with Federal, state, and local permit requirements.			
KRGT33	Refueling of vehicles and storage of fuel, oil, or other hazardous materials near surface waters creates a potential for contamination if a spill were to occur. Immediate downstream users of the water could experience a degradation	Significant (CEQA Class II)	KRGT's Spill Plan, developed in accordance with Federal, state, and local regulations, would adequately prevent and mitigate the potential impact of a spill during construction (see KRGT27).	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT33 (cont'd)	in water quality. Acute and chronic toxic effects on aquatic organisms could result from such a spill (section 4.3.2.4).					
KRGT34	The majority of waterbodies that would be crossed by the pipeline are intermittent washes, creeks, and canals that are expected to be dry at the time of construction (dry washes). Impacts on dry washes would be limited to temporary alteration of beds and banks, loss of wildlife habitat, and possibly increased sediment load during initial storm events following construction (section 4.3.2.4).	Significant (CEQA Class II)	KRGT proposes to cross dry washes using conventional upland construction methods unless other methods are required by the applicable agencies. KRGT proposes to avoid construction in intermittent waterbodies during periods of high flow and to monitor weather conditions up to 2 days in advance of waterbody crossings to minimize the potential for construction across intermittent waterbodies to occur during runoff events. If perceptible flow conditions develop during construction, KRGT would: • remove all equipment from within the streambanks; • restore the banks to their original shape (as close as possible) to keep the flow within the banks of the stream by utilizing soil, straw bales, silt fence, or other means deemed appropriate by regulatory agencies; • continually monitor the banks where the crossing was attempted and restore any banks that are eroded by flow; and • defer construction for hours or days to allow flow to subside before resuming work. If it becomes apparent that the waterbody may continue flowing for weeks or months, KRGT would reenter the waterbody using the same methods proposed for perennial waterbodies.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT35	KRGT proposes to use the open-cut method for 23 perennial waterbody crossings. Impacts associated with construction using the open-cut method include	Significant (CEQA Class II)	Impacts associated with these open-cut crossings would be less than significant with KRGT's implementation of its WWCM Procedures (see KRGT32).	Less than significant (CEQA Class III)	Wyoming Utah Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT35 (cont'd)	temporary alteration of beds and banks, temporary loss of wildlife habitat, and increased sediment load during construction (section 4.3.2.4).					
KRGT36	Revegetation of waterbody banks following construction could be slow due to low annual rainfall (section 4.3.2.4).	Significant (CEQA Class II)	During restoration of waterbody banks, KRGT would use natural erosion control techniques (*e.g.*, fiber mats, seeding, plantings) wherever feasible. KRGT would minimize the use of riprap or gabions in accordance with its WWCM Procedures (see KRGT32) and as stipulated in its waterbody crossing permits from the COE and applicable state agencies. KRGT would only use stone riprap or gabions as a restoration measure on steep banks at perennial and intermittent waterbody crossings where erosion cannot be effectively controlled with native materials or a combination of erosion control matting and vegetation.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT37	Two of the perennial waterbodies that KRGT proposes to cross using the open-cut method, the Surplus Canal (MP 129.8) and the Sevier River (MP 224.4), are major waterbodies (greater than 100 feet wide at the crossing location) (section 4.3.2.6).	Significant (CEQA Class II)	In accordance with its WWCM Procedures, KRGT has provided site-specific crossing plans for the Surplus Canal and the Sevier River. KRGT proposes to open cut these waterbodies using mechanical excavators operating from each bank. KRGT would minimize impact by limiting the in-stream work at these waterbodies and by completing the crossings in accordance with its WWCM Procedures (see KRGT32). If temporary equipment bridges are determined to be necessary by the construction contractor and the EI, a flexifloat-type bridge would likely be installed across the waterbodies. After installation of the pipe and backfill, KRGT would return the streambanks to the original contours and stabilize them using stone riprap.	Less than significant (CEQA Class III)	Utah	FERC monitors would verify mitigation is followed.
KRGT38	Although neither surface flow nor a defined channel are evident at either of the two crossing locations of the Mojave River (MP 676.7 of the Goodsprings Loop and MP 18.0 of the	Significant (CEQA Class II)	KRGT proposes to construct the crossings of the Mojave River using the open-cut method in accordance with its state waterbody crossing permits. KRGT would restore the areas to preconstruction contours following construction. See KRGT32.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT38 (cont'd)	Daggett Loop), it is classified as an intermittent waterbody. The area consists of a broad, dry wash that includes several smaller, braided washes with no riparian vegetation at either of the crossing locations (section 4.3.2.6).					
KRGT39 ARM4	Both the Bear River (MP 47.5) and the Weber River (MP 87.6) support coldwater fisheries and Federal and/or state sensitive fish species and are considered sensitive waterbodies (section 4.3.2.6).	Significant (CEQA Class II)	KRGT proposes to cross these rivers using the horizontal directional drill (HDD) method. KRGT has submitted site-specific HDD crossing plans that show the drill entry and exit workspaces, drill profiles, and workspace requirements for the pipe fabrication and stringout areas. Before construction of the Bear and Weber River crossings may begin, KRGT would file with the FERC for the review and written approval of the Director of Office of Energy Projects (OEP) revised site-specific HDD crossing plans for these rivers that show all workspace requirements for the drilling operations and the wetlands that would be affected by each workspace. If surveys indicate no wetlands are present, KRGT would file the survey documentation that supports the finding.	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.
KRGT40	The primary impact that could occur as a result of directional drilling is an inadvertent release of drilling mud (frac-out) directly or indirectly into the waterbody (section 4.3.2.6).	Significant (CEQA Class II)	KRGT has prepared a Drilling Mud Release Contingency Plan that describes how KRGT would conduct and monitor the drilling operations to minimize the potential for inadvertent drilling mud releases. The plan also includes procedures for cleanup of drilling mud releases and for sealing the hole if a drill cannot be completed.	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.
KRGT41	In the unlikely event it is required, blasting could injure or kill aquatic organisms, displace organisms during blast-hole drilling operations, and temporarily increase stream turbidity (section 4.3.2.7).	Significant (CEQA Class II)	See KRGT81.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT42	Based on the results of the scour calculations performed during construction of the existing KRGT pipeline, 23 locations, in addition to Yellow Creek, have the potential for scour that may require deeper than normal pipeline burial depth at the crossing (section 4.3.2.8).	Significant (CEQA Class II)	KRGT would implement one or a combination of the following measures to protect against scour and bank erosion at these locations: • burial below scour depth; • use of concrete-coated pipe or set-on concrete weights; • use of rock shield around the pipe; and/or • installation of erosion control measures (such as gabions and riprap).	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT43	The Muddy River (MP 477.1) is listed as an impaired waterbody based on total phosphorus and metals. Shallow groundwater underlying the Muddy River floodplain may contain elevated concentrations of inorganic salts, although at levels that do not present a health concern to construction workers (section 4.3.2.9).	Significant (CEQA Class II)	KRGT proposes to cross the Muddy River using the flume method. If phosphorus is present in the Muddy River, implementation of KRGT's UECRM Plan and WWCM Procedures (see KRGT32) and the additional measures described below would minimize the potential for sediment resuspension, sediment transport, and erosion of banks. Specifically, to minimize resuspension of any potentially contaminated sediments in the Muddy River, KRGT proposes to cross the Muddy River using the flume method and would stockpile excavated material in the adjacent upland staging area or temporary extra workspace as needed to minimize handling of sediments. Use of the flume method would minimize the potential for dispersing contaminated sediments in the Muddy River by limiting in-stream activities in flowing water. KRGT would complete trenching and backfilling activities in a "dry" area within the waterbody and return the streambottom profile to preconstruction conditions, including replacement of subsurface sediments and streambottom materials before returning the stream to normal flow conditions. In addition, KRGT would incorporate any special COE or state conditions regarding handling of potentially contaminated sediments into its crossing plans and would adhere to all National Pollutant Discharge Elimination System (NPDES) permit stipulations when handling potentially contaminated sediments at the Muddy River.	Less than significant (CEQA Class III)	Nevada	FERC monitors would verify mitigation is followed.
KRGT44	The COE Utah Regional Office and the Utah Department of	Significant (CEQA Class II)	KRGT would cross Bingham Creek using the bore method unless KRGT obtains documentation from the UDEQ that the potential for contaminated sediments no longer exists	Less than significant (CEQA Class III)	Utah	FERC monitors would verify mitigation is

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT44 (cont'd)	Environmental Quality (UDEQ) have identified Bingham Creek (MP 147.0) as contaminated with elevated levels of copper and zinc due to activities at the Kennecott facility (section 4.3.2.9).		at the crossing location.			followed.
KRGT45	The appropriation of large volumes of hydrostatic test water from surface water sources could temporarily affect the recreational and biological uses of the resource if the diversions constitute a large percentage of the source's total flow or volume. The diversion of large volumes of water from waterbodies could also result in the temporary loss of habitat, changes in water temperature and dissolved oxygen levels, and entrainment or impingement of fish or other aquatic organisms. The withdrawal of large amounts of water from private or public water supply wells could exceed the delivery capacity of the system or well (section 4.3.2.10).	Significant (CEQA Class II)	KRGT would acquire the necessary permits from state agencies before withdrawing hydrostatic test water, including specific approvals from applicable resource agencies. KRGT would minimize the potential for these effects by adhering to the hydrostatic testing measures included in its WWCM Procedures (see KRGT32). These measures include screening intake hoses and regulating the withdrawal of hydrostatic test water at a rate that would not adversely affect aquatic resources or downstream flows. KRGT would limit the rate of water withdrawal from private water wells and county water system wells so as not to exceed the delivery capacity of the system or well. KRGT would be testing only new pipe and would not add any chemicals to the water during hydrostatic testing.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT46	The potential impacts resulting from the discharge of hydrostatic test waters onto land would include soil erosion and	Significant (CEQA Class II)	KRGT would acquire the necessary permits from state agencies before discharging hydrostatic test water, including specific approvals from applicable resource agencies.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT46 (cont'd)	subsequent degradation of water quality, including increased turbidity and sedimentation from hydrostatic test water runoff. High velocity flows could also cause erosion of the streambanks and streambottom, resulting in a temporary increase of sediment load and destruction of habitat (section 4.3.2.10).		KRGT would use energy-dissipating devices and/or filter bags to prevent erosion, streambed scour, suspension of sediments, and excessive streamflow.			
KRGT47	Two of KRGT's proposed hydrostatic test water sources, the Bear River and Weber River, support coldwater fisheries and offer habitat to Federal and/or state-listed special status species (section 4.3.2.10).	Significant (CEQA Class II)	Hydrostatic test water intakes at these two waterbodies would be equipped with filtering and screening devices to avoid the pumping of organic debris and the entrainment of aquatic species. Test water intakes would be suspended above the stream bottom. Pursuant to permit conditions, KRGT would determine the allowable rates of withdrawal from surface waters to provide for adequate sustained flow based on conditions at the time that these withdrawals are made.	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.
KRGT48	KRGT would apply water and/or a water-based, non-toxic, organic tackifier to the construction work area, including topsoil piles, to control dust generated by construction activities. The impacts on water resources due to the water withdrawals for dust control are the same as those outlined in KRGT45 for hydrostatic test water withdrawals (see section 4.3.2.11).	Significant (CEQA Class II)	KRGT would store the water in storage tanks located in extra work areas along the construction right-of-way. Trucks would fill up at the storage locations and then travel the right-of-way applying water as necessary to control dust. If the withdrawals are conducted according to KRGT's WWCM Procedures and its proposed mitigation measures for hydrostatic test water withdrawals (see KRGT45), and in compliance with applicable permit requirements, the impacts of dust control measures on water resources would be less than significant.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
WETLANDS						
KRGT49	The primary impact of pipeline construction activities on wetlands would be the short-term alteration of wetland vegetation. Other types of impacts associated with construction of the pipeline could include temporary changes in wetland hydrology and water quality, temporary lowering of the water table, and increased turbidity during trenching and restoration activities. During construction, failure to segregate topsoil over the trenchline in nonsaturated wetlands could result in the mixing of the topsoil with the subsoil, which could lower biological recruitment of native wetland vegetation after restoration. In addition, inadvertent compaction and furrowing of soils during construction could result from the temporary stockpiling of soil and the movement of heavy machinery, which could in turn alter the natural hydrologic patterns of the wetlands, inhibit seed germination, or increase the potential for siltation. Construction clearing activities and disturbance	Significant (CEQA Class II)	KRGT would minimize impacts on wetlands by complying with the COE's Section 404 permit conditions and state-issued Section 401 water quality certifications or waivers, and by implementing the wetland construction and restoration measures contained in its WWCM Procedures. KRGT's proposed wetland mitigation is designed to minimize the area and duration of wetland disturbance, reduce the disturbance of wetland soils, and enhance wetland restoration following construction. These measures include, but are not limited to: • limiting the width of the construction right-of-way in non-cultivated wetlands to 75 feet unless a wider right-of-way is expressly permitted by the FERC; • limiting the operation of construction equipment within wetlands to that equipment essential for clearing, excavation, pipe installation, backfilling, and restoration activities; • limiting grading activities to directly over the trenchline, except where additional grading is necessary to ensure safety; • using low ground weight construction equipment, or operating equipment off of timber riprap, prefabricated timber mats, or geotextile fabric overlain with gravel in saturated or standing water wetlands; • installing trench breakers or sealing the trench bottom as needed to prevent draining of a wetland and to maintain original wetland hydrology; • prohibiting storage of hazardous materials, chemicals, fuels, and lubricating oils within a wetland or within 100 feet of a wetland boundary; • consulting with the appropriate land management or state agencies to develop plans for revegetating wetlands and, where necessary, preventing the invasion or spread of undesirable exotic vegetation; • limiting post-construction maintenance of vegetation within wetlands to removal of trees that are greater than 15 feet in height and are within 15 feet of the	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT49 (cont'd)	of wetland vegetation could also temporarily affect the wetland's capacity to buffer flood flows and/or control erosion (section 4.4.3).		pipeline centerline, and maintenance of a 10-foot-wide strip of vegetation centered over the pipeline in herbaceous vegetation; and • monitoring the success of wetland revegetation annually for a period of 3 to 5 years after construction, and developing and implementing remedial revegetation plans for wetlands that are not successfully revegetated.			
VEGETATION						
KRGT50	The primary impact of the project on vegetation would be the cutting, clearing, and/or removal of existing vegetation within the construction work area. The degree of impact would depend on the type and amount of vegetation affected, the rate at which the vegetation would regenerate after construction, and the frequency of vegetation maintenance by the pipeline company during operation. Secondary effects associated with disturbances to vegetation would include increased soil erosion, increased potential for the introduction and establishment of invasive weedy species, and a local reduction in available wildlife habitat (section 4.5.2.1).	Significant (CEQA Class II)	KRGT has developed three strategies to minimize and mitigate impacts on vegetation. The first strategy is avoidance. To reduce impacts on vegetation, KRGT designed its route to minimize areas of dense vegetation and sensitive species. The second strategy KRGT proposes is the permanent preservation of a significant acreage of desert vegetation as part of its efforts to compensate for impacts on desert tortoise habitat (see KRGT90/ARM6). The third strategy that KRGT would employ is the implementation of its site-specific Reclamation Plans. KRGT has developed separate plans for each of the four states crossed by the pipeline and a fifth plan for the Dixie National Forest (see KRGT51 to 55). Each of the five site-specific Reclamation Plans prescribes a variety of reclamation treatments to reduce or mitigate impacts on vegetation. The treatments between plans vary depending on the terrain, climate, native vegetation type, and recommendations from the applicable land and resource management agencies. The following treatments, however, would be common throughout the project area. • Before construction, an inspection of the right-of-way would be made by one or more reclamation specialist(s). The locations of vegetation useful for transplanting to specified high visibility areas, special use areas, and riparian areas would be flagged. Individual plants that are determined suitable for transplanting would be removed from	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT50 (cont'd)			the right-of-way and stored for use during restoration in areas specified in the site-specific Reclamation Plans. • Topsoil segregation would be conducted in accordance with KRGT's UECRM Plan or as requested by the land management agency/landowner (see KRGT19). The maximum depth of topsoil to be segregated differs between each plan. • In areas where topsoil segregation would not be conducted (*i.e.,* the working side of the right-of-way where the trench plus spoilside topsoil segregation method is used, the spoilside of the right-of-way where the trench plus working side method is used, and the entire right-of-way width in areas where no topsoil segregation is conducted), the vegetation would be mowed, scalped, or crushed, leaving plant root systems intact. Native vegetation removed would be retained for use as mulch during restoration activities. The remaining plant root systems would aid in holding the undisturbed topsoil in place, aid in moisture retention, help to retain organic matter within the soil, and potentially provide a seed source. The width of surface disturbance would be kept to a minimum in order to maximize the benefit of this treatment. This treatment would aid in minimizing soil disturbance, which would improve the restoration potential of disturbed areas. • Surface rock, where present and appropriate for restoration activities, would be conserved during construction and spread over the topsoil during restoration to visually blend disturbed and undisturbed areas or for erosion control. In desert areas where a surface varnish is present, large rocks and boulders would be placed to face the varnish side upwards. Rock mulching would aid in stabilizing disturbed soils, reducing erosion, and minimizing visual impacts. Stockpiled surface rock may also be used as mulch where appropriate for the terrain or habitat type.			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT50 (cont'd)			• Severely compacted soils (except sandy soils) would be scarified to a depth of 6 inches. The need for scarification would be determined by an EI, in conjunction with the agencies' compliance monitor. This treatment would mitigate soil compaction caused by construction. • Recontouring would occur in all treatment areas. The contours would be reshaped following backfilling of the trench and replacement of the topsoil to restore preconstruction contours and natural drainage patterns. This treatment would reduce erosion and minimize visual impacts. • Imprinting of soils would be conducted in most areas. Following the respreading of topsoil and mulching, the disturbed area would be driven over by an imprinting device such as a sheepsfoot (or other equipment). Small depressions would be made in the soil surface in a non-directional pattern. Exceptions to this treatment would be areas where imprinting is not deemed beneficial or in areas inaccessible to equipment. Examples of areas where imprinting would not be conducted include dry washes, wetland/riparian areas, and steeply sloped banks. Imprinting would aid in the collection of water, windblown seeds, and organic matter and would help to firm the soil surface and reduce the potential for wind and water erosion. • Seeding would occur throughout the disturbed areas of the project. Within the Mojave Desert, a portion of the seed would be pelletized to add macrobiotic components developed specifically for Mojave Desert habitats. • In desert areas, KRGT would salvage and transplant Joshua trees, yucca, cactus, and agave. Before construction, these species would be identified, removed, heeled-in, and irrigated in areas outside of the construction right-of-way, and then transplanted back onto the right-of-way as part of restoration activities. KRGT would locate transplant sites randomly along the right-of-way and/or at locations specified by the BLM. The north			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT50 (cont'd)			orientation of all cactus to be salvaged would be recorded and restored at the time of transplanting. KRGT would water the transplants at the time of initial planting. A second watering would occur 1 to 2 weeks following transplanting. KRGT proposes to use time release gels such as Dri-Water™ in the transplanting of succulent species to improve the success rate over its previous efforts. These time-release gels generally consist of starch-based substances that hold water and allow for its slow release over a period of time (typically 90 days). Because of the difficulty in handling larger specimens, Joshua trees over 6 to 8 feet in height and cholla cactus over 3 feet in height would not be transplanted but would be placed on the right-of-way during restoration and used as vertical mulch. Smaller species, such as button cactus and agave less than 6 inches in height, would be considered too small to feasibly transplant and would be used as vegetative mulch. The transplants that do not survive would also be beneficial to the reclamation process as vertical mulch. Vertical mulching would encourage the recruitment of native seeds, provide forage and cover habitat for native species, discourage colonization by invasive or exotic species, and reduce off-highway vehicle (OHV) use along the right-of-way. The processes of identification, removal, storage, and transplanting would be under the direction of a contracted reclamation specialist. KRGT would perform an accounting of all succulents to be disturbed along the right-of-way, to document the plants' treatment (*i.e.*, as either transplants or as vertical mulch). KRGT would provide a summary of this information to the FERC, the BLM, and the California Department of Fish and Game (CDFG) (in California) for review. • Specific areas designated as visually sensitive would receive additional treatments to mitigate visual impacts. These treatments would include			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT50 (cont'd)			transplanting of species salvaged from the right-of-way. In the mountains, high desert, and forested areas, transplanted species may include pinyon pine and juniper. These areas may also be planted with containerized plants, rootings, or cuttings. The species would be selected to complement the adjacent vegetation. In the desert areas, transplanted species would be limited to salvaged Joshua trees, cactus, agave, and yucca. In these areas, an emphasis would be placed on preserving the existing rock mulch and ensuring the desert varnish is exposed. Other treatments in visually sensitive areas may include the rebuilding of rimrock or the restoration of rockfaces. The different treatments would be employed on a site-specific basis in consideration of the visual classification, and the specific requirements of the land management agency or the landowner. KRGT's stated goal is to return the land to its predisturbance appearance within 5 years. Restoration of the Mojave desert areas to predisturbance appearance, however, would likely take a longer time. • Riparian/wetland crossings would be restored as quickly as possible following construction. Where excessive scouring is expected, banks would be armored with riprap. Riprap would extend above the high waterline and would be backfilled with topsoil and revegetated. Cuttings and rootings would be used to revegetate riparian woodlands in addition to the proposed seeding. • Measures would be taken to protect the right-of-way restoration efforts through natural and man-made barriers and signage where past problems have occurred on the pipeline. • Monitoring would begin 1 year following construction and continue annually. The length of the monitoring period varies by vegetation type. In general, monitoring in Wyoming, non-desert areas of Utah, and the Dixie National Forest would occur for 5 years following construction. The monitoring			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT50 (cont'd)			period for desert areas, including the southern part of Utah, and all parts of Nevada and California, would occur for 6 years. Monitoring data would be collected through field visits and aerial surveys. Success criteria would vary by state (see the site-specific discussion below). Annual reports would be provided to the appropriate agencies. Where the results of the annual monitoring indicate that the success criteria are not being met, remedial action would be taken. Areas where restoration is noted as being unsuccessful (*e.g.*, areas of active erosion, poor vegetative cover, or noxious weed infestation) would be identified by milepost. These locations and any remedial actions taken would be documented in reports that would be provided to the BLM, the FERC, the CSLC in California, and other appropriate land and resource management agencies within 3 months following the inspections. Remedial actions would include additional seedbed preparation, temporary grazing exclusion fencing, reseeding, and replanting. The treatments employed would be determined on a site-specific basis and in consultation with the landowner or land management agency and the applicable resource management agency. Should the success criteria not be met by the end of the monitoring period, KRGT would coordinate with the landowner or land management agency, the applicable resource management agency, and the CSLC in California to take corrective actions as appropriate. Coordination with these agencies could include extending the monitoring period until success is obtained.			
KRGT51	The cutting, clearing, and/or removal of existing vegetation within the construction work area in Wyoming (section 4.5.2.1).	Significant (CEQA Class II)	The Wyoming Reclamation Plan covers the pipeline route in Wyoming. KRGT would segregate up to 12 inches of topsoil. KRGT would reduce the depth of topsoil segregation to 6 inches where shallow soils or soils with stony subsoils occur. Where soils have a high content of cobble, rocks, or boulders, topsoil segregation may not occur. Rock brought to the surface during trenching operations on BLM or agricultural lands would be either	Less than significant (CEQA Class III)	Wyoming	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT51 (cont'd)			backfilled in the trench or removed to an approved area. KRGT would conduct seeding throughout the state using the species and application rates determined in consultation with the BLM and the Natural Resources Conservation Service (NRCS). Seed would be purchased commercially, and tested or certified to ensure compliance with Federal and state seed requirements. KRGT would only use locally adapted ecotypes of native shrub seed. KRGT would perform remedial actions as necessary following post-construction monitoring. These actions may include reseeding, replanting, supplemental mulching, and livestock fencing depending on the requirements of the individual site. Revegetation efforts would be considered successful 1 year after construction if a 3 percent cover of desirable species is achieved over 80 percent of the right-of-way. Revegetation efforts would be considered successful in the second year if a 10 percent cover is achieved over 80 percent of the right-of-way. The success criteria would increase by 10 percent each year until the fifth year when revegetation would be considered successful if 40 percent cover is achieved over 80 percent of the right-of-way. Revegetation efforts for woody plants used for visual or habitat restoration in riparian areas would be considered successful when an 80 percent survival rate is achieved. Annual monitoring reports would be provided to the FERC and the BLM.			
KRGT52	The cutting, clearing, and/or removal of existing vegetation within the construction work area in Utah (section 4.5.2.1).	Significant (CEQA Class II)	The Utah Reclamation Plan covers the pipeline route in Utah with the exception of the Dixie National Forest, which is covered under a separate plan (see KRGT53). Topsoil segregation in Utah would be the same as described for Wyoming (see KRGT51). Rock brought to the surface during trenching operations on agricultural lands would be disposed of at an approved area. Seeding would be conducted throughout the state. Seeded species and application rates have been determined in consultation with the BLM and the NRCS. Seed would be acquired from commercial seed producers, meet state seed laws, be tested for germination and purity by a certified tester, and used within 9 months of testing. Seed species for	Less than significant (CEQA Class III)	Utah	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT52 (cont'd)			desert habitats, beginning at about MP 418.5, would be acquired from local sources in southern Utah and Nevada. Transplanted succulents (*i.e.*, Joshua trees, yucca, cactus, and agave) would enhance the revegetation efforts in desert habitats. In desert tortoise critical habitat areas, cattle grazing would be controlled or eliminated from the right-of-way. Where necessary, Permeon™ would be applied to site-specific areas to enhance the natural desert varnish. Seed species used for these areas would be the same as proposed for the Mojave Desert in Utah and would be collected within or in the vicinity of desert tortoise critical habitat areas. Seed bag tags would be saved and submitted to the jurisdictional agencies within 30 days after completion of seeding. Signs would be installed at locations identified by the BLM or the FWS to deter OHV use in all restored areas of desert tortoise critical habitat (see KRGT153). In non-desert habitats, revegetation efforts would be considered successful 1 year after construction if a 3 percent cover of desirable species is achieved over 80 percent of the right-of-way. Revegetation efforts would be considered successful in the second year if a 10 percent cover is achieved over 80 percent of the right-of-way. The success criteria would increase by 10 percent each year until the fifth year when revegetation would be considered successful if up to 40 percent cover is achieved over 80 percent of the right-of-way. Revegetation efforts for woody plants used for visual or habitat restoration in riparian areas would be considered successful when an 80 percent survival rate is achieved. For desert habitats, KRGT has adopted qualitative and quantitative procedures and protocols from the BLM's *Draft Restoration Success Standards and Monitoring Plan* (BLM, 2001a). In addition to percent cover, qualitative monitoring in the first 5 years following construction would assess soil erosion, natural recruitment of native plant species, exotic plant species, and animal use. Additional quantitative monitoring would occur in the sixth year following			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT52 (cont'd)			construction. Revegetation efforts would be considered successful in the Mojave Desert and desert tortoise critical habitat if in the sixth year following construction, cover, density, and the richness of native perennial vegetation is equal to or exceeds 60 percent for these parameters in undisturbed reference areas. Annual monitoring reports would be provided to the FERC, the BLM, and the U.S. Department of Agriculture, Forest Service (FS).			
KRGT53	The cutting, clearing, and/or removal of existing vegetation within the construction work area in the Dixie National Forest (section 4.5.2.1).	Significant (CEQA Class II)	The Reclamation Plan for the Dixie National Forest covers the pipeline route between MPs 382.5 and 404.1. Topsoil segregation requirements would be the same as for Wyoming and Utah (see KRGT51 and 52). KRGT would dispose of rock brought to the surface during trenching operations in agricultural lands at an approved area. Seeding would be a part of the revegetation efforts throughout the Dixie treatment area where topsoil or surface fines are available. Seed would be applied using a rangeland seed drill with the exception of areas where drill seeding would be unsafe or physically impossible; in these locations seed would be broadcast. Seeded species and application rates have been determined in consultation with the reclamation specialists from the Dixie National Forest. Seed would be acquired from commercial seed producers and would be certified or tested before application to meet Federal and state seed requirements. Additional restoration treatments are prescribed for Hiway Spring, Magotsu Creek, and Moody Wash. Reestablishment of rock ledges, and willow plantings at Hiway Spring, and boulder placement and bank armoring at Magotsu Creek and Moody Wash would be coordinated with the FS. Disturbed riparian areas may be revegetated with willow cuttings from local riparian areas as requested by District Rangers. KRGT would perform remedial actions including reseeding, replanting, supplemental mulching, and livestock fencing. Revegetation efforts would be considered successful 1 year after construction if a 3 percent cover of desirable species is achieved over 80 percent of the right-of-way. Revegetation efforts would be considered successful in the second year if a 10 percent cover is achieved over 80	Less than significant (CEQA Class III)	Utah (Dixie National Forest)	FERC and FS monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT53 (cont'd)			percent of the right-of-way. The success criteria would increase by 10 percent each year until the fifth year when revegetation would be considered successful if up to 40 percent cover is achieved over 80 percent of the right-of-way. Revegetation efforts for woody plants used for visual or habitat restoration in riparian areas would be considered successful when an 80 percent survival rate is achieved. Annual monitoring reports would be provided to the FERC and the FS.			
KRGT54	The cutting, clearing, and/or removal of existing vegetation within the construction work area in Nevada (section 4.5.2.1).	Significant (CEQA Class II)	The Nevada Reclamation Plan covers the pipeline route in Nevada. KRGT would segregate topsoil to a depth of 4 to 6 inches except where soils have a high content of cobble, rocks, or boulders. Where there is little plant growth, vegetation would be crushed rather than bladed. KRGT would dispose of rock brought to the surface during trenching operations in agricultural areas at an approved area. In non-agricultural areas, KRGT may distribute excess rock on the surface in a manner that matches natural conditions or use it to create berms as OHV control. Where caliche material is present in the subsoil, KRGT would bury the material within the subsoil or remove it to an appropriate landfill. KRGT's remediation efforts in Nevada would include seeding in all disturbed areas of Nevada. Salvage and transplanting of Joshua trees, yucca, cactus, and agave would occur in Nevada as described above in the description of treatments common throughout the project area (see KRGT50). All succulents removed from the Dry Lake Compressor Station site would be relocated to a BLM-approved storage facility for holding until the material could be transplanted back on the right-of-way. In areas of desert tortoise critical habitat, treatments would occur in Nevada in the same manner as described for desert tortoise critical habitat in Utah. Additionally, KRGT would plant shrubs and install deterrence signage adjacent to major road crossings for the purposes of OHV control in desert tortoise critical habitat. Shrub species and planting locations would be coordinated with the BLM. Additional discussion on OHV control is provided in KRGT153.	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT54 (cont'd)			In addition to the Desert Tortoise Critical Habitat, the Nevada Reclamation Plan prescribes additional treatments for five sub-areas. Two of these sub-areas are the Red Rock Canyon National Conservation Area (NCA) between MPs 552.0 and 557.4 and the Humboldt-Toiyabe National Forest/Spring Mountains National Recreation Area (NRA) between MPs 557.4 and 558.3. KRGT's proposed treatments for these two areas emphasize redistribution of rock mulch and the placement of rock clusters or outcrops to restore the natural desert varnish. KRGT would also transplant selected woody species, primarily *Coleogyne ramosissima* (black brush), creosote bush, and succulents, salvaged from the disturbed portions of the right-of-way. KRGT developed the following additional specific treatments for these areas in consultation with the BLM: • use the seed mix developed in consultation with the BLM. The seed would be collected from local sources in southern Nevada. KRGT would collect additional seed from existing native shrub species located along the right-of-way within the Red Rock Canyon NCA and Humboldt-Toiyabe National Forest/Spring Mountains NRA during the spring of 2002. KRGT would coordinate the selection of species and collection methods with the BLM. A baseline survey would be conducted during the spring of 2002 in cooperation with the BLM to identify and inventory plant communities in order to finalize the site-specific plans for seed collection, salvage, and transplanting; • propagate a portion of the collected native shrub seed to be grown in "tall pots" for transplanting on the right-of-way. "Tall pots" are nursery plant containers, generally 24 to 30 inches deep, that are often used for revegetation purposes because they allow for significant root development before transplanting. Propagation and growing would be conducted by a qualified nursery; • extend restoration treatments and seeding to cover the entire existing right-of-way including areas that would be outside of the current proposed right-of-			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT54 (cont'd)			way that were disturbed by construction of KRGT's existing pipeline; • salvage woody plants (notably black brush and creosote bush) from the construction work area that would otherwise be crushed or cleared during construction using a qualified contractor. The salvaged plants would be grown for a minimum of 4 months in containers before transplantation back onto the right-of-way. KRGT would replant the salvaged plants in natural appearing groups toward the edges of the new and existing right-of-way to break up the existing linear appearance as a primary means to mitigate residual visual impacts as well as to provide vertical habitat structure. The BLM would provide additional transplants for use within the Red Rock Canyon NCA; • transplant additional salvaged succulents provided by the BLM on the existing right-of-way; • treat the north-facing slope (MP 556.6) in the vicinity of Wilson Tank and the areas at MPs 557.3 and 558.2 with Permeon™ to reduce visual contrast. Permeon™ may also be used in other areas as required on a case by case basis; • reshape existing berms and lines of boulders across the existing right-of-way and naturally arrange and treat new berms with Permeon™; and • increase performance standards. Restoration of the Red Rock Canyon NCA and Humboldt-Toiyabe National Forest/Spring Mountains NRA would be considered successful if plant cover, density, and richness of native perennial vegetation is equal to or exceeds 80 percent in 6 years. The third sub-area addressed by the Nevada Reclamation Plan is dry wash crossings. At dry washes in Nevada, KRGT would minimize the width of the native area to be disturbed and the amount of vegetation removed, topsoil segregation and imprinting would be omitted, the depth of the pipeline would be increased to a minimum of 5 feet, and banks would be armored with riprap as necessary.			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT54 (cont'd)			The fourth sub-area discussed in the Nevada Reclamation Plan is the Meadow Valley Wash area, between MPs 473.10 to 474.60, where mesquite woodlands have been identified. To mitigate impacts on this habitat, KRGT would seed disturbed areas with *Prosopis glandulosa* (mesquite) and *Atriplex lentiformis* (quail bush) species as requested by the BLM and the U. S. Fish and Wildlife Service (FWS). Additionally, KRGT would plant mesquite seedlings acquired from local commercial sources to enhance existing stands of mesquite. The fifth sub-area discussed in the Nevada Reclamation Plans are the locations where special status plant species have been identified. KRGT has developed specific reclamation treatments for three special status species: three-cornered milkvetch, yellow two-tone beardtongue, and rosy two-tone beardtongue (see KRGT111). In the locations where these plants are identified, the area of disturbance would be kept to the absolute minimum. Plants adjacent to but outside the construction zone would be protected by flagging or fencing. Where available, seed would be collected from special status species in the local vicinity in accordance with the measures outline in KRGT111. In Nevada the success criteria would be the same as described for Utah in desert habitats (see KRGT52). KRGT has adopted the BLM's *Draft Restoration Success Standards and Monitoring Plan*. Revegetation efforts would be considered successful in the Mojave Desert and desert tortoise critical habitat if in the sixth year following construction, cover, density, and the richness of native perennial vegetation is equal to or exceeds 60 percent for these parameters in undisturbed reference areas. Annual monitoring reports would be provided to the FERC and the BLM.			
KRGT55	The cutting, clearing, and/or removal of existing vegetation within the construction work area in California (section 4.5.2.1).	Significant (CEQA Class II)	The California Reclamation Plan covers the pipeline route in California and includes treatments that are generally the same as Nevada (see KRGT54). KRGT's treatments for dry wash crossings would be the same as in Nevada (see KRGT54). No desert wash species (*e.g.*,desert willow,	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT55 (cont'd)			smoke trees, or mesquite) have been identified within the construction work area; however, if it is determined that any of these species would be affected by construction, KRGT would notify the CDFG before disturbance and mitigation for the affected species would be established by the CDFG. Four different seed mixes were developed specifically for California in consultation with the BLM. All seed would be locally collected native species purchased from commercial vendors. KRGT would submit seed bag tags to the FERC, the BLM, the CSLC, and the CDFG confirming the species and origin of the seed. The seed would be tested or certified to ensure compliance with Federal and state seed requirements before use. Certificates of the seed analysis would also be provided to the FERC, the BLM, the CSLC, and the CDFG. Several state-listed plant species have been identified during surveys within the right-of-way in California. KRGT has developed plans in consultation with the BLM and the CDFG to protect listed species within the project area. KRGT would: • minimize the areas of disturbance; • flag or fence sensitive populations adjacent to but outside the construction work area; • monitor the segregation of topsoil; and • collect and plant seed onto the right-of-way after construction. All succulent species within the disturbed areas in California would be salvaged. Fifty percent of the succulents to be salvaged, generally the individuals considered by KRGT to be too large or too small to be feasibly transplanted, would be moved to a BLM nursery. The remaining 50 percent of salvaged succulents would be transplanted back onto the right-of-way whether alive or dead to aid revegetation efforts and to provide OHV control. At the request of the BLM, all transplanted Joshua trees would be treated with Superthrive™ root hormone to promote root development. Only very large, multi-branched Joshua trees that are not feasible to plant upright would be			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT55 (cont'd)			laid down within the right-of-way. Intact, large shrubs with root crowns removed from areas of grading would be windrowed at the edge of the right-of-way and transplanted back onto the right-of-way at road crossings and visually sensitive areas during restoration. The primary benefits of using these shrubs would be as a form of vertical mulch, enhancement of visually sensitive areas, and OHV deterrence; however, some may survive. All high visibility road crossings and traveled wash crossings would receive visual mitigation treatments. Monitoring in California would be performed under the same criteria described for desert habitats in Utah and Nevada. Success criteria in California would generally be the same as described for desert habitats in other areas of the project, with the exception of desert tortoise critical habitat. In those areas within California, restoration would be considered successful if in the sixth year following construction, cover, density, and the richness of native perennial vegetation is equal to or exceeds 70 percent for these parameters in undisturbed reference areas. Annual monitoring reports would be provided to the FERC, the BLM, the CSLC, and the CDFG.			
KRGT56	The Coyote Creek Compressor Station would permanently remove about 30.9 acres of sagebrush scrub. The Salt Lake Compressor Station would permanently remove about 32.0 acres of *Gutierrezia sarothrae* (broom snakeweed), *Agropyron intermedium* (bunchgrass), *Salsola iberica* (Russian thistle), and *Bromus tectorum* (cheat grass). The Dry Lake Compressor Station would permanently remove about 22.9 acres of Mojave creosote-bursage (section 4.5.2.2).	Less than significant (CEQA Class III)	All succulents removed from the Dry Lake Compressor Station site would be relocated to a BLM-approved storage facility for holding until the material could be transplanted back onto the right-of-way (see KRGT54). No other specific mitigation proposed.	Less than significant (CEQA Class III)	Wyoming Utah Nevada	No monitoring required.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT57	Although not considered threatened or endangered, the dominant species within yucca, cactus, and agave communities are generally protected under various Desert Native Plant Acts in the states crossed by the project. Field surveys identified areas of native yucca, cactus, and agave species along the Veyo Loop, Dry Lake Loops 1 and 2, Goodsprings Loop, and Daggett Loop (section 4.5.3).	Significant (CEQA Class I)	KRGT proposes to implement specific conservation measures for yucca, cactus, and agave communities. These conservation measures include preconstruction identification of species suitable for salvage within the construction right-of-way and temporary workspace areas. Salvagable plants would be dug up and temporarily stored in non-construction areas. Following construction, KRGT would transplant these plants back onto the right-of-way. The discussion of the site-specific Reclamation Plans contains a more detailed description of transplanting methods (see KRGT50 to 55). Survival rates for the large plants, particularly Joshua trees, can be low; however, it is anticipated that some plants would survive. KRGT has included additional treatments to improve the success of transplanting Joshua trees, such as the use of DriWater™ time release gels and in California, the use of Superthrive™ rooting hormone. Additionally, the plants that do not survive would be beneficial to the reclamation process as vertical mulch. Vertical mulching would encourage the recruitment of native seeds, provide forage and cover habitat for native species, discourage colonization by invasive or exotic species, and reduce OHV use along the right-of-way. All succulents removed from the Dry Lake Compressor Station site would be relocated to a BLM-approved storage facility for holding until the material could be transplanted back onto the right-of-way. In California, all succulents within the disturbed area would be salvaged. Fifty percent of the succulents to be salvaged, generally the individuals considered by KRGT to be too large or too small to be feasibly transplanted, would be moved to a BLM nursery with the remaining 50 percent transplanted back onto the right-of-way. In addition, KRGT has agreed to adopt the qualitative and quantitative procedures and protocols from the BLM's *Draft Restoration Success Standards and Monitoring Plan.*	Significant (CEQA Class I)	Utah Nevada California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT58	Mesquite woodlands occur near the Meadow Valley Wash between MPs 474.2 and 474.4, which is within	Significant (CEQA Class II)	KRGT would flag any branches overhanging the right-of-way to clearly identify these trees and avoid any indirect impacts. Further, KRGT would reduce impacts on potential habitat in the Meadow Valley Wash area by	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT58 (cont'd)	the Moapa Habitat Management Area. Mesquite was identified along the route during field surveys near the proposed crossing location of the Muddy River (about MP 477.1) and in an agricultural field near MP 477.4. Mesquite woodlands provide important habitat for many plant and animal species in the Mojave Desert (section 4.5.3).		removing tamarisk, seeding disturbed soils with mesquite and quail bush seed, and planting mesquite seedlings to enhance existing stands of mesquite. To address the BLM's concern regarding the potential for the newly cleared right-of-way to increase OHV use, KRGT would install natural and artificial barriers using boulders and/or cleared vegetation, with an emphasis on placing visual obstructions at any existing crossings of the right-of-way (see KRGT153). Specific OHV barrier types and locations would be determined in consultation with the BLM and other landowners in the area.			
KRGT59	Riparian vegetation communities are important in that they provide high quality wildlife habitat that supports a greater species diversity than the more arid vegetative communities. About 163.2 acres of riparian vegetation would be affected by construction (section 4.5.3).	Significant (CEQA Class II)	KRGT would minimize the impact on riparian communities by crossing the Bear, East Branch Weber, and Weber Rivers using the HDD method and by implementing its WWCM Procedures (see KRGT32). KRGT would not clear vegetation between temporary extra workspace areas and the edge of waterbodies and wetlands. Where the pipeline parallels but does not cross the waterbody, KRGT would attempt to maintain at least 15 feet of undisturbed vegetation between the waterbody and the right-of-way. Where possible at wetland crossings, KRGT would cut vegetation at ground level leaving root systems in place. KRGT would also revegetate riparian areas as soon as possible with a variety of grass species, and cuttings, rootings, or shrubs. KRGT would identify the species and planting densities to be used through consultations with the BLM, the COE, the FS, and other appropriate agencies.	Less than significant (CEQA Class III)	Wyoming Utah Nevada	FERC and BLM monitors would verify mitigation is followed.
KRGT60	Noxious weeds are likely to invade disturbed grounds and may continue to invade for many years after the initial disturbance. The removal of existing vegetation and the disturbance of soils during	Significant (CEQA Class II)	KRGT's implementation of its Noxious Weed Plan for the proposed project would avoid many of the problems encountered by its previous project. KRGT would treat both the new right-of-way and the existing right-of-way for noxious weeds where the rights-of-way are adjacent (93 percent of the route). Before construction, KRGT would provide information and training regarding noxious weed identification and control to its contractors. Existing areas	Less than significant (CEQA Class III)	All	FERC, CSLC, BLM, and FS monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT60 (cont'd)	construction could create optimal conditions for the invasion and establishment of invasive, non-native species. Construction equipment traveling from weed-infested areas into weed-free areas could also facilitate the dispersal of invasive weed seeds and propagules, and result in the establishment of noxious weeds in previously weed-free areas (section 4.5.4).		of noxious weed infestation would be flagged in the field. KRGT would prohibit equipment access to areas of weed infestations until weed control measures have been implemented. Herbicides or other control methods, such as mowing or discing, would be performed by KRGT in these areas before construction to prevent the spread or proliferation of weeds. Mechanical treatments that would disturb the soil surface would be avoided in native habitats. Following the initial treatment of known infestations, KRGT would implement the following preventive measures throughout construction: • Vehicles would be required to arrive at the work site clean and weed free. The contractor and the EI would ensure that vehicles are free of soil and debris capable of transporting weed seeds or other propagules. • In areas with existing noxious weed infestations, vegetation, soil, and trench spoil material would be stockpiled in a location adjacent to where they were removed and following construction would be returned to their previous location. • Following work at identified noxious weed-infested sites, the contractor would use compressed air to remove soil and propagules from machinery and vehicles before transport offsite. • Materials used for erosion control would be obtained from state-cleared sources that are free of noxious weeds. • Reclamation of disturbed areas would occur immediately following construction as described in the site-specific Reclamation Plans. If noxious weeds become established following construction despite the precautions outlined above, KRGT would implement the following: • In non-native habitats, mechanical treatments, which may include mowing or discing of weed vegetation, would be employed. Where mechanical treatments are used, subsequent seeding would			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT60 (cont'd)			occur in accordance with the site-specific Reclamation Plans to minimize the reestablishment of weeds. Mechanical treatments that would disturb the soil surface would be avoided in native habitats. • Herbicide applications would be either spot treatments or larger broad-scale treatments. Where broad-scale applications occur, subsequent seeding would occur in accordance with the site-specific Reclamation Plans. KRGT's treatment of noxious weeds would be in accordance with Federal and state laws, and land management agency requirements. For sites occurring on BLM lands, KRGT would notify the appropriate BLM Field Office before implementing the treatment. The target species, method, and timing of controls would be determined in consultation with BLM personnel. KRGT would provide funds for county personnel to provide weed control services where there are cooperative agreements between the BLM and the local county. If these agreements are not in place, KRGT would perform or contract the weed control services. Under a special agreement with the BLM, KRGT would submit a Pesticide Use Proposal annually for each state crossed by the proposed pipeline. Following chemical application, KRGT would submit Pesticide Application Records. For noxious weed infestation sites on FS lands, KRGT would notify the appropriate District Ranger office before implementing the treatment. The target species, method and timing of controls would be determined in consultation with the appropriate FS personnel. KRGT would provide funds for county personnel to provide weed control services where there are cooperative agreements between the FS and local county. If these agreements are not in place, KRGT would perform or contract the weed control services. Once construction is complete, KRGT proposes to monitor for and treat noxious weed infestations. Noxious weed monitoring would occur concurrent with the site-specific			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT60 (cont'd)			Reclamation Plan monitoring. Monitoring would begin the year following construction and thereafter would occur every other year for 5 years. In addition, areas of known infestations would be inspected annually and treated as necessary. Monitoring data collected would include the noxious weed species, their location, and the extent of the infestation. The results of the monitoring would be provided to the local regulatory agencies (*i.e.*, the BLM, the FS, local weed districts, and the CSLC in California).			
KRGT61	The use of herbicides to treat noxious weeds has the potential to impact environmental resources on or adjacent to the construction work area due to improper use or accidental spills (section 4.5.4).	Significant (CEQA Class II)	To minimize the potential impacts associated with improper herbicide application or accidental spills, KRGT has developed specific herbicide application, handling, and cleanup guidelines. These guidelines are included in KRGT's Noxious Weed Plan (see KRGT60 and ARM5). KRGT would consult with local weed districts and land management agencies to determine the appropriate product and application method. KRGT would use a licensed contractor or provide funds for county personnel to provide weed control services. Applications would follow EPA label instructions and be performed in accordance with Federal, state, and local laws and regulations. The measures KRGT would implement include, but are not limited to, the following: • Suspend herbicide applications when: a. wind velocities exceed 6 miles per hour (mph) for the application of liquid materials and 15 mph for the application of granular materials; b. ice covers the target vegetation; or c. precipitation is occurring or imminent. • Only the quantity of herbicide required for 1 day of work would be transported to the construction site. Herbicides would be transported only in approved containers that would be inspected daily for leaks. • Mixing of herbicides would be performed offsite and at a distance of 200 feet from wetlands, waterbodies, or other sensitive resources. • All herbicide contractors would be required to maintain spill kits at herbicide storage areas and on their trucks and copies of material safety data sheets.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
ARM5	Weed control before seed dispersal is most effective and would reduce the amount of chemicals and resources required for treatment. Further, noxious weed competition with desirable species can be highly detrimental to restoration efforts (section 4.5.4).	Significant (CEQA Class II)	Before construction, KRGT would file with the FERC and the CSLC a revised Noxious Weed Plan. The revised plan would include provisions for KRGT to: • update its list of known noxious weed infestations to include the data acquired during its noxious weed surveys conducted in 2002; • treat all weeds deemed noxious by Federal, state, and/or county weed control agencies to the extent that they do not present a significant hindrance to reclamation efforts; and • schedule its weed control efforts to occur before seed maturation/ development.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
WILDLIFE AND AQUATIC RESOURCES						
KRGT62	The primary impact of the project on wildlife habitat would be the cutting, clearing, and/or removal of existing vegetation within the construction work area (section 4.6.1.1).	Significant (CEQA Class II)	KRGT would implement its site-specific Reclamation Plans to reduce impact on vegetation and wildlife habitat (see KRGT50 to 55).	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT63	The removal of desert vegetation would have a localized but long-term impact on wildlife. The arid environment characteristic of desert habitat is not conducive to plant growth and would slow the regeneration of vegetation following construction. The reestablishment of woody desert plants may take decades, and in some areas may take over 50 years (section 4.6.1.1).	Significant (CEQA Class II)	KRGT proposes to minimize this impact by limiting the size of its right-of-way and by locating as much of the construction right-of-way as possible within areas that were previously disturbed during construction of its existing pipeline or other utility projects. KRGT has developed its site-specific Reclamation Plans in consultation with the BLM, the FS, the CDFG, and other soil authorities. These plans include measures to promote right-of-way restoration after the pipeline is constructed (see KRGT50 to 55).	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT64	Temporary loss of habitat and access to water along the pipeline route in Utah	Significant (CEQA Class II)	KRGT would share in the cost of a wildlife guzzler (water catchment) near MP 402.0 within the Dixie National Forest with the FS, the Utah Division of Wildlife Resources	Less than significant (CEQA Class III)	Utah	FERC and BLM monitors would verify mitigation is

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT64 (cont'd)	could affect wildlife resources (section 4.6.1.1).		(UDWR), and possibly the Mule Deer Foundation. Installation and the specific site design of the guzzler would be completed by the UDWR. KRGT would also provide funding for a guzzler in the Pinnacle Pass area.			followed.
KRGT65	Clearing the construction right-of-way would result in the displacement of wildlife from areas on or adjacent to the right-of-way. Depending on the season, construction could also disrupt the courting or nesting of birds and breeding of other wildlife on or adjacent to the right-of-way. Smaller, less mobile wildlife, such as small mammals and reptiles, could be crushed by construction equipment or trapped in trenches (section 4.6.1.1).	Significant (CEQA Class II)	KRGT would reduce these impacts by placing earthen trench plugs, with ramps on either side, at maximum 1-mile intervals along the trench and at well-defined livestock and wildlife trails intersected by the trench. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench. These plugs would provide a means for wildlife to escape if they fall into the trench and also provide a bridge for other wildlife to cross the open trench. The pipeline trench would be inspected on a regular basis during construction and immediately before backfilling to identify entrapped animals. Wildlife found in trenches during construction would be coaxed to the nearest ramp and either encouraged to exit the trench, removed by net, or trapped (if other methods are unsuccessful). If any animal in the trench is determined to be a sensitive species (*e.g.*, desert tortoise), only authorized individuals would be allowed to remove it from the trench.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT66	Another potential long-term or permanent impact of the project would be the increased level of human-wildlife interaction in the project area. By expanding the existing right-of-way, the project could add to the existing matrix of open desert, jeep trails, dry washes, and cleared rights-of-way currently attracting OHV users (section 4.6.1.1).	Significant (CEQA Class II)	KRGT would only use existing roads as access to the construction right-of-way and would implement OHV blocking measures in sensitive areas as determined by the landowner or land management agency (see KRGT153).	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT67	Fires inadvertently started by construction equipment or personnel could also impact wildlife in the project area by reducing the amount of available habitat. This habitat loss could cause crowding in adjacent habitats reducing productivity and increasing stress-induced mortality (section 4.6.1.1).	Significant (CEQA Class II)	KRGT has developed a Wildfire Protection Plan to minimize the potential impacts associated with project-related fires. The plan describes measures KRGT would implement for prevention, pre-suppression, and suppression of fires during construction of the proposed project.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT68	Construction of the aboveground facilities could permanently convert wildlife habitat to an industrial use (section 4.6.1.1).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	All	No monitoring required.
KRGT69	Some impact on migratory birds could result from habitat loss and disturbance of nesting individuals associated with construction of the Kern River 2003 Expansion Project (section 4.6.1.2).	Significant (CEQA Class II)	In its comments on the draft EIS/EIR, the FWS recommended that KRGT not be authorized to begin construction until after August 1 to reduce the possibility of take of migratory birds. Based on the time frame necessary to complete the permitting process for the project, construction would not begin before August 1, 2002. In previous comments, the FWS recommended that KRGT complete construction in riparian areas identified along the proposed route in the Mojave Desert before May to avoid impacting migratory birds that may potentially nest in these areas. The only areas of defined riparian vegetation identified along the project corridor through the desert are along Meadow Valley Wash (MP 474.2) and the Muddy River (477.1). However, through coordination with the FWS and BLM, it was determined that suitable nesting habitat would not be affected near Meadow Valley Wash and only marginal habitat is present near the Muddy River. KRGT's current construction schedule is to begin construction through the Mojave Desert in November, clear vegetation by the end of February, and complete	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT69 (cont'd)			construction before May. This schedule would avoid impacting nesting migratory birds because chicks and nesting adults will have left their nests by November. Additionally, because clearing, which is scheduled to occur in February, would temporarily remove nesting habitat, it is unlikely that birds would attempt to nest on the right-of-way in late winter or early spring.			
KRGT70	Construction through big game crucial wintering ranges could force animals out of the designated ranges and into less suitable habitats. The potential for limited food availability could increase susceptibility to predation or freezing. Construction could temporarily disrupt animals using non-winter ranges, including critical fawning areas (section 4.6.1.3).	Significant (CEQA Class II)	KRGT's proposed schedule is to complete construction in Wyoming and Utah before November 1, which would avoid the period when crucial big game wintering ranges along the pipeline route are occupied. However, if construction continues past November 15 in critical mule deer winter ranges, KRGT would install trench plugs every 0.25 mile. In other areas, KRGT would provide at least one wildlife crossover (*e.g.*, unexcavated breaks or trench plugs) at maximum 1-mile intervals along the trench and at well-defined livestock and wildlife trails to facilitate passage of big game across the right-of-way. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench. Based on the time frame necessary to complete the permitting process for the project, construction would not begin until after August 1. Therefore, no impacts on animals using non-winter ranges, including critical fawning areas are anticipated. KRGT proposes to implement conservation measures, including revegetation of the right-of-way with native species, in crucial wintering ranges. Through consultation with applicable state and Federal agencies, KRGT developed appropriate seed mixes for these areas that are discussed in its site-specific Reclamation Plans (see KRGT50 to 55).	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.
KRGT71	The area generally between Meadow Valley Wash (MP 474.2) and the Muddy River (MP 477.1),	Significant (CEQA Class II)	See KRGT54, 58, and 91.	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT71 (cont'd)	known as the Moapa Valley, is considered to be a wildlife area of special concern because it is one of the few remaining locations with mesquite and defined riparian vegetation in Nevada. The Moapa Valley is also considered sensitive due to the potential presence of special status fish species (*i.e.*, Moapa speckled dace, Virgin River chub) in the Muddy River (section 4.6.1.3).					
KRGT72	Construction of the pipeline could affect wild horses in the Red Rock Herd Management Area (HMA) by creating a safety hazard, restricting the horses' access to the water source (Wilson Tank at Tunnel Springs), and by creating temporary access ways that may be used by unauthorized OHVs that could intentionally or unintentionally disturb the herd (section 4.6.1.4).	Significant (CEQA Class II)	KRGT would place earthen trench plugs, with ramps on either side, at all well-defined livestock and wildlife trails, including those used by wild horses and burros, and every 0.25 mile within the Red Rock HMA if there is not a well-defined trail. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.,* add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench. These plugs would provide a means for horses and burros to escape if they fall into the trench and also provide a bridge to cross the open trench. KRGT proposes to minimize the impact on the water source by limiting construction primarily to daylight hours, which would allow horses uninhibited after-hours access to the water tank. KRGT also proposes to transfer some water and create a temporary alternative water source away from the construction right-of-way. In the Red Rock HMA, temporary tanks holding 500 gallons of water would be placed in locations designated by the BLM, Las Vegas Field Office Wild Horse and Burro Specialist. The tanks would be installed and kept full of water 3 weeks before commencement of construction and during construction, and removed after the pipeline trench has been backfilled. KRGT would minimize the potential for increased OHV	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT72 (cont'd)			access by using only existing roads and implementing blocking measures such as placement of large rocks or construction of berms to prevent access following construction (see KRGT153).			
KRGT73	The pipeline route crosses the Clark Mountain HMA between MPs 579.4 and 603.7 on the Goodsprings Loop (section 4.6.1.4).	Less than significant (CEQA Class III)	No specific mitigation proposed.	Less than significant (CEQA Class III)	California	No monitoring required.
KRGT74	Increased sedimentation and turbidity from construction are the greatest threats to fishery resources. Sedimentation can adversely affect fish eggs and juvenile fish survival, benthic community diversity and health, and spawning habitat (section 4.6.2.1).	Significant (CEQA Class II)	KRGT would adhere to construction windows or implement special crossing methods to avoid or minimize potential impacts on coldwater or other sensitive, threatened, or endangered aquatic species during spawning seasons. KRGT's use of proper construction techniques outlined in its WWCM Procedures (see KRGT32) would further minimize the impacts of open-cut crossings. Permits would be obtained from appropriate state agencies before construction. Each crossing would be completed in accordance with KRGT's WWCM Procedures and applicable permit conditions to reduce soil erosion into waterbodies. KRGT would store trench spoil above and set back from the streambank. KRGT would also use sediment barriers such as silt fence to prevent or significantly reduce runoff into a stream. Construction would be completed as quickly as possible to shorten the duration of sedimentation and turbidity. KRGT would stabilize the construction site, including the streambanks, immediately following completion of construction. If circumstances require a construction delay, adequate site stabilization measures would be employed in accordance with KRGT's WWCM Procedures and permit conditions.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT75	During construction, clearing and grading of vegetative cover could increase erosion along streambanks and turbidity levels in the waterbodies. Alteration of the natural drainage ways or compaction of soils by	Significant (CEQA Class II)	To minimize these impacts, KRGT would use equipment bridges, mats, and pads to support equipment that must cross the waterbody or work in saturated soils adjacent to the waterbody. In accordance with its WWCM Procedures and where topography allows, during clearing and grading, KRGT would preserve a minimum of 10 feet of vegetation along the waterbody banks and locate temporary extra workspaces at least 50 feet from the edge of perennial waterbodies and intermittent waterbodies that have	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT75 (cont'd)	heavy equipment near streambanks during construction may accelerate erosion of the banks, runoff, and the transportation of sediment into waterbodies (section 4.6.2.1).		riparian vegetation present on the banks except where site-specific approval is granted. At the remaining intermittent waterbody crossings, KRGT would locate extra workspaces 10 feet from the edge of the water. KRGT would also install and maintain sediment barriers, such as silt fence, across the right-of-way at the edge of waterbodies throughout construction except for short periods when removal of these sediment barriers is necessary to dig the trench, install the pipeline, or restore the right-of-way.			
KRGT76	For any large construction project, there is the potential for spills of fuel or other hazardous liquids from storage containers, equipment working in or near streams, and fuel transfers. Any spill of fuel or other hazardous liquid that reaches a waterbody would be detrimental to water quality. The chemicals released during spills could have acute, direct effects on fish, or could have indirect effects such as altered behavior, changes in physiological process, or changes in food sources. Fish could be killed if a large volume of hazardous liquid is spilled into a waterbody (section 4.6.2.1).	Significant (CEQA Class II)	To minimize the potential for spills, KRGT would implement the measures in its Spill Plan (see KRGT27). Adherence to the Spill Plan would prevent a large spill from occurring near surface waters. KRGT would prohibit the storage of fuels within 100 feet of the bank of a waterbody. Additionally, the fueling of construction equipment by mobile tankers or mobile tanks would not be allowed within 100 feet of a waterbody bank. KRGT would evaluate these setbacks on a case-by-case basis where agencies require a greater setback for resource protection. An exception to this 100-foot setback would be the refueling of hydrostatic test water pumps. Where this is necessary, temporary containment structures, such as straw bales or earth berms with impervious liners, would be installed around the pumps. Personnel would perform frequent maintenance and inspection of these structures. Should a small spill occur, the measures in the Spill Plan would decrease the response time for control and cleanup of the spill.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT77	Both the Bear and Weber Rivers support coldwater fisheries and are potential sources for hydrostatic test water. Hydrostatic testing could affect aquatic	Significant (CEQA Class II)	See KRGT47.	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT77 (cont'd)	resources in these rivers (section 4.6.2.1).					
KRGT78	Downstream sedimentation associated with hydrostatic test water discharges could impact fisheries (section 4.6.2.1).	Significant (CEQA Class II)	Hydrostatic test water would be discharged to stable, upland areas along the construction right-of-way. KRGT would not discharge test water directly into surface waters unless authorized or required by its NPDES permits. Energy-dissipating devices and/or filter bags would be used to prevent erosion, streambed scour, suspension of sediments, and excessive streamflow. KRGT would not use chemical additives during hydrostatic testing. Discharge locations would depend on the length of the test section and applicable Federal, state, and local guidelines.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT79	KRGT expects that the same sources of hydrostatic test water would be used to provide the water for dust control activities. The impacts of the water withdrawals for dust control would be the same as those for hydrostatic test water withdrawals (section 4.6.2.1).	Significant (CEQA Class II)	Implementation of KRGT's measures to reduce impacts associated with hydrostatic test water withdrawals would reduce the impacts of water withdrawals for dust control activities to less than significant levels (see KRGT45).	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT80	Pipeline construction could disturb and suspend existing sediments in the water column, temporarily degrading water quality and redistributing contaminants downstream. This may have an impact on aquatic and benthic species, and on downstream water uses (section 4.6.2.1).	Significant (CEQA Class II)	See KRGT43 and 44.	Less than significant (CEQA Class III)	Utah Nevada	FERC monitors would verify mitigation is followed.
KRGT81	If in-stream blasting is required, aquatic organisms close to the	Significant (CEQA Class II)	KRGT would use techniques such as scare charges or banging on a piece of pipe before the blast to scare aquatic organisms from the blast area before blasting is	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT81 (cont'd)	blast may be injured or killed (section 4.6.2.1).		conducted. It is anticipated that the preparation of the rock for blasting (*i.e.*, drilling shot holes) would cause enough disturbance to displace most aquatic organisms from the immediate vicinity of the blast. Immediately following blasting, KRGT would remove shot rock that impedes stream flow. See KRGT2/ARM1.			mitigation is followed.
KRGT82	The degree of impact associated with in-stream activities can be affected by the season of construction and the crossing method. Construction during periods of sensitive fish activity (*i.e.*, spawning and migration) can have a greater impact on fish than construction during other periods. Of the waterbodies with the potential to contain fisheries, 11 have agency-recommended construction timing restrictions designed to protect sensitive fisheries (section 4.6.2.1).	Significant (CEQA Class II)	KRGT proposes to cross the Bear, East Branch Weber, and Weber Rivers using the HDD method. KRGT prepared a Drilling Mud Release Contingency Plan that includes measures for the prevention, cleanup, and reporting of an inadvertent release of drilling mud (see KRGT40). Implementation of KRGT's Spill Plan (see KRGT27) would minimize the potential for a chemical spill to less than significant levels and would provide for protection of sensitive resources (*e.g.*, waterbodies) in the event a spill does occur. KRGT would adhere to the recommended timing restrictions for Beaver Dam Wash at MP 431.0 if water is present within this waterbody when encountered by the construction spread during normal progression. If this waterbody is dry when encountered by the construction spread, KRGT proposes to proceed with the crossing outside of the window. The remaining waterbodies are known to contain special status species (see KRGT108 to 110).	Less than significant (CEQA Class III)	Wyoming Utah Nevada	FERC and BLM monitors would verify mitigation is followed.
SPECIAL STATUS SPECIES						
KRGT83	In general, the impacts of the project on special status species would be the same as described for vegetation, wildlife, and aquatic resources. However, the magnitude and duration of these impacts could be greater for special status species, because their distribution and relative abundance	Significant (CEQA Class II)	KRGT would implement general minimization and conservation measures to reduce the impact of the project on all special status species. KRGT would develop a construction environmental awareness program to educate contractors and inspectors of the species that have the potential to occur along the project, explain that wildlife must not be harassed or harmed, explain that all project traffic must be restricted to approved access roads and work areas, and explain all agency requirements. Contractors would be informed during training sessions that they are not authorized to handle or otherwise move listed or other special status species at any time. Also,	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT83 (cont'd)	usually are more limited. Special status plants in the pipeline right-of-way would be lost when the right-of-way is cleared, and special status animals could be affected by the temporary loss of habitat during construction. Mobile individuals would likely be displaced to other habitat but could be lost because of intra-specific competition, predation, or other stresses. Immobile species and juveniles could be killed. Construction of aboveground facilities would result in a permanent loss of habitat. Special status species could also be affected where blasting is required (section 4.7.1).		KRGT would be required to employ at least two EIs per construction spread who would be responsible for overseeing project environmental protection measures, including those for special status species. Site-specific impacts and additional species-specific conservation measures are discussed below (see KRGT84 to 119 and ARM9).			
KRGT84	Direct and indirect impacts on bald eagles could occur depending on proximity of disturbance to an active nest and timing of that disturbance. Removal of an active nest during construction could result in the loss of eggs or death of nestlings. Construction near an active eagle nest could result in nest abandonment; overheating, chilling, or desiccation of unattended young causing nestling mortality;	Significant (CEQA Class II)	KRGT plans to conduct aerial surveys for raptor nests, including bald eagles, during the nesting season before construction in 2002. These surveys would cover 1 mile on either side of the outside edge of the construction work area. If an eagle nest is identified during the surveys, KRGT would follow the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances* to minimize potential impacts of the project on bald eagles, unless site-specific treatment of a nest is approved by the BLM, the local FWS Field Office, and the UDWR (for nests in Utah).	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT84 (cont'd)	premature fledging; and ejection of eggs or young from the nest (section 4.7.2).					
KRGT85	Surveys in 2001 identified potential habitat along the Opal and Muddy Creek Loops (between MPs 0.0 and 26), and identified mountain plovers at three sites along the pipeline route in this area. Indirect impacts could occur in the short term if available forage and shelter are reduced due to clearing or if a lack of vegetation cover along the right-of-way made the plover more susceptible to predation (section 4.7.2).	Significant (CEQA Class II)	KRGT proposes to conduct surveys using FWS-approved survey protocols again during the early breeding season in 2002 to determine if plovers are nesting on or adjacent to the right-of-way. Based on the latest *Mountain Plover Survey Guidelines* (FWS, 2001), construction after July 10 would not be likely to affect mountain plovers. Because of the time frame necessary to complete the permitting process for the project, construction would not begin before August 1, 2002. Per FWS and Wyoming Game and Fish Department (WGFD) recommendations, KRGT also would return the area of suitable plover habitat to preconstruction conditions using native seed mixes. No aboveground facilities, access roads, or two-tracks would be constructed in mountain plover habitat.	Less than significant (CEQA Class III)	Wyoming	FERC and BLM monitors would verify mitigation is followed.
KRGT86	The removal of even marginal habitat could indirectly affect southwestern willow flycatchers by eliminating potential future forage and nest habitat (section 4.7.2).	Less than significant (CEQA Class III)	No species-specific mitigation proposed (see KRGT83).	Less than significant (CEQA Class III)	Nevada	No monitoring required.
KRGT87	The removal of even marginal habitat could indirectly affect western yellow-billed cuckoos by eliminating potential future forage and nesting habitat (section 4.7.2).	Less than significant (CEQA Class III)	No species-specific mitigation proposed (see KRGT83).	Less than significant (CEQA Class III)	Nevada	No monitoring required.
KRGT88	Impacts of the proposed project on black-footed ferrets would be indirect and limited to temporary	Significant (CEQA Class II)	If construction within any of the areas potentially containing black-footed ferrets would occur after September 23, 2002, KRGT would resurvey the areas to be affected and would consult with the FWS regarding	Less than significant (CEQA Class III)	Wyoming Utah	No monitoring required.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT88 (cont'd)	loss of suitable habitat through crushing of white-tailed prairie dog burrows, which are abundant outside of the proposed construction work area (section 4.7.2).		survey results and the need for mitigation.			
KRGT89	Construction of the project would be expected to directly affect about three or four prairie dogs (3 acres of occupied habitat with 1.12 prairie dogs per acre of occupied habitat). Potential indirect effects of the project on Utah prairie dogs include temporary loss of forage and shelter due to vegetation clearing and collapsing of burrows and temporary disruption of foraging and resting activities due to disturbance associated with construction equipment (section 4.7.2).	Significant (CEQA Class II)	KRGT would conduct preconstruction surveys to determine if the extent of occupied prairie dog habitat and estimate of Utah prairie dogs within the occupied habitat require modification. KRGT would use agency-approved biologists and survey methods, and would survey the proposed right-of-way and access roads through prairie dog habitat. To provide the maximum opportunity for Utah prairie dogs to vacate the right-of-way before construction, in accordance with the recommendations of the BLM, the FWS, and the UDWR, KRGT would: • begin construction between July 1 and September 30 (the period when prairie dogs are most likely to be found aboveground); and • initiate ground disturbance before September 30 in occupied habitat if the full construction spread is not anticipated to reach the area until after September 30. KRGT would further minimize impacts by implementing the following agency-recommended conservation measures: • provide the BLM and the UDWR 7 to 10 days notification before the initiation of construction within occupied prairie dog habitat; • initiate a disturbance regime (*e.g.*, traverse the area with a few pieces of equipment daily) before construction to reduce the potential for prairie dogs to be within the right-of-way during active construction; • install fencing (minimum of 3 feet tall, opaque, and durable) along the edge of the right-of-way within 2	Less than significant (CEQA Class III)	Utah	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT89 (cont'd)			days of initial disturbance; • extend fencing a minimum of 150 feet beyond the edge of identified occupied habitat; • install escape ramps and trench plugs central to each identified area of prairie dog activity; • inspect the trench daily in prairie dog habitat for the presence of trapped individuals; • encourage trapped individuals to exit the trench via escape ramps or physically remove individuals that do not use escape ramps; • allow only the EI or other qualified biologist to physically remove trapped individuals; and • maintain a speed limit of 15 mph along the construction right-of-way through prairie dog habitat. Following construction, prairie dogs are expected to reoccupy construction work areas. To compensate for impacts on habitat, KRGT would: • make a monetary contribution to an account specified by the BLM for restoration of disturbed prairie dog habitat in Iron County, Utah. Compensation would be based on the acres of prairie dog habitat impacted and would be adjusted based on the results of the 2002 preconstruction survey.			
KRGT90 ARM6	Construction of the project would contribute to a decline in value of a linear strip of desert tortoise habitat. In addition to the loss of potential habitat, tortoises could be killed or injured as a result of being crushed by vehicles, movement of soil, or entrapment in burrows or open trenches. The application of water for dust control in desert areas	Significant (CEQA Class II)	To compensate for desert tortoise habitat affected during construction, KRGT would implement the following measures: • Impacts on desert tortoise habitat would be offset through either an acceptable land acquisition or an assessed financial contribution. Compensation rates would be as follows: a. 5:1 for new disturbance in tortoise critical habitat; b. 3:1 where overlapping previously disturbed tortoise critical habitat; and c. 1:1 for all non-critical habitat. • KRGT would provide funding to a third party to be	Less than significant (CEQA Class III)	Utah Nevada California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT90 ARM6 (cont'd)	could attract desert tortoises to the construction right-of-way. Ongoing operation and maintenance of the pipeline could also adversely affect the desert tortoise. Pipeline markers could provide perches for aerial predators in areas where natural perches are not available and therefore increase the threat of predation, primarily for juvenile tortoises. In addition, the project would cross a Large Scale (desert tortoise) Translocation Site between MPs 564.8 and 578.5. Tortoise densities within this translocation site are about 10 times greater than densities outside of the area (section 4.7.2).		used for desert tortoise habitat acquisition, including enhancement and management (endowment) fees. KRGT proposes to enter into a Memorandum of Agreement with the FWS and The Conservation Fund, a third-party organization specifically identified by the FWS through which KRGT could implement desert tortoise mitigation for impacts in Utah and Nevada. In California, KRGT proposes to provide monetary compensation to the CDFG through a third party. KRGT is currently in negotiations with the Desert Tortoise Preserve Committee (DTPC) to develop a third-party agreement between DTPC, KRGT, and the CDFG outlining KRGT's commitment to use the DTPC for meeting desert tortoise compensation requirements on private lands crossed by the project. KRGT would pay compensation fees directly to the BLM for public lands crossed in California. If required, KRGT would post the necessary bond or letter of credit to guarantee with the BLM and the CDFG and/or the CSLC to ensure that mitigation would be implemented. The final mitigation acreage would be based on actual construction impacts. In order to minimize the extent of injury, death, and harassment of tortoises during construction of the proposed project, KRGT would conduct an agency-approved preconstruction survey in areas of suitable habitat to identify actual tortoise locations and take appropriate measures, in accordance with specified guidelines, to either protect or relocate burrows and tortoises. KRGT developed 39 conservation measures to minimize potential impacts on desert tortoises during construction. These proposed conservation measures are listed in their entirety in appendix S. Some of the measures are summarized below. • KRGT would designate a field contact representative (FCR) who would be responsible for overseeing compliance with protective stipulations			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT90 ARM6 (cont'd)			for listed species. The FCR would be onsite during all project activities. The FCR would have the authority to halt all activities that are in violation of the stipulations. The FCR would have a copy of all stipulations when work is being conducted on the site. The FCR could be a project manager, KRGT representative, or a contract biologist. • KRGT would submit the names and a statement of qualifications of all proposed authorized biologists to the BLM and the FWS, and the CSLC and the CDFG in California, for review and approval at least 30 days before initiation of any desert tortoise clearance surveys. Project activities would not begin until authorized biologists have been approved. • KRGT would restrict all activities to the right-of-way and approved access roads/storage areas. If unforeseen circumstances require expansion of this width, the potential expanded work areas would be surveyed for desert tortoise before use of the area. • Within desert tortoise range, authorized biologists would conduct preconstruction surveys of the right-of-way as follows: a. Within suitable tortoise habitat: During the tortoise active season (March 1 - October 31), or when temperatures and environmental conditions are conducive to tortoise activity, as determined by the authorized biologist, two surveys would occur. The first survey would be conducted within 14 days before surface disturbance. The second survey would occur immediately before surface disturbance. During the inactive season (November 1 - February 28) and as noted above, one survey would occur within 72 hours of surface disturbance. b. Outside suitable tortoise habitat: During the desert tortoise active season, or as stipulated above, a survey would be conducted between 7 and 21 days before surface disturbance. A second survey would occur immediately before			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT90 ARM6 (cont'd)			surface disturbance unless the BLM and the FWS, and the CSLC and the CDFG in California, concur that a second survey is not required. During the inactive season, one survey would occur within 72 hours of surface disturbance. The jurisdictional Federal land manager would determine which areas are suitable desert tortoise habitat on public land. • All desert tortoise burrows or pallets in the construction zone that cannot be avoided would be excavated by an authorized biologist or blocked. All desert tortoise burrows and pallets that fall outside of the right-of-way but within 50 feet of the construction work area, would be flagged for avoidance. All handling of desert tortoises and their eggs and excavation of burrows would be conducted by an authorized biologist in accordance with recommended protocol (Desert Tortoise Council, 1999). • Desert tortoises that are found aboveground and need to be moved from harm's way would be placed in the shade of a shrub in adjacent undisturbed habitat a minimum of 300 feet from the right-of-way where access is available. Where access is restricted, tortoises would be placed under a shrub as far from the right-of-way as possible. All desert tortoises removed from burrows would be placed in an unoccupied burrow of approximately the same size as the one from which it was removed. • Desert tortoises would only be moved by an authorized biologist and solely for the purpose of moving the tortoises out of harm's way. Tortoises excavated from unavoidable burrows along the route would be relocated to unoccupied natural or artificially constructed burrows immediately following excavation. The artificial or natural burrow would be located 150 to 300 feet from the original burrow and would be similar in size, shape, and orientation to the original burrow. Relocated tortoises would not be placed in existing occupied			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT90 ARM6 (cont'd)			burrows. Procedures for handling tortoises would follow those described in *Guidelines for Handling Desert Tortoises During Construction Projects* (Desert Tortoise Council, 1999). • Desert tortoises moved during inactive periods would be monitored for at least 2 days after their placement in the new burrows to ensure their safety. The authorized biologist would be allowed some judgment and discretion to ensure that survival of the desert tortoise is likely. • The Dry Lake Compressor Station, and any proposed modifications at the Goodsprings Compressor Station, would include a tortoise-proof fence around the facility. Before grading activities, the site would be fenced and surveyed for the presence of desert tortoise. No construction activities would begin until two consecutive surveys yield no individuals. • Whenever a vehicle or construction equipment is parked in desert tortoise habitat longer than 2 minutes, the ground around and under the vehicle or equipment would be inspected for desert tortoises before the vehicle or equipment is moved. If a desert tortoise is observed, it would be left to move on its own. If this does not occur within 15 minutes, an authorized biologist would remove and relocate the tortoise. • Within desert tortoise habitat, any construction pipe, culverts, or similar structures with a diameter of greater than 3 inches stored less than 8 inches above the ground on the construction site for one or more nights would be inspected for tortoises before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored on the construction site. • Open trenches and other open excavations would be fenced with temporary tortoise-proof fencing, covered at the close of each working day, or provided with tortoise escape ramps. All excavations in tortoise habitat would be inspected periodically throughout and at the end of each work			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT90 ARM6 (cont'd)			day and immediately before backfilling. Temporary tortoise-proof fencing would consist of silt fence buried at least 6 inches and supported by wooden stakes. If active construction in desert tortoise habitat would continue after January 31, KRGT would coordinate with the FWS, the BLM, and the CDFG (in California) to identify site-specific locations where KRGT would install temporary tortoise-proof fence or cover open trenches at the end of each work day. The results of these consultations would be filed with the FERC and the CSLC before construction in desert tortoise habitat may continue after January 31. KRGT would apply water to the construction right-of-way for dust control and to the topsoil piles as necessary to prevent the loss of topsoil due to wind erosion. KRGT may be able to reduce the applications of water to the construction right-of-way by adding a non-toxic, organic tackifier to the dust control water in desert tortoise habitat during the tortoise active season (generally March 1 to October 31). KRGT does propose to apply tackifier to segregated topsoil piles in areas designated as highly susceptible to wind erosion. An authorized biologist would be assigned to patrol each area being watered. The biological monitor would patrol the area immediately after the water is applied and at approximate 60-minute intervals until the ground is no longer wet enough to attract tortoises. To supplement its Desert Tortoise Assessment, KRGT prepared a Maintenance Addendum that discusses conservation measures that would be implemented during various potential maintenance activities (see appendix S). The conservation measures to be applied during maintenance are generally consistent with those to be implemented during construction and would minimize impacts on desert tortoises during maintenance activities or provide a mechanism to mitigate for unavoidable impacts.			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT90 ARM6 (cont'd)			KRGT has agreed to fit all pipeline marker signs within desert tortoise habitat with "bird-be-gone" or similar bird repellent devices to minimize the potential for increased predation from aerial predators during operation of the proposed pipeline. Through consultation with the FWS, KRGT agreed to implement the conservation measures for critical habitat for construction through the translocation site, even though the area is not critical habitat.			
KRGT91	The FWS recommended avoiding construction in the Muddy River from April 1 through July 31 to avoid the spawning period for the Virgin River chub. Further, the FWS recommended that KRGT complete the Muddy River crossing using a dry crossing method (*i.e.*, flume or dam and pump) (section 4.7.2).	Significant (CEQA Class II)	KRGT proposes to complete the crossing of the Muddy River using the flume method before April 1. Although sediment could be released into the waterbody during installation and removal of the in-stream barriers associated with the flume method, the resulting temporary changes in water quality and foraging ability would not likely affect the chub.	Less than significant (CEQA Class III)	Nevada	FERC monitors would verify mitigation is followed.
KRGT92 ARM7	Potential habitat was identified along the Opal, Muddy Creek, Coyote Creek 1, Salt Lake, Elberta, and Fillmore Loops. If Ute ladies'-tresses are found during the follow-up surveys, the FWS recommended that KRGT bore under the population or adjust the route (section 4.7.2).	Significant (CEQA Class II)	KRGT agreed to conduct follow-up surveys for Ute ladies'-tresses at the five areas of moderate quality habitat (MPs 0.63, 0.83, 1.33, 27.3, and 34.9). If a population of Ute ladies'-tresses is identified at MPs 0.63, 0.83, 1.33, 27.3, or 34.9, KRGT would bore the area or adjust its route to avoid impacting this species, unless otherwise permitted by the FWS. Such route modifications would be filed with the FERC for the review and written approval of the Director of OEP before construction.	Less than significant (CEQA Class III)	Wyoming	FERC monitors would verify mitigation is followed.
KRGT93	Nine raptors could potentially occur in the vicinity of the proposed pipeline route (ferruginous hawk, northern goshawk, peregrine falcon,	Significant (CEQA Class II)	KRGT proposes to complete aerial surveys during the breeding season in the spring of 2002 to determine if active raptor nests are present near or within the proposed construction right-of-way along the Opal, Muddy Creek, Coyote Creek 1 and 2, Salt Lake, Elberta, and Fillmore Loops. The surveys would cover 1 mile on either side of	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT93 (cont'd)	Swainson's hawk, American kestrel, golden eagle, northern harrier, prairie falcon, and red-tailed hawk). Construction near nests along the corridor during brood rearing could result in nest abandonment; overheating, chilling, or desiccation of unattended young causing nestling mortality; premature fledging; and ejection of eggs or young from the nest (section 4.7.3).		the outside edge of the construction work area. If active nests are identified during aerial surveys, KRGT would follow the FWS' established guidelines (*Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances*) to protect raptors from human disturbances, unless site-specific treatment of a nest is approved by the local FWS Field Office, the BLM, and the UDWR (for nests in Utah) that takes into account the status of the nest, the proposed construction schedule, and the location of the nest. KRGT proposes to continue coordinating with the state and Federal agencies to develop the appropriate survey dates based on the 2001/2002 winter conditions. To ensure nesting raptors are not disturbed during construction along the Mojave Desert portion of the project, KRGT would conduct preconstruction surveys for raptors in the Mojave Desert in accordance with methods and timing recommendations obtained through consultation with the FWS, the BLM, and applicable state agencies. If nesting raptors are identified during these surveys, KRGT would follow the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances*, unless other site-specific conservation measures are approved by the applicable agencies.			
KRGT94	Installation of powerlines and poles to supply power to the Coyote Creek and Dry Lake Compressor Stations could result in raptor electrocution or collisions with powerline structures (section 4.7.3).	Significant (CEQA Class II)	To avoid raptor collisions and electrocution due to KRGT's associated powerline facilities, KRGT would provide written instructions to the utility companies constructing the powerlines requiring that the powerlines comply with applicable raptor protection guidelines, including *Suggested Practices for Raptor Protection on Power Lines: the State of the Art in 1996*.	Less than significant (CEQA Class III)	Wyoming Nevada	FERC and BLM monitors would verify mitigation is followed.
KRGT95	The project could affect riparian migratory birds including the Arizona Bell's vireo, blue grosbeak, gray flycatcher, Lucy's warbler, phainopepla, summer	Significant (CEQA Class II)	To address this concern, KRGT proposes to locate the pipeline in the Meadow Valley Wash area in a previously disturbed area between the existing KRGT right-of-way and an existing powerline. To minimize potential impacts on nesting birds, KRGT has	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT95 (cont'd)	tanager, and Vermilion flycatcher. Construction activities near an active nest could result in nest abandonment, reduced care of young causing mortality, or ejection of eggs or young from a nest. Additionally, construction near suitable habitat may preclude birds from selecting a nest site or may cause birds to select nest sites in less suitable habitat, potentially reducing nest success (section 4.7.3).		agreed to the FWS' recommendation that construction be completed in areas with defined riparian vegetation before May 1. KRGT proposes to have the majority of construction completed in these areas before March 1. However, access through these areas, as well as some restoration activities, may still be necessary past March 1. These activities would be less disruptive than trenching, lowering-in, and backfilling and would not be expected to preclude nesting in the riparian habitat adjacent to the right-of-way.			
KRGT96 ARM8	Construction of the pipeline project would involve clearing of suitable habitat for the Bendire's thrasher and LeConte's thrasher and could result in destruction of nests and, if nests are occupied, direct mortality of individuals (section 4.7.3).	Significant (CEQA Class II)	KRGT would conduct preconstruction surveys for nesting Bendire's thrashers in areas of suitable habitat that would be disturbed by construction activities. If any active Bendire's thrasher nests are found, KRGT would adhere to the CDFG-recommended 1,000-foot buffer unless otherwise permitted by the CDFG. Additionally, KRGT's implementation of mitigation for desert tortoise impacts could indirectly benefit the Bendire's and LeConte's thrashers through the reestablishment and long-term protection of desert habitats (see KRGT90/ARM6).	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT97	Construction of the project would involve clearing of suitable habitat for the Brewer's sparrow, sage sparrow, and sage thrasher and could result in destruction of nests and, if nests are occupied, direct mortality of individuals (section 4.7.3).	Less than significant (CEQA Class II)	No species-specific mitigation proposed (see KRGT83).	Less than significant (CEQA Class III)	Wyoming Utah	No monitoring required.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT98	The potential impacts of the project on burrowing owls include disturbance of habitat and destruction of active burrows. Destruction of burrows could result in displacement of owls into less suitable habitats, potentially increasing susceptibility to predation, reducing cover or forage habitat, or reducing reproductive success. Direct mortality could result if active burrows are occupied at the time of destruction (section 4.7.3).	Significant (CEQA Class II)	The FWS and UDWR recommended that KRGT resurvey the areas with nesting owls in June or July to determine nesting status and then again immediately before the start of construction in those areas. If nests with unfledged young are identified during the surveys conducted immediately before construction, the FWS and the UDWR would work with KRGT to relocate any active nests. In accordance with agency recommendations in Nevada and California, preconstruction burrowing owl surveys would be conducted concurrently with desert tortoise surveys. In areas where tortoise surveys would not occur until after February 2003, burrowing owl surveys would be conducted separate from and before the desert tortoise surveys. To minimize the potential for impacts on owls, KRGT would relocate burrowing owls from their burrows during preconstruction surveys. Burrowing owls would be relocated to artificial burrows constructed by KRGT or to naturally occurring, abandoned desert tortoise burrows. KRGT would crush all burrows on the right-of-way following relocations, unless owl surveys are separate from tortoise surveys, in which case active desert tortoise burrows would be treated during tortoise surveys.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT99	The potential impacts of construction on sage grouse include the loss of suitable habitat, possible disruption of breeding activities or brood rearing, and direct mortality. Construction and operation of the Coyote Creek Compressor Station would result in the permanent conversion of about 30.9 acres of suitable habitat to industrial and grassland cover. Additionally, although the proposed project would not result in a permanent loss of habitat	Significant (CEQA Class II)	Surveys were completed following agency-recommended protocols at historic lek locations within 2 miles of the proposed right-of-way in Wyoming, and between MPs 63 and 65, MPs 89 and 96, MPs 203 and 210, and MPs 285 and 348 in Utah. Surveys of some of the historic lek sites in Wyoming were not completed due to heavy snow conditions. KRGT proposes to complete surveys of these sites following snow melt. During the spring 2002 surveys, grouse activity was identified at five historic leks in Wyoming and at one lek in Utah. As recommended by the UDWR and the BLM, KRGT proposes to conduct brood surveys in June or July 2002 that would focus primarily on the areas of historic leks or other areas specified by the agencies. KRGT also proposes to conduct surveys immediately before construction through areas with high potential to contain sage grouse as identified by the UDWR. These areas include MPs 63 to 65, MPs 89 to 96, MPs 203 to 210, MPs 286 to 324, and MPs 332 to 348.	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT99 (cont'd)	along the pipeline right-of-way, based on the condition of the existing right-of-way, the regeneration of sagebrush would be slow and could take up to several decades (section 4.7.3).		Potential impacts on sage grouse habitat would be minimized by collocating the proposed right-of-way with the right-of-way disturbed during construction of the existing KRGT pipeline. Additionally, critical breeding and brood rearing stages of sage grouse would be avoided by an August 1 construction start date. KRGT would recontour and reseed disturbed areas immediately following construction in accordance with its site-specific Reclamation Plans (see KRGT50 to 55). KRGT also proposes to make a contribution to either the BLM or the UDWR for assistance with sage grouse protection.			
KRGT100	Construction of the project could affect the desert kangaroo rat and Merriam's kangaroo rat either by disturbing their habitat or by direct mortality of individuals (*e.g.*, the crushing of occupied burrows) (section 4.7.3).	Significant (CEQA Class II)	Because the range of this species generally overlaps with that of the desert tortoise, KRGT's implementation of conservation measures for the desert tortoise (see KRGT90/ARM6) would also reduce potential impacts on these species to less than significant levels.	Less than significant (CEQA Class III)	Utah Nevada California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT101	Nelson's bighorn sheep could be indirectly affected if construction activities temporarily block the migration corridor and expose the bighorn sheep to periods of heavy snowfall at higher elevations, thereby increasing their susceptibility to predation, starvation, and freezing. Construction could also restrict access to a water source or limit travel corridors (section 4.7.3).	Significant (CEQA Class II)	KRGT proposes to install trench plugs at a maximum of 1-mile intervals and at well-defined wildlife and livestock trails along the route. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench. Additionally, construction in the area of the bighorn sheep's migration route would occur only during daylight hours. During construction, KRGT may request authorization to remove or to not install trench plugs in site-specific locations if it is determined that the measures would not provide additional environmental protection.	Less than significant (CEQA Class III)	Nevada California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT102	Suitable habitat for the pygmy rabbit is present along much of the	Significant (CEQA Class II)	KRGT would include pygmy rabbits as a target species during 2002 preconstruction surveys, as approved by the WGFD. Where the proposed right-of-way traverses high	Less than significant (CEQA Class III)	Wyoming	FERC and BLM monitors would verify mitigation is

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT102 (cont'd)	proposed pipeline route in Wyoming (section 4.7.3).		quality rabbit habitat, KRGT would conduct surveys for rabbits within 0.25 mile of the pipeline route. KRGT's primary conservation measure to minimize impacts on pygmy rabbits would be to avoid the rabbit's breeding season, which starts in February and ends in May. With construction currently planned to start after August 1 in areas potentially containing pygmy rabbits, adults and young would be able and expected to vacate the right-of-way ahead of construction. Following construction, KRGT would restore the right-of-way with sagebrush, native grasses, and forbs, as requested by the WGFD.			followed.
KRGT103	Suitable habitat for the Wyoming ground squirrel is present along the Opal, Muddy Creek, and Coyote Creek 1 Loops (section 4.7.3).	Significant (CEQA Class II)	KRGT would include the Wyoming ground squirrel as a target species during 2002 preconstruction surveys. Following construction, KRGT would revegetate the right-of-way using seed mixes containing native and adapted forbs and grasses beneficial to the Wyoming ground squirrel and other species of concern that inhabit similar vegetative community types. Once reestablished following construction, the right-of-way corridor may provide higher quality habitat than is currently present.	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.
KRGT104	Ringtails could be indirectly affected by disturbance of foraging or denning areas (rocky areas, canyons, and hollowed trees) (section 4.7.3).	Less than significant (CEQA Class III)	No species-specific mitigation proposed (see KRGT83).	Less than significant (CEQA Class III)	Utah	No monitoring required.
KRGT105	Impacts on the desert iguana, desert night lizard, and sidewinder could include direct mortality due to crushing by construction equipment, reduction of suitable habitat, and temporary disturbance and displacement (section 4.7.3).	Less than significant (CEQA Class III)	No species-specific mitigation proposed (see KRGT83).	Less than significant (CEQA Class III)	Utah Nevada California	No monitoring required.
KRGT106	Construction of the proposed project could result in temporary	Significant (CEQA Class II)	To minimize impacts on Gila monsters, KRGT would: • relocate individuals identified along the right-of-way	Less than significant (CEQA Class III)	Nevada California	FERC, CSLC, and BLM monitors would verify

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT106 (cont'd)	displacement or direct mortality of individual Gila monsters, and temporary alteration of habitat (section 4.7.3).		using measures set forth by the Nevada Division of Wildlife (NDOW), which include the use of long-handled instruments to coax an individual into an open bucket or box; • submit a report to the FWS, the BLM, and the NDOW following construction detailing the locations where Gila monsters were found and released; • report all sightings of Gila monsters in California to the CDFG; and • incorporate the following specific provisions into its construction environmental awareness program; a. procedures to identify Gila monsters and distinguish them from other lizards such as chuckwallas and banded geckos; b. a requirement for reporting observations of Gila monsters to the NDOW and a requirement that observations in California should also be reported to the CDFG; c. consequences of a bite resulting from carelessness or unnecessary harassment of Gila monsters; and d. protective measures for Gila monsters provided under Nevada state law.			mitigation is followed.
KRGT107	Impacts on Mojave fringe-toed lizards could include direct mortality, increased susceptibility to predation during displacement to adjacent habitats, and temporary loss of habitat (section 4.7.3).	Significant (CEQA Class II)	KRGT proposes to implement the following species-specific conservation measures: • resurvey areas of suitable habitat before construction in the summer of 2002 to confirm the extent of the Mojave fringe-toed lizard in the vicinity of the project; • in areas where lizards are observed during preconstruction surveys, in consultation with the CDFG, evaluate the potential to install fencing along the right-of-way to prevent lizards from entering the construction area; and • have a qualified biologist inspect the right-of-way immediately before the onset of trenching or other surface-disturbing activities in areas of suitable Mojave fringe-toed lizard habitat.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT108	Construction through the waterbodies potentially occupied by the bluehead sucker, flannelmouth sucker, leatherside chub, mountain sucker, and roundtail chub would increase sedimentation and turbidity. Increased sedimentation and turbidity within the waterbodies could reduce available habitat or stress individuals such that they are more susceptible to predation or disease, or temporarily cause downstream areas to be unsuitable for spawning. Actual construction impacts, however, would be temporary and not likely to result in the direct mortality of fish (section 4.7.3).	Significant (CEQA Class II)	KRGT proposes to cross the Bear River using the HDD method, which would reduce the potential for impact on the bluehead sucker and the leatherside chub to less than significant levels. If the HDD of the Bear River fails and conventional crossing techniques are required, KRGT would implement its WWCM Procedures to minimize impacts on the waterbody (see KRGT32). KRGT would also develop additional conservation measures (*e.g.*, construction methods, timing restrictions) in consultation with the WGFD to reduce the potential for impacts on the bluehead sucker and the leatherside chub to less than significant levels. KRGT would adhere to its WWCM Procedures for other waterbody crossings, which would minimize the potential for long-term or permanent impacts (see KRGT32).	Less than significant (CEQA Class III)	Wyoming	FERC and BLM monitors would verify mitigation is followed.
KRGT109	The Bonneville cutthroat trout is known to occur in the Bear River (MP 47.5) and Yellow Creek (MP 59.6) in Wyoming; and Chalk Creek (66.8), East Fork Chalk Creek (MP 69.6), an unnamed creek (MP 71.1), South Fork Chalk Creek (MP 81.1), and the Weber River (MP 87.6) in Utah (section 4.7.3).	Significant (CEQA Class II)	KRGT proposes to use the HDD construction method to cross the Bear and Weber Rivers. KRGT developed a contingency plan to minimize the impact of an inadvertent release of drilling mud (see KRGT40). KRGT proposes to use dry crossing construction methods to complete the crossings of Chalk Creek and its tributaries (East Fork Chalk Creek, an unnamed creek, and South Fork Chalk Creek) and, based on the time frame necessary to complete the permitting process for the project, could not begin construction until after August 1. KRGT has agreed to offset potential impacts on the Bonneville cutthroat trout through a monetary contribution to the Summit Soil Conservation District to aid in restoration activities in the Chalk Creek watershed. Implementation of KRGT's WWCM Procedures during and	Less than significant (CEQA Class III)	Wyoming Utah	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT109 (cont'd)			following construction would return waterbodies to near preconstruction contours and is expected to allow the waterbodies to function naturally (see KRGT32). Riprap would be limited to areas where flow conditions preclude effective vegetative stabilization techniques such as seed erosion control fabric. KRGT would use geotextile fabric on inner bends of the waterbodies and only use riprap on the outer bends if flow conditions dictate.			
KRGT110	The Virgin spinedace is restricted to the Virgin River drainage basin, which includes three waterbodies that would be crossed by the pipeline: Magotsu Creek (MP 400.3), Moody Wash (MP 403.3), and Beaver Dam Wash (MP 431.0). Of these, the proposed crossing location at Beaver Dam Wash is devoid of riparian vegetation and generally dry, and therefore is not likely to support this species. The proposed crossing locations of Moody Wash and Magotsu Creek flow more regularly and may provide suitable habitat (section 4.7.3).	Significant (CEQA Class II)	KRGT proposes to cross Magotsu Creek and Moody Wash using the flume method, if water is present. If water is not present when the normal construction spread progresses to that location, KRGT proposes to complete the crossings using the open-cut method. Additionally, if water is present in Moody Wash during construction, at the request of the UDWR, KRGT would place nets upstream and downstream of the crossing location to prevent fish from entering the construction area. Based on the current proposed construction state date of August 1, construction through these waterbodies would occur outside the FWS and FS-recommended timing restriction of March 1 through July 1. In accordance with its WWCM Procedures (see KRGT32), KRGT would restore the bed and banks of waterbodies to preconstruction contours or a more stable configuration after construction. Additionally, KRGT has agreed to implement specific mitigation measures recommended by the FS for Moody Wash, including the replacement of boulders and using locally collected willow cuttings during restoration efforts.	Less than significant (CEQA Class III)	Utah	FERC and FS monitors would verify mitigation is followed.
KRGT111	During botanical field surveys, 1 three-cornered milkvetch plant was identified near MP 495.0, 45 populations of yellow two-tone beardtongue were identified between MPs 550.7 and 564.6, and 9 populations of rosy two-	Significant (CEQA Class II)	KRGT proposes to avoid and protect plants located adjacent to the construction right-of-way by installing exclusion fencing. KRGT proposes to conduct new surveys in the spring of 2002 to determine if other three-cornered milkvetch or two-tone beardtongue plants are present in the general area and to assess the extend of potential hybridization along the right-of-way. To facilitate recolonization of disturbed	Less than significant (CEQA Class III)	Nevada California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT111 (cont'd)	tone beardtongue were identified between MPs 502.4 and 506.9. Two-tone beardtongue plants were also identified along six access roads and three-cornered milkvetch plants were identified along two access roads (section 4.7.3).		areas by these plants, KRGT would: • collect ripe seed from existing plant populations and, following site preparation, spread collected seeds over the same approximate area that contained the species before disturbance. As recommended by the FWS, KRGT would not collect ripe seed from two-tone beardtongue or reseed with two-tone beardtongue between MPs 554.7 and 557.2; • attempt to redistribute seeds beyond the active access road edges, if known populations are restricted to access roads; and • monitor topsoil segregation in areas containing sensitive species to ensure adequate topsoil is segregated and would replace the topsoil to ensure the seed bank is returned to the affected area. KRGT would monitor revegetation efforts annually for 6 years. If, at the end of the 6-year monitoring period plant abundance is not similar, the CDFG recommended, and KRGT has agreed, that KRGT provide monetary compensation to the CDFG, potentially through the acquisition of additional lands for the CDFG. The amount and type of compensation in California would be determined in consultation with the CDFG and pursuant to the Incidental Take Permit under Section 2081 and/or pursuant to the Streambed Alteration Agreement (SAA) under Section 1600, respectively, of the California Fish and Game Code. Enhancement and management (endowment) fees would be applied to all mitigation lands in California.			
KRGT112	Field surveys for the desert cymopterus, Barstow woolly-sunflower, and Mojave monkeyflower were conducted on the Daggett Loop during June 2001 and along access roads and in proposed off right-of-way yards in September and	Significant (CEQA Class II)	To determine the potential for the project to affect these species, KRGT would conduct surveys along the Daggett Loop and associated facilities during the spring of 2002. The CDFG does not expect reseeding of the right-of-way to result in successful recolonization by these species. Therefore, if any of the three species are found, per a recommendation by the CDFG, KRGT would evaluate areas being considered for acquisition as desert tortoise mitigation for suitable habitat for desert cymopterus,	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT112 (cont'd)	October 2001. Although the Daggett Loop access road and off right-of-way yard surveys were conducted too late to observe the actual plants, habitat was identified along the loop and associated facilities for all of these species (section 4.7.3).		Barstow woolly-sunflower, or Mojave monkeyflower. KRGT would then prioritize and incorporate lands containing suitable habitat for both the desert tortoise and the affected plant species into the overall desert tortoise habitat acquisition strategy for the project. The amount and type of compensation in California would be determined in consultation with the CDFG and pursuant to the Incidental Take Permit under Section 2081 and/or pursuant to the SAA under Section 1600, respectively, of the California Fish and Game Code. Enhancement and management (endowment) fees would be applied to all mitigation lands in California.			
KRGT113	Spring 2001 botanical surveys identified a single population of Parish's phacelia, estimated to contain more than 5,000 individual plants, in a dry lakebed adjacent to the right-of-way near MP 665.5 along the Goodsprings Loop (section 4.7.3).	Significant (CEQA Class II)	KRGT would protect this large population from indirect impacts by placing exclusion fencing along the right-of-way near the existing population. If individuals are identified within the right-of-way during preconstruction surveys, KRGT would collect ripe seed from individuals occurring within the proposed construction right-of-way before construction and distribute the collected seeds after construction over the approximate area where the plants were located before disturbance.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT114	The Rusby's desert mallow can be found in desert scrub in the Clark Mountains near the proposed pipeline route. Spring 2001 botanical surveys identified Rusby's desert mallow growing at two areas along the pipeline right-of-way and along two access roads (section 4.7.3).	Significant (CEQA Class II)	KRGT would avoid and protect plants located adjacent to the construction right-of-way by installing exclusion fencing. Many of the plants, however, are located within the proposed construction right-of-way. These plants would be crushed and, where grading is required, uprooted. KRGT would conduct preconstruction surveys to determine the extent of the population near MP 585.0 and along the access roads with known populations, and would collect ripe seeds from existing populations. To minimize impacts on Rusby's desert mallow, KRGT would: • monitor topsoil segregation in areas containing sensitive species to ensure adequate topsoil is segregated and would replace the topsoil to ensure the seed bank is returned to the affected area; • after construction and site preparation, and	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT114 (cont'd)			following CDFG recommendations, distribute the collected seeds over the approximate area where the plants were located before disturbance; and • if known populations are restricted to access roads, attempt to redistribute seeds beyond the active access road edges.			
KRGT115	The swift fox may be found in conjunction with the white-tailed prairie dog colonies located along the Muddy Creek Loop. Impacts on the swift fox from construction would be limited to the conversion of shrub habitats to open areas (section 4.7.4).	Less than significant (CEQA Class III)	No species-specific mitigation proposed (see KRGT83).	Less than significant (CEQA Class III)	Wyoming	No monitoring required.
KRGT116	If occupied Mohave ground squirrel burrows are crushed during construction, mortality of individuals could result. Loss of burrows could also increase ground squirrel susceptibility to predation (section 4.7.4).	Significant (CEQA Class II)	KRGT would: • implement the recommendation of the CDFG to mitigate for impacts on the Mohave ground squirrel as part of its desert tortoise mitigation by providing additional compensation to the CDFG through a third party for each acre of desert tortoise habitat affected within the area defined as Mohave ground squirrel range (about 667 acres) to cover additional ground squirrel research and study; and • notify the CDFG if a dead Mohave ground squirrel is encountered during preconstruction botanical and desert tortoise surveys or during construction.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT117	Construction would likely crush Mormon needle grass occurring within the construction right-of-way (section 4.7.4).	Significant (CEQA Class II)	KRGT would conduct surveys during the spring of 2002 in the area where plants were observed during 2001 field surveys and in areas of suitable habitat identified during fall 2001 access road and off right-of-way yard surveys. To minimize potential impacts on Mormon needle grass, in addition to marking the locations of populations or plants, KRGT's 2002 survey teams would: • collect ripe seeds from individual Mormon needle grass plants to reseed the right-of-way following construction;	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT117 (cont'd)			• install fencing along the right-of-way to avoid and protect Mormon needle grass individuals located adjacent to, but off of, the construction right-of-way; • monitor topsoil segregation in areas containing sensitive species to ensure adequate topsoil is segregated and replace the topsoil to ensure the seed bank is returned to the affected area; and • place rock mulch on the right-of-way over the areas reseeded with Mormon needle grass.			
KRGT118	Field surveys were conducted on the Daggett Loop during June 2001 and along access roads and in proposed off right-of-way yards in September and October 2001. Although the Daggett Loop access road and off right-of-way yard surveys were conducted too late to observe the actual plants, habitat was identified along the loop and associated facilities for the small-flowered androstephium (section 4.7.4).	Significant (CEQA Class II)	To determine the potential for the project to affect this species, KRGT proposes to conduct new surveys along the Daggett Loop and associated facilities during the spring of 2002. If small-flowered androstephium are found, KRGT would: • install exclusion fencing to protect plants located adjacent to the construction right-of-way; • monitor topsoil segregation in areas containing sensitive species to ensure adequate topsoil is segregated and replace the topsoil to ensure the seed bank is returned to the affected area; and • in accordance with CDFG recommendations, collect ripe seeds from existing populations and, following construction, distribute those seeds over the approximate area where the plants were located before disturbance.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT119	Construction would directly impact scaly cloak fern by crushing and, where grading is necessary, uprooting individual plants located within the construction right-of-way. Construction may also result in the permanent loss of habitat. The limestone outcrop that supports the plants would be damaged during construction and it is not	Significant (CEQA Class II)	As approved by the CDFG, KRGT proposes to mitigate for construction impacts on the scaly cloak fern by: • conducting surveys in the spring of 2002 to determine if the scaly cloak fern is present along the two access roads where suitable habitat was identified and to adequately characterize the existing population beyond the right-of-way to aid the CDFG in future management of this species; and • providing funding to the CDFG, or to a fund identified by the CDFG, for native plant research based on the work effort required to adequately research and monitor affected species. The	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT119 (cont'd)	likely that KRGT would be able to recreate the exact preconstruction conditions (section 4.7.4).		amount and type of compensation in California would be determined in consultation with the CDFG and pursuant to the Incidental Take Permit under Section 2081 and/or pursuant to the SAA under Section 1600, respectively, of the California Fish and Game Code. KRGT would provide the CDFG with the agreed upon compensation before construction through scaly cloak fern habitat in the Clark Mountains.			
ARM9	Impact on special status species, compliance with the Endangered Species Act (ESA) and California Endangered Species Act (CESA), and addressing the concerns of the WGFD, the UDWR, and the NDOW regarding special status species (section 4.7.5).	Significant (CEQA Class II)	To ensure that potential impacts on special status species would be avoided or mitigated to less than significant levels, as well as to comply with the ESA and the CESA and address the UDWR concerns regarding special status species, KRGT would not begin construction activities until: • KRGT completes any outstanding species-specific surveys and the FERC receives comments from the FWS regarding the preconstruction survey reports; • the FERC completes formal consultation with the FWS; • KRGT has completed and filed with the FERC the results of consultations with the UDWR regarding measures to avoid or minimize impacts on special status species in Utah; • KRGT has completed and filed with the FERC the results of consultations with the BLM regarding measures to avoid or minimize impacts on special status species on lands managed by the BLM; and • KRGT has received written notification from the Director of OEP that construction or use of conservation measures may begin. In California, KRGT would not begin construction activities until: • KRGT completes any outstanding species-specific surveys in California and the FERC and the CSLC receive comments from the FWS and the CDFG regarding the applicable preconstruction survey reports;	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
ARM9 (cont'd)			• the FERC completes formal consultation with the FWS; • the CDFG makes a consistency determination on the FWS' Biological Opinion pursuant to Section 2080.1 of the California Fish and Game Code or issues an Incidental Take Permit that covers both federally and state-listed species that may be affected; • KRGT obtains an Incidental Take Permit under Section 2081 of the California Fish and Game Code for all state-listed species that may be affected, or receives concurrence from the CDFG that an Incidental Take Permit is not required; • KRGT has completed and filed with the FERC and the CSLC the results of consultations with the BLM regarding measures to avoid or minimize impacts on special status species on lands managed by the BLM in California; and • KRGT has received written notification from the Director of OEP and the CSLC that construction or use of conservation measures may begin in California.			
LAND USE, TRANSPORTATION, RECREATION AND SPECIAL INTEREST AREAS, AND VISUAL RESOURCES						
KRGT120	Land use impacts associated with the project would include disturbance of existing land uses within the construction right-of-way during construction and retention of an expanded or new permanent right-of-way for operation of the pipeline. Of the 10,497.4 acres of land affected by construction of the pipeline facilities, about 2,401.1 acres would be retained as new permanent right-of-way (section 4.8.1.1).	Significant (CEQA Class II)	The land retained as permanent right-of-way would be allowed to revert to former use; however, tree crops such as orchards and aboveground structures would be prohibited on the permanent right-of-way. The remaining 8,096.3 acres used for temporary construction right-of-way and temporary extra workspace would be allowed to revert to prior uses following construction with no restrictions. The right-of-way associated with the proposed pipeline facilities would not result in the conversion of more than 1 percent of agricultural lands to a non-agricultural use or impair the productivity of more than 1 percent of rangeland or agricultural land in a county. The project would also not result in the loss of more than 1 percent of the acreage planted in a county's most valuable crop.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT121	Land used for the aboveground facilities would be permanently converted to a utility use (section 4.8.1.1).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	All	No monitoring required.
KRGT122	Construction of the project could impact grazing allotments by resulting in the loss carrying capacity of an allotment, damaging or removing fences or other natural barriers used for livestock control, and trapping or harming livestock that enter into the construction work area (section 4.8.2).	Significant (CEQA Class II)	KRGT would implement the following mitigation measures: • Each fence crossed would be braced and secured before cutting the opening needed for construction to prevent slacking of the wire. The created opening would be closed by temporary gates as necessary to prevent passage of livestock. • On Federal lands, all damaged livestock fences, gates, cattleguards, and brace panels would be repaired or replaced to BLM or FS standards. • Where construction results in damage or removal of a natural barrier used for livestock control, the barrier would be replaced or a fence would be constructed in its place. • Ramps would be constructed to allow for escape of livestock from the trench at all well-defined livestock trails (as determined by the EI, in conjunction with the agencies' compliance monitor) and at 1-mile intervals. • Trench plugs would be constructed at all well-defined livestock trails (as determined by the EI, in conjunction with the agencies' compliance monitor) and at maximum 1-mile intervals to allow for livestock to cross the open trench. The EI, in conjunction with the agencies' compliance monitor, would reduce trench plug spacing (*i.e.,* add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal movement or escape from the trench. • Temporary fencing would be installed as required to prevent livestock entry into the construction work area.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT123	Of the 44.2 miles of agricultural land crossed by the pipeline, about 11.5	Significant (CEQA Class II)	To minimize the potential for these impacts, KRGT would maintain the flow of irrigation systems or coordinate the temporary shutoff of systems with affected landowners or	Less than significant (CEQA Class III)	Utah Nevada California	FERC, CSLC, and BLM monitors would verify

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT123 (cont'd)	miles are irrigated crop and hay lands. Several activities could damage or interrupt irrigation during construction, including trenching, grading, stringing, welding, and backfilling. If the flow of irrigation water is disrupted for a prolonged period, crops could be damaged and crop yields reduced (section 4.8.3).		tenants. KRGT would compensate the landowner for damages and lost production and include the agreement as a special right-of-way stipulation in the construction contract. Disturbed drainage furrows, water piping, or heads would be restored, repaired, or replaced as soon as possible and monitored for problems after construction is completed. Where pivot irrigation is active, KRGT would complete construction and restoration within a time frame negotiated with the landowner or tenant. As part of restoration of the right-of-way, survey controls would be implemented to restore the surface to more precise elevations. In addition, KRGT would communicate with the landowners or tenants following construction and restoration to ensure the irrigation systems are functioning properly. Additional repair or remedial work would be performed if requested by the landowner. KRGT would also coordinate with the landowner to assess crop productivity for a period of at least 2 years, and provide compensation where crop yields show decline. Impact and mitigation would be site-specific and based on agreements and/or easement conditions with the affected landowner or tenants. Based on negotiations between the landowner and KRGT, mitigation may include additional compensation for portions of fields that may be taken out of production for all or part of the season.			mitigation is followed.
KRGT124	Temporary construction impact in residential areas could include inconvenience caused by noise and dust generated by construction equipment, personnel, and trenching of roads or driveways; ground disturbance of lawns; removal of trees, landscaped shrubs, or other vegetative screening between residences and/or adjacent rights-of-way; potential damage to existing septic systems or	Significant (CEQA Class II)	KRGT has prepared and would follow site-specific residential construction mitigation plans to minimize disruption and to maintain access to the 26 residences located within 50 feet of the construction work area. The plans show the pipeline centerline; the limits of the construction work area; each residence and other structures; existing pipelines and powerlines; waterbodies, roads, driveways, fences, trees or other landscaping, and private wells; and the location of safety fencing that would be installed during construction.	Less than significant (CEQA Class III)	Utah Nevada	FERC monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT124 (cont'd)	wells; and removal of aboveground structures, such as sheds or trailers, from within the right-of-way (section 4.8.4).					
KRGT125	The proposed pipeline route crosses or is adjacent to several linear transportation and utility rights-of-way including highways, roads, railroad tracks, and powerlines. The majority of the pipeline route would be in remote rural areas where existing traffic volumes are low. Major highways such as state routes or interstates would be crossed at 33 locations. Construction across these features could disrupt the existing transportation system (section 4.8.5).	Significant (CEQA Class II)	KRGT would apply for the permits necessary for road and railroad crossings. Major or improved roads and railroads would be crossed by boring to avoid disrupting traffic. Unsurfaced, lightly traveled, or rural roads would be crossed by the open-cut method if approved by the owner or land management agency. Where open-cut road crossings are conducted, KRGT would detour or control traffic during construction to minimize traffic delays at these locations. If reasonable detours are not feasible, at least one lane of traffic would be left open. No new roadways would be created. Most open-cut road crossings would be completed in 1 day. All roadways would be maintained in such a way to allow access for emergency and private vehicles. KRGT would place and maintain flag persons, signs, barricades, guard rails, safety fence, and signals at road crossings as required by city, county, and state regulations and right-of-way and permit stipulations. In the absence of such regulations, KRGT would place danger signs that would be visible in both directions during darkness at the crossing location and also 500 feet in each direction from the crossing. At a minimum, the danger signs would be legible at 100 feet and flashers would run continuously from 30 minutes before sundown until 30 minutes after sunrise.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT126	The existing transportation system within the project area could be temporarily affected by the influx of construction workers and the delivery of construction equipment and materials to the project area (section 4.8.5).	Significant (CEQA Class II)	See KRGT165 and 166.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT127	Operation of the pipeline could disrupt the existing transportation system (section 4.8.5).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	All	No monitoring required.
KRGT128	The Muddy Creek Loop would cross the Oregon National Historic Trail near the intersection of Highways 412 and 189 on land administered by the BLM. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	The proposed pipeline would be installed immediately adjacent to the existing KRGT pipeline at the crossing of the Oregon National Historic Trail. During construction, KRGT would establish detours around the construction work area to minimize impact on recreational use of the trail. After construction, KRGT would restore the trail to its preconstruction condition.	Less than significant (CEQA Class III)	Wyoming	FERC and BLM monitors would verify mitigation is followed.
KRGT129	The Mormon-California National Historic Trail (also known as the Emigrant Trail) would be crossed by the Muddy Creek Loop on land administered by the BLM. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	At the crossing location, the proposed pipeline would be installed immediately adjacent to the existing KRGT pipeline. During construction, KRGT would establish detours around the construction work area to minimize impact on recreational use of the trail. After construction, KRGT would restore the trail to its preconstruction condition.	Less than significant (CEQA Class III)	Wyoming	FERC and BLM monitors would verify mitigation is followed.
KRGT130	The proposed route crosses the boundary of Camp Williams, a National Guard training site, in several locations beginning at about MP 155.5 of the Salt Lake Loop. Military land would be crossed for a total of about 2.4 miles in this area. Construction could impact the purpose for which this special	Significant (CEQA Class II)	KRGT would implement the general mitigation measures identified for the project. Site-specific mitigation measures required by Camp Williams would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.	Less than significant (CEQA Class III)	Utah	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT130 (cont'd)	management area was established (section 4.8.6.1).					
KRGT131	The Wildhorse Canyon Obsidian Quarry, listed on the National Register of Historic Places (NRHP), is crossed by the Fillmore Loop. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	Utah	No monitoring required.
KRGT132	Between MPs 382.5 and 382.9 and MPs 384.6 and 404.1, about 19.9 miles of the Dixie National Forest would be crossed by the proposed Fillmore Loop. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	KRGT would implement its site-specific Reclamation Plan for the Dixie National Forest (see KRGT53). KRGT would gain access to the construction right-of-way within the Dixie National Forest using only existing roads. No new roads would be constructed as part of the Kern River 2003 Expansion Project. Following construction, KRGT would restore the area to its preconstruction condition. To facilitate restoration after pipeline construction, the FS would issue a forest order prohibiting the use of OHVs in the corridor. KRGT would implement additional mitigation measures to discourage OHV use in environmentally sensitive areas of the forest, such as in management area 5A and the Mountain Meadows area (see KRGT153). Additional measures would include placing berms at intersections with existing dirt roads to ensure that the area does not appear to be an access road and randomly placing boulders and trees to discourage OHV use. All roads that are currently closed as prescribed in the Dixie National Forest Land and Resource Management Plan would remain closed. Additional site-specific mitigation measures required by the FS would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.	Less than significant (CEQA Class III)	Utah	FERC and FS monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT133	Within the Dixie National Forest, the proposed pipeline route would intersect the Mountain Meadows Historic Site on the Fillmore Loop. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	See KRGT132. The site is located within the general Mountain Meadows area, which is considered a visually sensitive area (see KRGT158). At the crossing location, the proposed route would be adjacent to the existing KRGT pipeline within the designated Newcastle to Veyo Utility Corridor. KRGT would restore and recontour the construction right-of-way to preconstruction conditions.	Less than significant (CEQA Class III)	Utah	FERC and FS monitors would verify mitigation is followed.
KRGT134	The Beaver Dam Slope Area of Critical Environmental Concern (ACEC) would be crossed between approximately MPs 432.8 and 437.5 and MPs 438.8 and 444.1 of the Veyo Loop. Within the BLM-administered Beaver Dam Slope ACEC, special management attention is given to desert tortoise. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	Mitigation measures for the desert tortoise and its critical habitat are provided in KRGT90/ARM6.	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.
KRGT135	The Mormon Mesa ACEC would be crossed between MPs 444.1 and 444.5 and MPs 446.9 and 455.3 of the Veyo Loop. The Mormon Mesa ACEC is a desert tortoise ACEC managed by the BLM. Construction could impact the purpose for which this special management area was established (section	Significant (CEQA Class II)	Mitigation measures for the desert tortoise and its critical habitat are provided in KRGT90/ARM6.	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT135 (cont'd)	4.8.6.1).					
KRGT136	The Veyo Loop would cross the Moapa River Indian Reservation between MPs 479.2 and 493.8. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	The pipeline route would follow a southwest to northwest path through the reservation adjacent to the existing KRGT pipeline. KRGT would restore all disturbed areas to preconstruction conditions.	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.
KRGT137	The Dry Lake Loop 1 would be adjacent to the eastern boundary of the BLM Fish and Wildlife #3 Wilderness Study Area (WSA) between MPs 504.3 and 509.4. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	Nevada	No monitoring required.
KRGT138	The Dry Lake Loop 1 would be parallel to the boundary of the Coyote Springs ACEC as designated by the BLM between about MPs 507.0 and 509.4. The Coyote Springs ACEC is a 75,500-acre area designated for its critical desert tortoise habitat. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Less than significant (CEQA Class III)	Mitigation measures for the desert tortoise and its critical habitat are provided in KRGT90/ARM6.	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT139	The Dry Lake Loop 1 would cross a total of 3.2 miles of the Nellis AFB in two segments between MPs 509.9 and 512.3 and MPs 514.2 and 515.0. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	KRGT would coordinate directly with AFB personnel before construction to address security and other site-specific issues. During construction, the AFB would temporarily close the small arms shooting range located in the area of the proposed project. All disturbed areas would be restored to preconstruction conditions. Additional site-specific mitigation measures required by Nellis AFB would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.
KRGT140	The Dry Lake Loop 1 would cross a total of 3.1 miles of the Edsall Training Center in two segments between MPs 513.1 and 514.2 and MPs 515.0 and 515.3. Construction could impact the purpose for which this special management area was established. The Nevada National Guard raised concerns about restrictions placed along the pipeline right-of-way and the location of ancillary pipeline facilities in relationship to the training center property (section 4.8.6.1).	Significant (CEQA Class II)	All land used for temporary construction right-of-way and temporary extra workspace would be allowed to revert to prior uses (see KRGT120). Construction of aboveground structures would be prohibited on the permanent right-of-way; however, no restrictions would be placed on the temporary right-of-way or extra workspace. Additional site-specific mitigation measures required by the Edsall Training Center would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.
KRGT141	The Dry Lake Loop 2 would cross the Red Rock HMA between approximately MPs 550.2 and 565.2. Construction could impact the purpose for which this special management area was established (section	Significant (CEQA Class II)	See KRGT72. A large portion of this HMA overlaps with the Red Rock Canyon NCA (see KRGT142).	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT141 (cont'd)	4.8.6.1).					
KRGT142	The Dry Lake Loop 2 would cross the Red Rock Canyon NCA between approximately MPs 552.0 and 557.4. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	The proposed pipeline would be adjacent to the existing KRGT pipeline using a reduced 20-foot offset for the entire crossing of the Red Rock Canyon NCA. The permanent right-of-way for the new pipeline would be placed exactly within the boundary of the permanent right-of-way for the existing KRGT pipeline. KRGT would attempt to minimize disturbance to areas previously disturbed by construction of the existing pipeline. No aboveground facilities associated with the proposed pipeline would be located within the Red Rock Canyon NCA. KRGT would gain access to the construction right-of-way within the Red Rock Canyon NCA using only existing roads. No new roads would be constructed as part of the Kern River 2003 Expansion Project. KRGT would use dust minimization techniques along the construction right-of-way and would remove all litter and debris daily from the construction work site. Following construction, KRGT would return all disturbed areas to their preconstruction condition and implement the mitigation measures identified in the Nevada Reclamation Plan (see KRGT54). KRGT would reseed the proposed right-of-way using native species and would transplant succulents such as cactus, yucca, and Joshua trees to mitigate for visual impacts associated with the project. These measures would be considered successful if 80 percent of the density and diversity of the adjacent undisturbed vegetation is obtained on the right-of-way. Visual qualities of the Red Rock Canyon NCA would be enhanced by the restoration of KRGT's existing right-of-way when the proposed right-of-way is reclaimed. Restoration of KRGT's existing right-of-way would be accomplished to the same standards as the proposed right-of-way. Because the proposed route crosses a non-motorized management emphasis area, KRGT would also implement measures to control unauthorized OHV use (see KRGT153).	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.
KRGT143	Approximately 0.9 mile of the Dry Lake Loop 2 beginning at about MP	Significant (CEQA Class II)	The proposed pipeline would be adjacent to the existing KRGT pipeline for the entire 0.9 mile within the Springs Mountains NRA. The permanent right-of-way for the new	Less than significant (CEQA Class III)	Nevada	FERC and FS monitors would verify mitigation is

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT143 (cont'd)	557.4 would cross the Spring Mountains NRA portion of the Humboldt-Toiyabe National Forest. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).		pipeline would be placed exactly within the boundary of the permanent right-of-way for the existing KRGT pipeline. KRGT would reseed the proposed right-of-way using native species and would transplant succulents such as cactus, yucca, and Joshua trees to mitigate for visual impacts associated with the project. These measures would be considered successful if 80 percent of the density and diversity of the adjacent undisturbed vegetation is obtained on the right-of-way. Visual qualities of the Spring Mountains NRA would be enhanced by the restoration of KRGT's existing right-of-way when the proposed right-of-way is reclaimed. Restoration of KRGT's existing right-of-way would be accomplished to the same standards as the proposed right-of-way. To prevent the spread of noxious weeds in the area, KRGT would clean all equipment prior to entering the Spring Mountains NRA (see KRGT60 and ARM5). During construction, KRGT would use only existing roads to access the construction right-of-way. No new roads would be constructed and no modifications to any existing roads would be required in this area. KRGT153 describes measures KRGT would implement to control unauthorized OHV use. Additional site-specific mitigation measures required by the FS would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.			followed.
KRGT144	The entire 186.0-mile-long portion of the proposed pipeline route in California (part of the Goodsprings Loop and all of the Daggett Loop) is within the California Desert Conservation Area. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	California	No monitoring required.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT145	The Goodsprings Loop would cross the Clark Mountain HMA between MPs 579.4 and 603.7. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	California	No monitoring required.
KRGT146	The Goodsprings Loop would not cross but would be about 1 mile north of the Stateline (between MPs 580.0 and 584.5), Mesquite (between MPs 584.5 and 598.0), and Kingston Range (between MPs 598.0 and 614.0) Wilderness Areas. The Hollow Hills Wilderness Area would be located about 0.25 mile south of the route between MPs 618.0 and 623.6. Due to the close proximity, the areas may be indirectly affected by traffic, noise, and dust during pipeline construction (section 4.8.6.1).	Significant (CEQA Class II)	The delivery of construction equipment and materials would not prevent access to any of these areas (see KRGT166). KRGT would use the existing powerline access road as the primary access to the construction right-of-way in this area. The pipeline would cross several trails/roads during construction adjacent to these wilderness areas. To maintain access to these wilderness areas during construction, KRGT would only allow one trail/road crossing to be closed at any given time. Each trail/road would be open cut and out of service for a maximum of 1 day. KRGT would implement the measures described in KRGT125 to maintain safe passage at each of the trail/road crossings.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT147	The Goodsprings Loop would not cross but would be located near the Mojave National Preserve. Construction could restrict access to this area (section 4.8.6.1).	Significant (CEQA Class II)	During construction, KRGT would close only one road at a time leaving at least three roads open into the Mojave National Preserve at any given time. The main access to the preserve is provided by Kingston Road and other improved or major public roads. KRGT would maintain safe passage at each of these road crossings as described in KRGT125.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT148	The Goodsprings Loop would be located within the BLM-designated Clark	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	California	No monitoring required.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT148 (cont'd)	Mountain ACEC between about MPs 587.5 and 591.7. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).					
KRGT149	The Goodsprings Loop would be adjacent to two statutory WSAs as defined in the California Desert Protection Act of 1994. These are the Soda Mountains WSA and the South Avawatz WSA. Due to the close proximity, the areas may be indirectly affected by traffic, noise, and dust during pipeline construction (section 4.8.6.1).	Significant (CEQA Class II)	The delivery of construction equipment and materials would not prevent access to any of these public interest areas (see KRGT166). KRGT would use the existing powerline access road as the primary access to the construction right-of-way in this area. The pipeline would cross several trails/roads during construction adjacent to these wilderness areas. To maintain access to these WSAs during construction, KRGT would only allow one trail/road crossing to be closed at any given time. Each trail/road would be open cut and out of service for a maximum of 1 day. KRGT would implement the measures described in KRGT125 to maintain safe passage at each of the trail/road crossings.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT150	The Goodsprings Loop would be within the current boundary of the Fort Irwin National Training Center between MPs 642.8 and 643.0 and would be close to or adjacent to the boundary until about MP 653.2. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class III)	KRGT would implement the general mitigation measures identified for the project. Site-specific mitigation measures required by Fort Irwin would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT151	About 3.1 miles of the Marine Corps Firing Range would be crossed by the Daggett Loop between	Significant (CEQA Class II)	As construction approaches the Marine Corps Firing Range, KRGT would coordinate with the Military Police, Ranger Officer, and the Environmental Division concerning security, access, live fire range safety, and special status	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT151 (cont'd)	MPs 3.7 and 6.8. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).		species protections. Additional site-specific mitigation measures required by the Marine Corps would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant issued by the BLM.			followed.
KRGT152	The Daggett Loop would be within the boundaries of Edwards AFB in two locations (between MPs 41.0 and 42.5 and MPs 51.2 and 51.4) and would be north of the AFB boundary between MPs 42.5 and 67.8. Construction could impact the purpose for which this special management area was established (section 4.8.6.1).	Significant (CEQA Class II)	During the scoping process, Edwards AFB identified several items that KRGT would need to implement both before and during construction within the AFB. KRGT would need to: • arrange a preconstruction conference at least 30 days prior to the start of construction on Edwards AFB lands; • coordinate with base personnel before beginning any activities within the base; • register all personnel and vehicles operating in conjunction with the project with base security before entering base lands; • coordinate ingress and egress routes to the construction site with base security; and • before excavation, clear all areas where the possibility of encountering ordnance associated with past test and training activities exists using qualified ordnance disposal personnel and in consultation with Edwards AFB personnel. Additional site-specific mitigation measures required by Edwards AFB would be included as stipulations of the COM Plan, which would be attached to the right-of-way grant.	Less than significant (CEQA Class III)	California	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT153	The pipeline could increase accessibility for OHV use into previously restricted, inaccessible, or environmentally sensitive areas (section 4.8.6.1).	Significant (CEQA Class II)	The measures KRGT has used in the planning and design of the project or would use to control unauthorized or undesired OHV use include: • siting the new pipeline loops typically overlapping the existing KRGT or KRGT/Mojave Common System rights-of-way as opposed to creating entirely new rights-of-way that could introduce more third-party OHV use;	Less than significant (CEQA Class III)	All	FERC, CSLC, BLM, and FS monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT153 (cont'd)			• using existing access roads to the right-of-way during construction and operation rather than constructing new roads. KRGT would maintain existing access controls such as replacement of gates and earthen berms where specified; • restoring the construction and permanent right-of-way to or near the original contours, including restoring streams and washes, removing temporary equipment bridges, installing slope breakers for erosion control, and revegetation; and • installing other OHV controls (*e.g.,* signs, fences, berms, breaches, boulders, shrubs trees) where designated by a land management agency to further meet management objectives for OHV use (see KRGT's UECRM Plan). Additionally, KRGT has identified specific measures that would be implemented in the Dixie National Forest to control OHV use. These measures include placing berms at intersections with existing dirt roads to ensure that the area does not appear to be an access road and randomly placing boulders and trees to discourage OHV use. The FS would issue a forest order prohibiting the use of OHVs along the right-of-way to facilitate restoration after construction (see KRGT132).			
KRGT154	Camping occurs in the Dixie National Forest, Spring Mountains NRA, and Red Rock Canyon NCA. In addition, the Coyote Creek Loop 1 would be near a recreational vehicle park at about MP 87.5. A campground is also located within 0.25 mile of the Elberta Loop in Juab County, Utah. Construction-induced effects such as traffic, noise, and dust may affect	Less than significant (CEQA Class III)	No mitigation proposed. The delivery of construction equipment and materials would not prevent access to these areas (see KRGT166).	Less than significant (CEQA Class III)	Utah Nevada	No monitoring required.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT154 (cont'd)	the quality of some users' recreational experiences (section 4.8.6.2).					
KRGT155	Construction of the pipeline would cause construction-related visual impacts. Visual impacts would be caused by vegetation removal, earthwork and grading scars, staging areas, heavy equipment tracks, trenching, blasting, rock formation alteration or removal, and temporary support machinery and tool storage. The degree of impacts from vegetation clearing would depend on the type of vegetation that would be affected (section 4.8.7).	Significant (CEQA Class II)	The visual impact of the pipeline loops would be primarily temporary or short term because most of the proposed route would be constructed adjacent to the existing KRGT pipeline or KRGT/Mojave Common System pipeline rights-of-way. Where the proposed route is adjacent to existing rights-of-way, project construction would temporarily redefine the existing line and result in an incremental increase of visual impact of the previously disturbed area. To further minimize visual impacts, KRGT would implement general mitigation measures as described below. • The new pipeline loops would typically overlap existing pipeline rights-of-way, thereby minimizing the amount of clearing needed for construction workspace and permanent right-of-way. Parallel placement of the loops with existing rights-of-way would also minimize visual impacts by minimizing vegetation fragmentation. • As few landings and turnouts as possible would be created, and these areas of temporary extra workspace would not be located on the noses of ridges or exposed slopes. • Felled trees would be left as close as possible to the downhill side of the right-of-way. • Grading during restoration would be done in a manner that minimizes erosion and conforms to the natural topography. • Soils and rock that are excavated, but not used to backfill the trench or restore contours, would be evenly spread onto the cleared area in non-agricultural areas. • In areas where blasting is required, native soils and materials would be used to reclaim the construction right-of-way. Any rock introduced into the surface soil that is visually incompatible with the surrounding areas would be buried on the right-of-way or hauled to an approved disposal site. Site-	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT155 (cont'd)			specific measures, as specified by a land management agency, would also be implemented. These measures could include the use of native soils, vegetation, and materials to recreate preconstruction conditions, application of a coloration product such as Permeon™ where natural "desert varnish" has been removed, or rebuilding rim-rock disturbed during construction. • The permanent pipeline right-of-way markers would adhere to the color coding scheme for buried utilities developed by the American Public Works Association. The color coding scheme calls for yellow markers for natural gas, oil, steam, petroleum, or other gaseous material pipelines. KRGT's existing pipeline is identified by yellow markers, and similar markers would be used for the proposed pipeline. In accordance with DOT requirements, KRGT would install pipeline markers wherever necessary to identify the location of the pipeline in order to reduce the possibility of damage.			
KRGT156	The Bear River Valley, crossed by the Muddy Creek Loop between MPs 46.9 and 50.3, is considered an area with high visual sensitivity (section 4.8.7.2).	Significant (CEQA Class II)	The proposed Muddy Creek Loop in this area would be adjacent to the existing KRGT pipeline. Although not a forested landscape, KRGT proposes to use feathering and tapering and enhanced revegetation. Feathering and tapering would involve varying the width of the cleared right-of-way to reduce visual line contrasts of distorted areas in visually prominent foreground views, such as at the crossing of Highway 150 at MP 49.3. KRGT would also use enhanced revegetation on portions of the west-facing slopes of the Bear River Valley. Enhanced revegetation includes revegetating the cleared areas with native plants (*e.g.,* sagebrush) to match the surrounding vegetation. In addition, KRGT's use of the HDD construction method to cross the Bear River at MP 47.5 would minimize impacts on visual resources by eliminating disturbance of the riparian corridor adjacent to the river.	Less than significant (CEQA Class III)	Wyoming	FERC and BLM monitors would verify mitigation is followed.
KRGT157	Scipio Pass, crossed by the Elberta Loop between MPs 244.0 and 248.0, is	Significant (CEQA Class II)	KRGT would minimize visual impacts in this area by feathering and tapering the cleared right-of-way and enhanced revegetation of the cleared right-of-way using	Less than significant (CEQA Class III)	Utah	FERC and BLM monitors would verify mitigation is

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT157 (cont'd)	considered an area with high visual sensitivity (section 4.8.7.2).		local pinyon juniper and other local vegetation types where possible. KRGT would conduct topsoil salvage and respreading to reduce visual contrast and preserve a viable growing medium for effective revegetation. Seeding would also allow for the rapid reduction in the strong contrast from soil color.			followed.
KRGT158	The Mountain Meadows area within the Dixie National Forest between MPs 392.3 and 394.0 of the Fillmore Loop is considered an area with high visual sensitivity (section 4.8.7.2).	Significant (CEQA Class II)	KRGT would leave trees and vegetation on the downhill side of the right-of-way to provide a natural screen from the trail and parking lot in the Mountain Meadows area. KRGT would limit clearing to preserve mature shrubs and trees. In addition, KRGT's mowing or cutting of vegetation at ground level would encourage resprouting of oak brush. After construction, KRGT would regrade the right-of-way to match preconstruction contours and boulders and trees would be randomly placed to discourage OHV use (see KRGT153).	Less than significant (CEQA Class III)	Utah	FERC and FS monitors would verify mitigation is followed.
KRGT159	The Meadow Valley Wash, crossed by the Veyo Loop between MPs 473.0 and 475.0, is considered an area with high visual sensitivity (section 4.8.7.2).	Significant (CEQA Class II)	KRGT would use enhanced revegetation to mitigate the potential visual impact of the Veyo Loop on the Meadow Valley Wash area. The existing mesquite stands in the area would not be disturbed by the proposed pipeline. KRGT would place natural and artificial obstructions (*e.g.*, boulders, earthen berms, cleared vegetation) from about MP 473 to Meadow Valley Wash and where the right-of-way crosses existing roads or trails to reduce the visibility of the right-of-way for unauthorized OHV use. Additional discussion of the revegetation measures in this area is presented in the Nevada Reclamation Plan (see KRGT54).	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.
KRGT160	The Red Rock Canyon NCA, crossed by the Dry Lake Loop 2 between MPs 552.0 and 557.4, is considered an area with high visual sensitivity (section 4.8.7.2).	Significant (CEQA Class II)	The proposed loop would be adjacent to the existing KRGT pipeline using a reduced 20-foot offset. KRGT would keep the disturbance in this area to the absolute minimum required for construction of the pipeline. KRGT would use rock mulch or other methods to blend the color of the disturbed area with its surroundings. KRGT would transplant succulent plant species such as cacti, yucca, Joshua trees, and agave specimens in viewsheds with key observation points. Before construction begins, plant specimens required for visual reclamation that are of the appropriate size would be flagged by KRGT for removal and replanting. KRGT would transplant additional salvaged succulents provided by the BLM on the existing	Less than significant (CEQA Class III)	Nevada	FERC and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT160 (cont'd)			right-of-way. In addition, KRGT would use Permeon™ on the north facing slope at Wilson Tank (around MP 556.6) and on the exposed rock at MPs 557.3 and 558.2, which are visible from a public access road. KRGT would use Permeon™ on both the existing and proposed construction rights-of-way in these areas. In these areas, KRGT would also arrange the boulders and other exposed surface rock along the existing right-of-way in a more non-linear arrangement to reduce the visibility from the public access road.			
KRGT161	Construction and operation of the new aboveground facilities and associated powerlines would have a permanent impact on visual resources (section 4.8.7.3).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	All	No monitoring required.
SOCIOECONOMICS						
KRGT162	Construction of the project could temporarily increase the population along each spread by between 504 and 567 people. About 12 permanent staff would be added to KRGT's existing district offices in Evanston, Wyoming; Fillmore, Utah; and Las Vegas, Nevada (section 4.9.2).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	All	No monitoring required.
KRGT163	Construction of the project could affect the availability of housing in the project area; however, no significant impacts on local housing markets are expected (section 4.9.3).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	All	No monitoring required.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT164	Because the non-local workforce would be small relative to the current population, construction of the pipeline would result in minor, temporary, or no impact on local community facilities and services such as police, fire, medical, and waste disposal services. Other construction-related demands on local agencies could include increased enforcement activities associated with issuing permits for vehicle load and width limits, local police assistance during construction at road crossings to facilitate traffic flow, and emergency medical services to treat injuries resulting from construction accidents (section 4.9.4).	Less than significant (CEQA Class III)	No specific mitigation proposed. KRGT would work with local firefighters and other emergency responders to coordinate activities for effective emergency response.	Less than significant (CEQA Class III)	All	No monitoring required.
KRGT165	Construction activities, such as the influx of construction workers to the project area, could result in traffic congestion and roadside parking hazards (section 4.9.5).	Significant (CEQA Class II)	To minimize these potential effects, KRGT would require that construction workers use contractor yards as the primary parking area for employee's personal vehicles. Workers would be transported from contractor yards to the construction site in buses provided by the contractor. Only company (*i.e.*, contractor and/or KRGT) vehicles would be allowed on the right-of-way.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.
KRGT166	The delivery of construction equipment and materials could also temporarily congest existing transportation networks at specific locations (section 4.9.5).	Significant (CEQA Class II)	To minimize disruption to traffic, KRGT has sited its contractor yards at locations that have existing adequate roadway access to the pipeline construction areas.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT167	To implement KRGT's dust control measures, water trucks would fill up at water storage locations and then travel the right-of-way applying water as necessary to control dust. It is expected that each spread would have roughly 4 water trucks operating and each truck would make approximately 6 round trips per day for a total of 24 round trips along the right-of-way (section 4.9.5).	Less than significant (CEQA Class III)	No mitigation proposed.	Less than significant (CEQA Class III)	All	No monitoring required.
KRGT168	Construction and operation of the proposed pipeline would have a beneficial impact on local tax revenue based on projected tax revenue (section 4.9.7).	Beneficial impact (CEQA Class IV)	No mitigation proposed.	Beneficial impact (CEQA Class IV)	All	No monitoring required.
CULTURAL RESOURCES						
ARM10	Project impacts or effects on cultural resources include not only the physical disturbance of a historic property, but may also include the introduction, removal, or alteration of various visual or auditory elements, which could alter the traditional setting or ambience of the property (section 4.10.6).	Significant (CEQA Class II)	KRGT would defer construction and use of its facilities and any staging, storage, or temporary work areas and new or to-be-improved access roads until: • KRGT prepares and files with the FERC and the CSLC (for the California portion of the project), and submits to the consulting parties, as appropriate, any outstanding cultural resources reports and necessary treatment plans; • KRGT files with the FERC and the CSLC (for the California portion of the project) the comments of the consulting parties on all cultural resources reports and plans submitted for review; • the CSLC reviews and approves all cultural resources reports and plans prepared for the California portion of the project and notifies KRGT	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation, and the mitigation measures specified in the approved treatment plans, are followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
ARM10 (cont'd)			• in writing that construction may proceed; and • the Director of OEP reviews and approves all cultural resources reports and plans and notifies KRGT in writing that construction may proceed.			
AIR QUALITY AND NOISE						
KRGT169	The proposed project would generate air emissions from temporary construction activities. The construction emissions from the project would be above the significance threshold established by the Mojave Desert Air Quality Management District (AQMD) for all emissions except sulfur dioxide (SO_2) and volatile organic compounds (VOC) (section 4.11.1.2).	Significant (CEQA Class II)	To reduce construction emissions, KRGT would implement emission control measures developed in consultation with local AQMDs. These measures include: • properly maintaining and tuning equipment to manufacturers' specification; • transporting workers from contractor yards to the construction site in buses provided by the contractor to reduce vehicle emissions; • limiting the extent of a visible dust plume to less than 100 yards from the source; • limiting opacity of fugitive dust to 20 percent or less; • applying water and/or a non-toxic, organic tackifier as a dust suppressant on non-paved roads and construction work areas, including topsoil piles, to limit excessive airborne particulates as a result of construction activities (see KRGT48 and 90/ARM6); • cleaning equipment traveling from a non-paved road to a paved road; • installing construction entrances to prevent tracking of soil onto paved roads; • cleaning soil tracked onto paved roads more than 50 feet from the point of origin within 1 hour of discovery and cleaning soil tracked onto paved roads less than 50 feet from the point of origin at the end of each work day; • using tarps or other means to enclose material on haul trucks; • limiting blast footprints to a size that can be stabilized after the blast; • requiring the contractor to obtain approval from KRGT before blasting if wind speeds are 25 mph or greater; and • keeping daily records of all dust control measures	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT169 (cont'd)			taken, including: a. the date, time, location, and dust control measures that were taken; b. inspection of all paved/non-paved intersections for trackouts with descriptions of conditions and any required clean-up; and c. weather conditions and wind speed and direction. Before construction, KRGT would obtain a dust control permit from the Clark County Health District and submit a Dust Control Plan to the Mojave Desert AQMD and the UDEQ for approval.			
KRGT170	During operation, the air emissions from the compressor stations would include the following criteria pollutants: particulate matter less than 10 microns in diameter (PM_{10}), SO_2, nitrogen oxides (NO_x), carbon monoxide (CO), and VOC. The primary pollutants resulting from the combustion of natural gas are NO_x and CO. Because all emission units would burn pipeline quality natural gas, the quantity of PM_{10} and SO_2 emissions would be very small (section 4.11.1.3).	Significant (CEQA Class II)	KRGT's installation of low NO_x burners on new turbines would greatly limit the NO_x emissions from the compressor stations.	Less than significant (CEQA Class III)	All	FERC and BLM monitors would verify mitigation is followed.
KRGT171	Noise would be generated during the construction phase of the pipeline project (section 4.11.2.2).	Significant (CEQA Class II)	KRGT would operate construction equipment on an as-needed basis during this period. Nighttime noise is not expected to increase during construction because most construction activities would be limited to daytime hours.	Less than significant (CEQA Class III)	All	FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT172	Noise would be generated during operation of the compressor stations. Primary noise sources during the operation of the compressor stations are the gas turbine air intakes and exhausts and compressor units. Other less significant noise sources include ancillary equipment such as lube oil coolers, gas aftercoolers, and station piping (section 4.11.2.2).	Significant (CEQA Class II)	To ensure that the actual noise resulting from the operation of the Salt Lake and the Daggett Compressor Stations is below a day-night sound level (L_{dn}) of 55 decibels of the A-weighted scale (dBA), KRGT would conduct a noise survey to verify that the noise from the Salt Lake and Daggett Compressor Stations operated at full load does not exceed an L_{dn} of 55 dBA at any noise sensitive areas (NSAs), and file the results of the noise survey with the FERC and the CSLC (for the Daggett Compressor Station) no later than 60 days after placing the compressor stations into service. If the noise attributable to the operation of the compressor stations at full load exceeds an L_{dn} of 55 dBA at any nearby NSAs, KRGT would file a report on what changes are needed and would install additional noise controls to meet that level within 90 days of completing the survey. KRGT would confirm compliance with the L_{dn} of 55 dBA requirement by filing a second noise survey with the FERC and the CSLC (for the Daggett Compressor Station) no later than 60 days after it installs the additional noise controls.	Less than significant (CEQA Class III)	Utah	FERC and CSLC monitors would verify mitigation is followed.
SAFETY AND RELIABILITY						
KRGT173 ARM11	The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas (section 4.12).	Significant (CEQA Class II)	The pipeline and aboveground facilities associated with the Kern River 2003 Expansion Project would be designed, constructed, operated, and maintained in accordance with or to exceed the DOT Minimum Federal Safety Standards in Title 49 CFR Part 192. The spacing for all of KRGT's proposed MLVs meets the DOT's requirements. KRGT would upgrade the pipeline design when an increase in population density adjacent to the right-of-way indicates a change in class location for the pipeline. The pipe would have a coating of 12 millimeters of thickness (mils) fusion bond epoxy coating and 8 mils abrasion resistant coating. In addition, the pipe would be internally coated to reduce friction. Before construction, KRGT would inspect the pipe at the mill where it is manufactured to ensure that it meets specifications and quality standards. During construction, the integrity of coating designed to protect against	Less than significant (CEQA Class III)	All	KRGT certified compliance with the DOT Minimum Federal Safety Standards in its application to the FERC. FERC, CSLC, and BLM monitors would verify mitigation is followed.

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT173 ARM11 (cont'd)			corrosion would be checked and imperfections would be corrected. Welds would be quality checked with x-rays. KRGT would test the pipe with water to a pressure ranging from 125 to 180 percent of the maximum allowable operating pressure. Before placing the pipeline into service, KRGT would perform post-construction geometry pig surveys, which would locate any construction-related dents. KRGT would install a cathodic protection system to prevent or minimize corrosion of the buried pipeline. The cathodic protection system would impress a direct current on the pipe thus providing a ground-bed anode that would corrode instead of the pipeline. KRGT would clearly mark the pipeline facilities at line-of-sight intervals and at crossings of roads, railroads, and other key points. The markers would clearly indicate the presence of the pipeline and provide a telephone number and address where a company representative may be reached in the event of an emergency or before any excavation in the area of the pipeline by a third party. KRGT participates in all communication and notification services to prevent damage to underground utilities (One-Call systems). The pipeline system would be inspected by air to observe right-of-way conditions and identify indications of leaks, evidence of pipeline damage, evidence of encroachment (*i.e.*, landowners building permanent structures on the permanent right-of-way), or damage to erosion controls resulting from erosion or washouts. The proposed pipeline would be operated from Gas Control Centers in Salt Lake City, Utah and Colorado Springs, Colorado. KRGT's compressor station crews would perform operation and maintenance of the new and existing equipment. KRGT would perform routine checks of the			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT173 ARM11 (cont'd)			facilities, including calibration of equipment and instrumentation, inspection of critical components, and scheduled and routine maintenance of equipment. Safety equipment, such as pressure relief devices, fire detection and suppression systems, and gas detection systems, would be periodically tested for proper operation. All of these operation and maintenance procedures are documented in a written plan KRGT developed in accordance with Title 49 CFR Part 192. To ensure implementation of maximum feasible mitigation (as defined by the CEQA) and to assist the CSLC in reviewing KRGT's project for consistency with the CSLC's action on the new or amended leases across California School Lands, before placing the pipeline system into service in California, KRGT would submit to the CSLC for approval a revised operation and maintenance plan. The revised plan would address internal and external maintenance inspections of the completed facility, including details of integrity testing methods to be applied, corrosion monitoring and testing of the cathodic protection system, and leak monitoring. The plan would also specify that KRGT would, unless expressly prohibited by DOT regulations, conduct an internal inspection with a high-resolution instrument on a periodic basis, at a minimum of one inspection every 10 years, or sooner if the evidence suggests that significant corrosion or defects exist or if any new Federal or state regulations require more frequent or comparable inspections. Within 3 months following the promulgation of any new Federal or state regulations, KRGT would update the plan and submit a revised copy to the CSLC. While KRGT's primary safety focus is accident prevention, KRGT has, in accordance with Part 192, developed an emergency response plan for the proposed project based on its current plan, which would be coordinated and tested (through drills and exercises) with local fire/police departments and emergency management agencies. This plan would also be reviewed by the DOT Office of Pipeline Safety and is subject to DOT rules and regulations. KRGT has provided its emergency response plan to the CSLC			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT173 ARM11 (cont'd)			per its request. Key elements of the emergency response plan include procedures for: • receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters; • establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response; • making personnel, equipment, tools, and materials available at the scene of an emergency; • protecting people first and then property, and making them safe from actual or potential hazards; and • emergency shutdown of the system and safe restoration of service. KRGT maintains 24-hour emergency response capabilities, including an emergency-only toll-free telephone number. The number is included in informational mail-outs, posted on all pipeline markers, and provided to local emergency agencies in the vicinity of the pipeline. KRGT currently meets with the emergency services departments of the municipalities and counties along its existing pipeline facilities. Fire and safety equipment is maintained along the pipeline system, and KRGT personnel and local emergency response groups are trained in response procedures. KRGT personnel consult with local fire departments and emergency response agencies to determine if additional equipment, training, and preparedness support are needed and provide additional equipment, training, and support where the needs are identified. KRGT provides these departments with the 24-hour emergency numbers and verbal, written, and mapping descriptions of the pipeline system. KRGT representatives also meet with all local emergency service units on an on-going basis. These procedures would continue for the Kern River 2003 Expansion Project.			

TABLE 5.1-1 (cont'd)

Mitigation Monitoring Program for the Kern River 2003 Expansion Project

Mitigation Number a/	Impact	Significance Before Mitigation b/	Mitigation	Significance After Mitigation b/	Applicability	Monitoring Responsibility
KRGT173 ARM11 (cont'd)			To assist the CSLC in reviewing the project for consistency with its action to issue to KRGT new right-of-way leases or to amend the existing leases across California School Lands, KRGT would provide the following documents pertaining to the California portion of the project to the CSLC within 120 days of the completion of work in California: • a set of "as built" construction plans, certified by a California-registered civil/structural engineer, showing all design changes or other amendments to the construction as originally approved; • certified copies of all completed pipeline integrity test results (hydrostatic tests, gauging runs, etc.) including copies of any failed test results with an explanation of the reason for failure; and • a post-construction written narrative report confirming completion of the project with discussion of any significant field changes or other modifications to the approved design or execution plan, and providing details of any extraordinary occurrences such as spill incidents and accidents involving serious injury or loss of life, and a summary of a quality control and weld inspection program including all failed and repaired welds.			

a/ KRGT - Kern River Gas Transmission Company-proposed mitigation.
ARM - agency-recommended mitigation.

b/ California Environmental Quality Act (CEQA) Significance Classifications:
Class I - a significant impact that cannot be mitigated to non-significance.
Class II - a significant impact, but one that can be mitigated to non-significance with the application of appropriate mitigation measures.
Class III - a non-significant impact.
Class IV - a beneficial impact.

c/ Applies to all states (Wyoming, Utah, Nevada, and California).

COMMENTS ON THE DRAFT EIS/EIR AND RESPONSES

6.0 COMMENTS ON THE DRAFT EIS/EIR AND RESPONSES

INDEX

Document Number	Commenter
PUBLIC MEETINGS	
NA	Although a few speakers asked questions about the project or made statements in favor of hiring union labor for construction, no comments on the draft EIS/EIR were presented at any of the five public meetings. Therefore, the transcripts are not included in the final EIS/EIR. The public meeting transcripts are available for viewing on the FERC Internet web site (http://www.ferc.gov). Using the "RIMS" link, select "Docket #" and follow the instructions (call (202) 208-2222 for assistance).
FEDERAL AGENCIES	
FA1	U.S. Department of Justice, Immigration and Naturalization Service
FA2	U.S. Marine Corps
FA3	U.S. Department of Commerce, Office of the Under Secretary for Oceans and Atmosphere
FA4	U.S. Department of Agriculture, Forest Service, Dixie National Forest
FA5	U.S. Department of the Interior
FA6	Department of the Air Force, Edwards Air Force Base, Environmental Management
FA7	Department of the Air Force, Edwards Air Force Base, Engineering
FA8	U.S. Environmental Protection Agency
STATE AGENCIES	
SA1	California Regional Water Quality Control Board, Lahontan Region
SA2	Nevada Department of Conservation and Natural Resources, Commission for the Preservation of Wild Horses
SA3	Nevada Department of Administration
SA4	State of Utah, Governors Office of Planning and Budget
SA5	California State University, San Bernardino

INDEX (cont'd)

Document Number	Commenter
SA6	State of California, Department of Fish and Game
SA7	California Department of Transportation
SA8	State of Wyoming, Office of Federal Land Policy
SA9	Wyoming Game and Fish Department
SA10	Wyoming Department of State Parks and Cultural Resources, State Historic Preservation Office
SA11	Wyoming Department of Environmental Quality
SA12	Wyoming Office of State Lands and Investments
LOCAL AGENCIES	
LA1	City of Fontana
LA2	City of Ontario
LA3	Kern County Waste Management Department
LA4	San Bernardino County Land Use Services Department
LA5	Kern County Environmental Health Services Department
COMPANIES AND ORGANIZATIONS	
CO1	Wasatch Front Regional Council
CO2	National Wild Horse Association
CO3	Nevada Outdoor Recreation Association, Inc.
CO4	Public Employees for Environmental Responsibility
CO5	Wasatch Clean Air
CO6	California Off Road Vehicle Association, Inc.
CO7	California Native Plant Society
CO8	Red Rock Audubon Society
CO9	Desert Tortoise Preserve Committee, Inc.

INDEX (cont'd)

Document Number	Commenter
NATIVE AMERICAN GROUPS	
NA1	Great Lakes Indian Fish and Wildlife Commission
NA2	The Shoshone-Bannock Tribes
INDIVIDUALS	
IND1	Joanne Hardesty
IND2	Edward Riddle
IND3	Denis D. Stuhff
IND4	Jan Bisig
PROJECT APPLICANT	
A1	Kern River Gas Transmission Company

Comments on the Draft EIS/EIR and Responses

FEDERAL AGENCIES

U.S. Department of Justice
Immigration and Naturalization Service
Administrative Center Laguna

ORIGINAL

ACLFAE 10/9.2.6

24000 Avila Road
P. O. Box 30080
Laguna Niguel, CA 92607-0080

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FEDERAL ENERGY REGULATORY COMMISSION
FILED

March 15, 2002

CP01-422

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, D.C. 20426

Re: Kern River 2003 Expansion Project Draft EIS

Dear Ms. Salas:

FA1-1 At the current time, the U.S. Immigration and Naturalization Service -Western Region declines to comment on the Draft Environmental Impact Statement for the Kern River 2003 Expansion project. Thank you for requesting comments from the U.S. Immigration and Naturalization Service - Western Region.

If I can be of any further service, feel free to contact the undersigned at 949-425-7081.

Sincerely,

Charles H. Parsons
Regional Environmental Officer

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FA1-1 Comment noted.

UNITED STATES MARINE CORPS
MARINE CORPS LOGISTICS BASE
BARSTOW, CALIFORNIA 92311

IN REPLY REFER TO:
5090
B570
MAR 26 2002

Cy R. Oggins
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, California 95825-8202

Dear Mr. Oggins:

SUBJECT:- CSLC EIR NO. 710, STATE CLEARINGHOUSE NO. 2001071035

Our staff has completed a review of the Draft Environmental Impact Statement/Environmental Impact Report, Kern River 2003 Expansion Project plan.

FA2-1 Our concern is, as work approaches the Marine Base (Daggett Loop) from either direction, contractors must coordinate well in advance with the Military Police, Ranger Officer and the Environmental Division concerning security, access, live fire range safety and Endangered Species (desert tortoise) protections.

Point of contact for further information is Mr. Manuel Joia at (760) 577-6574.

Sincerely,

J. L. STORMO
Head, Environmental Division
Installation and Logistics Department
By direction of the Commanding Officer

Federal

FA2-1 Section 4.8.6.1 has been revised to include that contractors must coordinate well in advance with the Military Police, Ranger Officer, and the Environmental Division concerning security, access, live fire range safety, and desert tortoise protections.

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

March 28, 2002

Ms. Maggie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Dear Ms. Salas:

Enclosed are comments on the Draft Environmental Impact Statement for Kern River 2003 Expansion Project FERC/EIS 0144D Wyoming, Utah, Nevada and California. We hope our comments will assist you. Thank you for giving the opportunity to review this document.

Sincerely,

Margaret F. McCabe

for Scott B. Gudes
Deputy Under Secretary
for Oceans and Atmosphere

Enclosure

cc:
Cy Oggins
California State Lands Commission
100 Howe Avenue
Sacramento, CA 95825

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NOAA

Federal

MEMORANDUM FOR: Margaret McCalla
Acting Director, Office of Policy and Strategic Planning

FROM: Charles W. Challstrom
Director, National Geodetic Survey

SUBJECT: DEIS-0203-06 Kern River 2003 Expansion Project FERC/EIS 0144D Wyoming, Utah, Nevada and California

FA3-1 The subject statement has been reviewed within the areas of the National Ocean Service (NOS) responsibility and expertise and in terms of the impact of the proposed actions on NOS activities and projects.

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the National Geodetic Survey's home page at the following Internet World Wide Web address: http://www.ngs.noaa.gov After entering the this home page, please access the topic "Products and Services" and then access the menu item "Data Sheet." This menu item will allow you to directly access geodetic control monument information from the National Geodetic Survey data base for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project.

If there are any planned activities which will disturb or destroy these monuments, NOS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation. NOS recommends that funding for this project includes the cost of any relocation(s) required.

For further information about geodetic control monuments, please contact Rick Yorczyk; SSMC3 8636, NOAA, N/NGS; 1315 East West Highway; Silver Spring, Maryland 20910; telephone: 301-713-3230 x142; fax: 301-713-4175, Email: Rick.Yorczyk@noaa.gov.

NOS also has state representatives in two of the affected project states, Wyoming and California, who would be able to provide further assistance. Their contact information is:

Wyoming - Michael D. Londe, Ph.D Geodisist, Information Management and Technology Group, BLM / WY 957, 5353 Yellowstone RD, Cheyenne, WY 82009 Telephone: 307-775-6209 Fax: 307-775-6173 E-mail: mike_londe@blm.gov

Federal

FA3-1 Kern River Gas Transmission Company (KRGT) would coordinate the identification of geodetic control monuments and make the proper notifications to the National Geodetic Survey. KRGT has agreed to provide funding for the cost of any relocation of geodetic control monuments required.

FA3-1 (cont'd) | **California** - Marti Ikehara, NGS, c/o CALTRANS Geometronics Branch, MS 35, 1727 30th Street, Sacramento, CA 95816 Telephone: 916-227-7325 Fax: 916-227-7670 e-mail: marti_ikehara@dot.ca.gov

Federal

United States Department of Agriculture
Forest Service
Dixie National Forest
1789 N. Wedgewood Lane
Cedar City, UT 84720-7769
(435) 865-3700

File Code: 1950-4
Date: April 2, 2002

Magalie R. Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Dear Secretary Salas:

FA4-1 This is reference to Docket No. CP01-422-000, Kern River 2003 Expansion Project Draft Environmental Impact Statement (DEIS). My staff has reviewed the DEIS as it pertains to proposed actions within the Dixie National Forest, USDA Forest Service. I am satisfied that the DEIS addresses resource and social issues raised during the scoping and analysis. I support the analysis and documentation to date.

Please advise me if there are any proposed changes to the DEIS, especially relating to the Dixie National Forest. My staff will continue to work closely with FERC, BLM, and Natural Resource Group to insure National Forest resources are appropriately used and protected by the proposed pipeline development.

Sincerely,

Mary Wagner

MARY WAGNER
Forest Supervisor

cc:
Cy Oggins

Federal

FA4-1 Thank you for your comments. The Federal Energy Regulatory Commission (FERC) staff appreciates the cooperation of the Dixie National Forest in this National Environmental Policy Act (NEPA) review effort.

ORIGINAL

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1111 Jackson Street, Suite 520
Oakland, CA 94607

FILED
OFFICE OF THE SECRETARY
02 APR 10 AM 10:35
FEDERAL ENERGY
REGULATORY COMMISSION

April 8, 2002

ER02/156

Ms. Magalie Roman Salas, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, D.C. 20426

Subject: Review of Draft Environmental Impact Statement/Environmental Impact Report for the Kern River 2003 Expansion Project (Docket No. CP01-422-000) By Kern River Gas Transmission Company to Address Natural Gas Pipeline Facilities in Wyoming, Utah, Nevada, and California (ER 02/0156)

Dear Ms. Salas:

The U.S. Fish and Wildlife Service (Service) has reviewed the subject draft Environmental Impact Statement/Environmental Impact Report (DEIS/EIR) in accordance with the Office of Environmental Policy and Compliance's memorandum of February 22, 2002. The following comments are provided for inclusion in the Departmental response to the Federal Energy Regulatory Commission.

The applicant, Kern River Gas Transmission Company (KRGT) proposes to build new natural gas pipeline and compression facilities to transport approximately 886 million cubic feet per day of natural gas from the Central Rocky Mountain region to customers in Nevada and California. The proposed project would loop approximately 717 miles of existing natural pipeline, construct three new compressor stations, and one new meter station, and modify six existing compressor stations and five meter stations.

At this time, the Service is in consultation under section 7 of the Endangered Species Act with Utah, Wyoming, and Nevada Field Offices on several species of concern. Our comments are focused on concerns related to survey guidelines and standards we recommend should be incorporated into 2002 field surveys, the Final Environmental Impact Statement (FEIS), and monitoring in general, for we consider those species to be our trust resources.

GENERAL COMMENTS

FA5-1 The Department commends KRGT for committing to adhere to the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances (Romin and Muck 2002) during

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FERC DOCKETED

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FA5-1 As noted, KRGT proposes to adhere to the seasonal and spatial buffers included in the *Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances*. Because construction would not begin in Utah until after August 1, which is outside the seasonal buffer for many raptors, adjustments to nest buffers as a result of construction conflicts may not be necessary. However, section 4.7.3 has been revised to specifically require coordination with the U.S. Fish and Wildlife Service (FWS) and the Utah Division of Wildlife Resources (UDWR) if any adjustments to nest buffers or alternative mitigation strategies in Utah are necessary. Any requests for adjustments to nest buffers would be made by KRGT on a site-specific basis where a need is identified during construction.

FA5-1 (cont'd) project planning and implementation (DEIS discussion, page 4-132). Seasonal and spatial buffers are important to ensure successful nesting by raptors. If adjustments to these buffers are necessary to meet construction schedules, alternative mitigation strategies should be developed in coordination with the Service and Utah Division of Wildlife Resources on a site-specific basis and incorporated into the FEIS.

FA5-2 We respectfully disagree with the DEIS's definition of "intermittent" as applied to streams and the value of those streams to arid ecosystems. We define intermittent streams as those having reaches that may be dry during some of the year, but other reaches and pools contain year-round water and serve as refugia for stream biota. Even stream reaches which are dry at the surface may have underground water supporting burrowing faunal species and riparian vegetation. Seasonal flooding of the entire water body allows for ecological functions such as migration of mobile species and downstream flux of detrital food sources. Intermittent streams often provide habitat to species that have evolved specifically to meteorological cues, and have unique ecological merit. We recommend mitigation for crossings of intermittent streams, and think the crossing techniques used should not be determined solely by the presence or absence of surface water (see Specific Comments).

Endangered Species Act

FA5-3 The Department is concerned that survey methods used during the 2001 field season do not conform to standard survey methods for mountain plover, sage grouse, bald eagle, and raptors. These surveys may be useful in determining areas of suitable habitat for various species, but cannot be used for the determination of presence/absence, especially as it relates to the analyses for these species in the DEIS. We request that 2002 species surveys follow recommended survey guidelines provided by the Service in order to complete our assessment of project impacts described in the DEIS and the biological opinion (BO) for this proposed project. We recommend the FEIS provide a standard guideline for the submission of biweekly reports to species lead Service Field Offices in Utah and Wyoming for all preconstruction surveys, construction monitoring, and post-construction summaries. These biweekly reports would also include habitat restoration for threatened, endangered, and proposed species and migratory birds.

Black-footed Ferret

FA5-4 The Department, through the Service's Wyoming Field Office, has provided concurrence with the methods employed, the findings reported, and the lack of black-footed ferret sign on the white-tailed prairie dog (*Cynomys leucurus*) colonies surveyed. This information indicates that ferrets are not likely to occupy the surveyed area. Between the DEIS and the Record of Decision (ROD) for this project, if additional evidence indicates the presence of black-footed ferrets in these colonies or adjacent colonies, please contact the Service's Wyoming Field Office immediately. Service concurrence is valid for 1 year from the date the surveys were completed (i.e, until September 23, 2002).

Federal 5

FA5-2 The term "intermittent" used in the environmental impact statement/environmental impact report (EIS/EIR) is based on U.S. Geological Survey topographic maps and aerial and field reconnaissance conducted in the spring and summer of 2001 of the specific waterbody crossing location. In accordance with its Wetland and Waterbody Construction and Mitigation Procedures (WWCM Procedures) (see appendix F), KRGT would restore the bed and banks of all waterbodies, including intermittent waterbodies, to preconstruction contours and would be responsible for restoration of the right-of-way adjacent to each waterbody. Therefore, impacts on fauna and flora associated with waterbodies would be limited to the period of active construction and restoration. Potential impacts on waterbodies are discussed in section 4.3.2. To minimize potential impacts on in-stream biota during construction, waterbody crossing techniques would be selected based on the presence or absence of flowing surface water at the time of the crossing. Additional consideration has been given to waterbody crossings where agencies have identified a specific concern (see section 4.3.2.6). See also the response to comment FA8-13.

Concerning the portion of the project in California, the California State Lands Commission (CSLC) staff notes that all watercourses in California, whether intermittent or perennial, must be retained and provided with substantial setbacks that preserve the riparian and aquatic values and maintain their value to resident and migrant wildlife populations (see section 4.3.2.12). KRGT must obtain a Streambed Alteration Agreement from the California Department of Fish and Game (CDFG) before diverting, obstructing, or changing the natural flow of the bed, channel, or bank (which includes associated riparian habitat) of a river, stream (including intermittent and ephemeral streams), or other listed waterbody.

FA5-3 KRGT has committed to following agency-approved protocols for 2002 special status species surveys. During spring 2002 special status species surveys, KRGT worked directly with local FWS, Bureau of Land Management (BLM), and state agency offices and reported survey results to these agencies throughout the survey periods. This ongoing interaction facilitated discussion of agreed upon mitigation and direct application of that mitigation. KRGT proposes to submit final survey reports to the applicable agencies when completed. During construction, KRGT would submit weekly reports to the environmental staffs of the FERC and the CSLC (Agency Staffs) as part of the compliance monitoring program (see section 2.5). Weekly reports would include issues pertaining to special status species. At the request of the FWS, KRGT would add the FWS to the list of recipients of these weekly reports. Additionally, KRGT would submit post-construction summaries of special status species issues to the applicable agencies. The weekly reports and the post-construction summaries would provide the information requested by the FWS.

FA5-4 If additional evidence indicates the presence of black-footed ferrets in white-tailed prairie dog colonies along the proposed route or in adjacent colonies, the FWS would be contacted. Additionally, section 4.7.2 has been revised to reflect KRGT's commitment to resurvey areas potentially containing black-footed ferrets if construction in these areas occurs after September 23, 2002.

FA5-5 Mitigation Number KRGT84 in the FEIS should specify that if construction is not completed by September 23, 2002, then work areas in suitable habitat for the black-footed ferret (white-tailed prairie dog towns or complexes) would warrant additional surveys for black-footed ferrets.

FA5-6 We recommend Environmental Awareness Training be incorporated into the Monitoring Section of the DEIS and include training on: (1) the identification of black-footed ferrets, (2) their natural history, (3) sign, (4) activities that may affect ferret behavior, (5) ways to minimize these effects, and (6) a standard guideline and policy establishing no domestic dogs (vectors for canine distemper) will be allowed onsite during working hours by Federal Energy Regulatory Commission (FERC), operators, and subcontractors.

Bald Eagle

FA5-7 Mitigation Number KRGT80 in the DEIS identifies where direct and indirect impacts may occur when the loss of nests, young, or abandonment take place, if construction begins near an active bald eagle nest. The proposed mitigation should reduce the effects of construction to "may affect, not likely to adversely affect" if the timing and spacial buffers outlined in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances are followed. We recommend the following language be included in Mitigation Number KRGT80 in the FEIS:

> "Site specific treatments of an active nest may be approved only after consultation with FERC, the Bureau of Land Management (BLM) and the local Service field office."

FA5-8 Mitigation Numbers KRGT80 and KRGT88 in the DEIS identify surveys to be conducted on a 1-mile-wide corridor centered on the Right of Way (ROW) centerline. Please include this information in the FEIS:

> Guidelines require a 1-mile disturbance-free buffer zone around any active bald eagle nest. Therefore, the raptor surveys should cover 1 mile on either side of the outside edge of the construction corridor, right-of-way, or the additional temporary work space, whichever is the outermost boundary of the disturbance.

FA5-9 Ute ladies'-tresses Orchids

The Service's Wyoming Field Office has provided concurrence with the survey methods employed, the findings reported, and the lack of Ute ladies'-tresses orchids found. However, because 2001 was a drought year for much of Wyoming, and the orchid has the ability to remain dormant (without aboveground growth) for at least 1 year, we believe follow-up surveys in the 2002 construction season, during the flowering period (July 20 - August 31, 2002) are necessary in areas of moderate-to-high potential habitat quality. Please incorporate this guideline into the FEIS.

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FA5-5 Section 4.7.2 and mitigation number 88 in table 5.1-1 of the final EIS/EIR (number KRGT84 in table 5.1-1 of the draft EIS/EIR) have been revised to reflect KRGT's commitment to resurvey areas potentially containing black-footed ferrets if construction in these areas occurs after September 23, 2002.

FA5-6 The general environmental awareness training program is discussed in section 4.7.1. KRGT would include the requested black-footed ferret information in the program.

FA5-7 Section 4.7.2 and mitigation number 84 in table 5.1-1 of the final EIS/EIR (number KRGT80 in table 5.1-1 of the draft EIS/EIR) have been revised to include this recommendation.

FA5-8 Section 4.7.2 and mitigation numbers 84 and 93 in table 5.1-1 of the final EIS/EIR (numbers KRGT80 and KRGT88 in table 5.1-1 of the draft EIS/EIR) have been revised to state that KRGT's 2002 aerial surveys for raptor nests would cover 1 mile on either side of the outside edge of the construction work area.

FA5-9 Section 4.7.2 has been revised to include this recommendation.

Cumulative Impacts to Endangered, Threatened, and Proposed Species

FA5-10 The cumulative effects discussion does not include an analysis of the effects to endangered, threatened, and proposed species of the William's Northwest Pipeline Project in Lincoln and Sweetwater Counties, Wyoming. The proposed work includes three proposed natural gas pipeline loops (Kemmerer, Muddy Creek, and Pegram), three compressor stations, and six contractor yards.

Migratory Bird Treaty Act

FA5-11 The proposed construction start date coincides with the peak nesting period for mountain plovers, burrowing owls, sage grouse, and other migratory birds along the Wyoming portion of the pipeline right-of-way (ROW). We recommend the FERC authorize construction only after August 1, 2002, and include this guideline in the FEIS and ROD. By starting on or after August 1, KRGT would greatly reduce the possibility of take of migratory birds.

FA5-12 The proposed construction start date also coincides with the peak nesting period for migratory birds along the Wyoming portion of the pipeline ROW. Mitigation measure KRGT88 in the DEIS stipulates that KRGT would follow the timing and spacial buffers outlined in the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances. Please include this information and guideline in the FEIS:

> A 1-mile disturbance-free buffer zone is needed on any active bald eagle or peregrine falcon nests. Raptor surveys will therefore cover 1 mile either side of the outside edge of the construction corridor, right-of-way, or the additional temporary work space, whichever is the outermost boundary of the disturbance. There may also be additional BLM and or Wyoming Game and Fish Department timing and spatial buffers that apply (e.g., BLM Kemmerer Field Office has required a 1-mile disturbance-free buffer zone for the period February 1 through July 31 in the past).

FA5-13 Mitigation measure KRGT89 in the DEIS indicates that new power lines would be constructed to support some of the project's ancillary facilities. If any part of this project would involve the construction of new power lines or modification of existing lines, please include this guideline in the FEIS:

> Please provide precautionary measures to protect raptors, by raptor proofing the power lines. Federal Register 49 Section 1729.10, 1984, allows for deviations from Rural Electrification Administration (REA) construction standards for raptor protection. Structures, which are designed for raptor protection should be in accordance with Suggested Practices For Raptor Protection on Power Lines. The State of the Art. Raptor Research Report, 1996, (or more current edition, if available), published by the Raptor Research Foundation, Inc., provided for such structures to meet with the National

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FA5-10 The Northwest Pipeline Project (also known as the Rockies Expansion Project) has been included in the cumulative impacts analysis in section 4.13.

FA5-11 Based on the time frame necessary to complete the permitting process for the project, construction would not begin before August 1, 2002. This start date is after the breeding season for the majority of migratory birds and, along with the other measures proposed by KRGT, should effectively minimize potential impacts on migratory birds.

FA5-12 Section 4.7.3 and mitigation number 93 in table 5.1-1 of the final EIS/EIR (number KRGT88 in table 5.1-1 of the draft EIS/EIR) have been revised to state that KRGT's 2002 aerial surveys for raptor nests would cover 1 mile on either side of the outside edge of the construction work area.

FA5-13 The powerlines associated with the Dry Lake and Coyote Creek Compressor Stations would be constructed by local utility companies and connected to the local power grid. However, KRGT would include written instructions to the utility company requiring the powerlines to comply with applicable raptor protection guidelines. Additionally, the Dry Lake Compressor Station would be constructed on lands administered by the BLM; therefore, it is likely that the right-of-way grant would include similar provisions.

FA5-13 (cont'd) Electrical Safety Code.

Authority for these measures resides with section 9 of the Endangered Species Act of 1973, as amended, the Migratory Bird Treaty Act and the Bald Eagle Protection Act, which protects bald and golden eagles. In the above-cited Federal Register publication, the following bulletins also are recommended: REA Bulletin 40-7, National Electrical Safety Code ANSI C2, 1981 Edition, and REA Bulletin 61-60, Power line Contacts by Eagles and Other Large Birds.

Mountain Plover, Impacts and Mitigation

FA5-14 To avoid project delays, should the mountain plover become listed as a threatened species, we recommend FERC determine the effects of the proposed project and all alternatives on mountain plover habitat in the FEIS. Should the mountain plover be listed prior to, or during construction, surveys would be required, and FERC would be required to reinitiate section 7 consultation with the Service. Please contact the Wyoming Field Office for a copy of the latest Mountain Plover Survey Guidelines, if formal consultation has not occurred.

FA5-15 Mitigation Number KRGT81 in the DEIS, and a letter dated March 6, 2002, from Ecology and Environment, Inc., require some clarification. In phone conversations with Mr. Mike Donnelly (September 6, 2002) and Mr. Jason Stiner (February 4 and 12, 2002) of Ecology and Environment, Inc., the Service identified concerns with the timing of the project, and possible conflicts that may occur with nesting plovers. We stated that specific avoidance requirements could be determined on a case-by-case basis when plover nests are identified along the ROW. As a proposed species, the mountain plover does not receive full protection under the Act. However, mountain plovers do receive the same protection as other migratory birds under the Migratory Bird Treaty Act. In addition, spacial and timing buffers as outlined in the Mountain Plover Survey Guidelines are recommended for nesting plovers and we request they be included in the FEIS.

We recommend the following language be included in Mitigation Number KRGT81:

> Initiation of the Kern River 2003 Expansion Project should occur as near to completion of the survey as possible. For example, pipeline construction should begin as close to the date of completion of the surveys as possible.
>
> If an active nest is found in the survey area, the planned activity should be delayed 37 days, or 1 week post hatching. If a brood of flightless chicks is observed, activities should be delayed at least 7 days.

Variances to seasonal or spacial buffers may be granted only after consultation with the local Service field office. In addition, we recommend KRGT provide mitigation for any permanent above-ground structures, roads, and/or two tracks along the pipeline which affect mountain plover habitat.

FA5-14 Based on the latest Mountain Plover Survey Guidelines (FWS, 2001), construction occurring after July 10 would not be likely to affect mountain plovers. Because of the time frame necessary to complete the permitting process for the project, construction would not begin before August 1, 2002. Therefore, construction of the project in areas of potential mountain plover habitat would not likely directly affect nesting or pre-fledging mountain plovers.

FA5-15 See the response to comment FA5-14. No permanent aboveground structures, roads, and/or two-tracks are proposed in mountain plover habitat.

FA5-16 Please include these guidelines in the FEIS:

> Because domestic dogs can pose a significant threat to mountain plover nests and flightless chicks, FERC, operators, and subcontractors will ensure no dogs are onsite during working hours (Dr. Fritz Knopf, pers. comm.).
>
> Environmental Awareness Training will include: (1) identification of mountain plovers, their nests and eggs, (2) natural history activities that may affect mountain plover behavior and (3) ways to minimize these effects, (4) all incidental sightings of mountain plovers along the ROW should be provided to the BLM and Service.

Fisheries and Wildlife Resources

FA5-17 Burrowing Owl

Mitigation measures identified in Mitigation Number KRGT93 and letters dated March 4 and March 6, 2002, from Ecology and Environment, Inc. identify mitigation measures for the burrowing owl, which may be insufficient to prevent take of burrowing owls. Please include these mitigation measures in any other surveys to be conducted in all suitable habitat for the burrowing owl. Please include this information in the FEIS, and final BO, if construction activities occur between March 1 and August 31. Furthermore, please consider that the proposed July 31 cutoff date for burrowing owls, is not sufficient to protect late nesting owls, or second nesting attempts by this species.

Mitigation Number KRGT93 identifies a survey corridor of 100 meters; whereas, the March 4 letter identifies a survey corridor of 200 to 250 feet. In addition, the March 6 letter states new burrows will be constructed within 20 to 50 meters of the existing/previous burrow to facilitate relocation. Please include these standards and guidelines for surveying burrowing owls in the FEIS:

> KRGT has committed to follow the Utah Field Office Guidelines for Raptor Protection from Human and Land Use Disturbances, which recommend a 1/4-mile no disturbance buffer between March 1 and August 31 around borrowing owl nests. Therefore, survey guidelines (incorporated into the FEIS) should cover 1/4-mile on either side of the outside edge of the construction corridor, right-of-way, or the additional temporary work space, whichever is the outermost boundary of the disturbance.
>
> In addition, any relocation of nests less than 1/4-mile from the outermost boundary of the disturbance could result in nest abandonment. Variance of timing and spacial buffers may be approved on a case-by-case basis for proposed work between March 1 and August 31, after consultation with the BLM and local Service field office.
>
> If the project is implemented prior to August 1, "passive relocation" of burrowing owls

Federal

FA5-16 KRGT would not allow dogs on the right-of-way during construction. The general environmental awareness training program is discussed in section 4.7.1. KRGT would include the requested mountain plover information in the program.

FA5-17 Surveys for burrowing owls were conducted in spring 2002 following survey protocols adapted from *Burrowing Owl Survey Protocol and Mitigation Guidelines* developed by the California Burrowing Owl Consortium, as well as through consultation with the FWS, the BLM, the UDWR, and the Wyoming Game and Fish Department (WGFD). Agency representatives were contacted during surveys to discuss survey results and to develop appropriate mitigation measures. Section 4.7.3 has been revised to include details of the surveys and proposed mitigation measures.

FA5-17 (cont'd)

from the ROW, and within 1/4-mile of the outermost boundary of disturbance associated with the work is recommended. This method will be implemented very early in the breeding season (starting March 1, 2002) to ensure that active nests are not established. In addition, if this method is to be used, extensive monitoring will be required to ensure take of burrowing owls does not occur.

If nest manipulation is proposed for this project, the project proponent will contact the Service's Migratory Bird Office in Denver at 303-236-8171 to apply for a Migratory Bird take permit for this project. No nest manipulation is allowed without a permit. If a permit cannot be issued, the project may need to be modified to ensure take of a migratory bird, their young, eggs, or nest will not occur.

FA5-18

Sage Grouse

Sage grouse are declining throughout their range, and a petition to list this species is anticipated. The cause of sage grouse decline is not known, but may be due to a combination of habitat loss and reproductive success. However, anecdotal information, from several sources in Wyoming, suggest sage grouse populations are negatively affected by oil and gas development even when mitigative measures are implemented. Please clarify in the FEIS the amount and type of sage grouse habitat (lek, nesting, brood rearing) affected by this project. We are concerned the proposed start date of June 1, 2002, stated in the DEIS, coincides with the peak nesting period for sage grouse. Please include this information in the FEIS:

> The first week after hatching is critical to the survival of sage grouse chicks (Dr. Pat Deibert, pers. comm.). We recommend avoidance of any activity that would disrupt brood rearing during the period June 1 through July 31.

In addition, we recommend your agency contact the local Wyoming Game and Fish biologist to more accurately determine the local hatch dates, and areas of nesting and brood rearing habitat along the project right-of-way. Please include this information in the impacts analyses for the FEIS.

FA5-19

Section 404 of the Clean Water Act, Executive Orders 11990, 11988

We note that wetlands may be destroyed or degraded by the proposed action. Wetlands in the project area should be inventoried and fully described in terms of functions and values in the FEIS. Acreage of wetlands by type should be disclosed, and specific actions outlined to avoid impacts and mitigate for all unavoidable wetland impacts.

These comments do not preclude separate evaluation and comments by the Service pursuant to the Fish and Wildlife Coordination Act (16 U.S.C. 661, et seq.), if project implementation requires a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. 1344, et seq.).

Federal

FA5-18 Construction of the project would not begin before August 1, 2002, which would avoid the nesting and brood rearing periods for sage grouse. Lekking surveys were completed along the pipeline route in spring 2002. Surveys were conducted following protocols approved by the FWS, the BLM, and the UDWR and contact with these agencies was maintained throughout the surveys. The results of these surveys provide an accurate assessment of actual habitat present along the proposed route. Section 4.7.3 has been revised to include this information.

FA5-19 Information on wetland functions and values has been added to section 4.4.1. All wetlands crossed by the project are palustrine emergent wetlands. The amount of wetland disturbance associated with the project is provided in table 4.4.1-1. Wetland impacts and mitigation measures are described in section 4.4.3.

SPECIFIC COMMENTS

FA5-20 | Executive Summary, Page ES-10: In addition to changes in food sources, contamination from spills or leaks could result in lethal and/or sublethal effects to adult and juvenile fish. This information should be incorporated throughout the FEIS, and in development of spill prevention and response plans, as appropriate.

> Sublethal exposure of fish to contaminants can result in altered behavior, and impede necessary life functions; e.g., habitat selection, competition, predator avoidance, feeding, and reproduction (Laurence 1972, Schoener 1974, Little et al. 1985, Brown et al. 1987, Lemly and Smith 1987, Little et al. 1993). Changes in heart and respiratory rates; gill hyperplasia; enlarged liver; reduced growth; fin erosion; impaired endocrine system; a variety of biochemical, blood, and cellular changes; and behavioral responses also may result. Behavioral and physiological changes generally occur at lower toxicant concentrations than that which cause mortality (Little and Finger 1990).

FA5-21 | Page 2-30, section 2.3 (Construction Procedures): We recommend using the flume method of waterbody crossing, rather than the open cut method at the Muddy River crossing. The Service's Southern Nevada Field Office staff recommended this method to Mr. Mike Donnelly of Ecology and Environment, Inc., representing KRGT, during an onsite meeting (January 28, 2002). We anticipate the flume method will result in less disturbance to substrate, and reduce the amount of sedimentation in the water as compared to the open cut method.

In addition, we recommend the incorporation of a guideline into the FEIS for completing all construction activities at the Muddy River crossing, prior to April 1. This construction date will avoid the spawning period of the Muddy River population of the Virgin River chub (*Gila seminuda*). If any construction has not been completed by April 1, we recommend the guideline state "any other construction activities on the remainder of the pipeline should occur after the crossing is complete."

FA5-22 | Special Construction Techniques, page 2-30, paragraph 4: The DEIS states the project will cross approximately 300 intermittent water bodies, and proposes to cross them with conventional cross-country construction techniques, if surface water is present. We are concerned that conventional cross-country techniques may lead to scouring, erosion, and loss of habitat in streams that receive periodic high flows. Therefore, we recommend that crossing methods in the FEIS include more protective techniques if the stream reach possesses characteristics such as seasonal high flows, erosive stream substrate, riparian vegetation, or the presence of year-round pools or shallow groundwater.

FA5-23 | Operation, Maintenance, and Safety Controls, page 2-39, paragraph 1: Environmentally sensitive areas should be identified and monitored according to the Pipeline Integrity Management in High Consequences Area Rule (65 FR 75378, December 1, 2000; 49 CFR Part 195, subparts 195.450 and 195.452).

FA5-20 Section 4.6.2.1 has been revised to include this information.

FA5-21 KRGT proposes to cross the Muddy River using the flume method and proposes to complete the crossing before April 1. Tables 4.3.2-2 and 4.6.2-2 and sections 4.3.2.6 and 4.7.2 have been revised to include this information.

FA5-22 As stated in section 2.3.2, intermittent waterbodies would be crossed using conventional cross-country construction techniques if surface water is *not* present at the time of the crossing. Waterbodies with specific agency concerns are addressed in section 4.3.2.6. KRGT has modified the proposed crossing methods or has provided other additional mitigation measures to protect waterbodies in consultation with the BLM; the U.S. Army Corps of Engineers (COE); the U.S. Department of Agriculture, Forest Service (FS); and the state resource agencies that permit waterbody crossings in Wyoming, Utah, Nevada, and California. In addition, by implementing its WWCM Procedures (see appendix F), KRGT would restore all waterbodies to preconstruction condition, thereby minimizing the potential for scour and erosion, and restoring habitat. See also the response to comment FA8-13.

FA5-23 The Pipeline Integrity Management in High Consequences Area Rule (Title 65 Federal Regulations Part 75378) addresses hazardous liquid pipelines and Title 49 Code of Federal Regulations (CFR) Part 195 applies to liquid pipelines. As a result, these regulations do not apply to the natural gas facilities associated with the Kern River 2003 Expansion Project. Title 49 CFR Part 192 applies to natural gas pipelines. As stated in section 4.12.1, the pipeline and aboveground facilities associated with the Kern River 2003 Expansion Project would be designed, constructed, operated, and maintained in accordance with or to exceed the U.S. Department of Transportation (DOT) Minimum Federal Safety Standards in Title 49 CFR Part 192. The environmentally sensitive areas that would be affected by the project are discussed throughout the EIS/EIR. KRGT's required monitoring covers the entire project, including the environmentally sensitive areas.

FA5-24 Water Resources, pages 4-40-45: We are concerned that this discussion is presented solely as a drinking water issue, and does not include potential for impact to fish and wildlife. Both shallow and carbonate rock aquifers may permit rapid transmission of contaminated water to surface in seeps, springs and streams, and thus to fish and wildlife. The DEIS notes that some of the aquifer systems underlying the project area are formed in carbonate rock. The final document should include additional disclosure of those aquifers in karst regions where contamination of surface waters is more likely.

FA5-25 Page 4-61, section 4.3.2.9 (Hydrostatic Testing): KRGT proposes to withdraw an undetermined set volume of water for hydrostatic testing. The withdrawal area is occupied by the Muddy River population of the Virgin River chub. We recommend that KRGT include measures in the FEIS to minimize potential effects to the Muddy River system and the chub; e.g., (1) providing an onsite fisheries biologist to oversee the water withdrawal process to ensure that chub are not killed in the process, (2) installation of a barrier so that chub are not extracted from the river during water withdrawal, and (3) a description of the Muddy River flow rate at the crossing, and how the withdrawal will affect the flow rate of the river.

FA5-26 Page 4-92, section 4.5.4 (Vegetation - Noxious Weeds): Past restoration of the Kern River Gas Pipeline (KRGP) ROW was not sufficient enough to establish native vegetation. The visible scar remaining on the landscape and the proliferation of weeds along the pipeline's current course are evidence. In order to restore native vegetation and habitat, we recommend that KRGT make every effort possible to salvage as many cacti, yuccas, and agave as possible. These plants are recognized as being ecologically important, and are protected under the State of Nevada's Revised Statute 527.100. We also recommend that KRGT comply with the restoration guidelines set by the Bureau of Land Management (BLM). Please include this information in the FEIS:

> Weeds are especially likely to invade disturbed grounds and may continue to invade for many years after an initial disturbance. Long-term weed control plans should account not only for weed invasions as a direct result of construction activities, but also for invasions that occur simply because a disturbance exists.

Monitoring and treatment for weeds is targeted for a 5-year period in the DEIS (page 4-95). We recommend this time frame be extended until the plant community along the pipeline is out of the early successional stages, which generally extends to at least 10 years. A longer time frame is also necessary because some weeds; e.g., Russian knapweed (*Acroptilon repens*), are rapidly invading southern Nevada. They require more than 5 years before control can be realized.

FA5-27 Page 4-103, section 4.6.1.2 (Migratory Birds): In the third paragraph, the DEIS states that "The FWS recommended that KRGT complete construction in riparian areas identified along the proposed route in the Mojave Desert before May to avoid impacting migratory birds that may potentially nest in these areas. . ." This recommendation was made in reference to the breeding season of the federally endangered southwestern willow flycatcher (*Empidonax traillii extimus*), in Nevada which begins in May. However, other birds protected under the Migratory Bird Treaty

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FA5-24 The potential impacts on fish and wildlife resulting from project activities are discussed in section 4.6. Due to the nature of pipeline construction (*i.e.,* shallow linear excavation for installation of the pipeline), groundwater quality is expected to remain unchanged, although some temporary, short-term impacts may occur. As a result, the potential for construction to impact fish and wildlife as a result of groundwater quality degradation is low. KRGT would implement its Spill Plan (see appendix G) to minimize the potential risk associated with rapid transmission of contaminants in areas highly susceptible to groundwater contamination (*i.e.,* shallow and carbonate rock aquifers under highly permeable soils). KRGT's Spill Plan provides preventive and corrective actions that would be taken to reduce potential impacts associated with hazardous spills. Additionally, section 4.3.1.4 outlines steps to be taken in the event contaminated soil and/or groundwater are encountered during construction of the project.

FA5-25 KRGT has eliminated the Muddy River as a potential source of hydrostatic test water (see revised table 4.3.2-4).

FA5-26 KRGT has agreed to salvage and transplant all yucca, cactus, and agave that are considered feasible to transplant as discussed in sections 4.5.2 and 4.5.3. KRGT has also adopted the BLM's *Draft Restoration Success Standards and Monitoring Plan.* KRGT would implement its site-specific Reclamation Plans and Noxious Weed Plan to facilitate restoration and to control noxious weeds along the right-of-way. Section 4.5.4 has been revised to include this information. See also the responses to comments CO4-13 and CO8-1. Monitoring and treatment of noxious weeds would occur throughout the life of the pipeline. See the response to comment SA6-2.

FA5-27 Mesquite woodlands were identified adjacent to the proposed right-of-way between mileposts (MP) 474.2 and 474.4 and near MPs 477.1 and 477.4. KRGT proposes to complete the majority of construction activities in these areas before March 1, 2003. However, access through these areas, as well as some restoration activities, may still be necessary past March 1. These activities would be less disruptive than trenching, lowering-in, and backfilling and would not be expected to preclude nesting in the mesquite woodlands adjacent to the right-of-way. Therefore, the Agency Staffs believe that construction of the proposed project would not adversely affect migratory birds in the Moapa/Glendale area.

FA5-27 (cont'd)

Act begin nesting in March in the Mojave Desert. Construction activities during the months of March and April may therefore impact migratory birds that begin breeding in March such as the phainopepla *(Phainopepla nitens)*, which is known to nest in mesquite woodlands, adjacent to the proposed pipeline route in the Moapa/Glendale area. We recommend the FEIS provide a guideline for completing the work on the pipeline segment adjacent to the mesquite woodlands, which are north of the Moapa/Glendale area, by March 1. This guideline would avoid disruption of breeding phainopeplas. Southern Nevada Field Office Service staff discussed this issue during a telephone conversation with Mr. Jeff Thommes of Natural Resource Group, Minneapolis, Minnesota (October 2, 2001).

FA5-28

Utah Prairie Dog, page 4-122: The DEIS has included the measures requested by the Service. We concur with the proposed minimization measures. These measures would reduce Utah prairie dog mortality and impacts to the population as a whole to the maximum extent practicable

FA5-29

Desert Tortoise, page 4-124: We believe that the proposed compensation ratios outlined in the DEIS are acceptable and in accordance with Compensation for the Desert Tortoise (Desert Tortoise MOG 1991). Last fall, the Service's Utah Field Office staff forwarded to the commission (via email) specific townships, ranges, and sections of designated critical habitat for desert tortoises (currently in private or State ownership), which are recommended for acquisition and transferral to the BLM for inclusion in their Area of Critical Environmental Concern (ACEC) in Utah. However, we are not informed as to how the acquisitions are progressing, and which parcels are being or have been acquired.

We request confirmation of which parcels are being acquired, who is conducting the acquisitions, and when acquisition and transferral will be complete. Acquisition of these parcels and their transfer to BLM should be assured prior to ground disturbance within tortoise habitat. We recognize that discretion regarding sensitive ongoing negotiations with specific landowners may require that you not divulge this information in a public document such as an EIS. However, information about the specific parcels being acquired would assist the Service's assessment of potential effects to the Desert tortoise. Please forward this information to the Service's Utah Field Office.

In Utah, habitat should be acquired directly by KRGT or its agent for land acquisition. Payment of compensation fees to be used by other agencies for habitat acquisition is unacceptable mitigation. Regardless of whether ongoing negotiations permit KRGT to divulge which parcels of habitat are being acquired, please include in the FEIS the precise number of acres to be acquired within the Beaver Dam Slope Critical Habitat Unit in Utah, and the date by which such acquisitions will be completed.

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FA5-28 Thank you for your comment.

FA5-29 KRGT proposes to enter into a Memorandum of Agreement (MOA) with the FWS and The Conservation Fund, a third-party organization specifically identified by the FWS, through which KRGT could implement desert tortoise mitigation for impacts in Utah and Nevada. KRGT has acknowledged that the parcels recommended by the FWS (such as the Beaver Dam Slope Critical Habitat Unit) should be acquired first, if possible, and has forwarded the list of parcels to The Conservation Fund for evaluation of acquisition. Additionally, it is expected that the MOA would identify these parcels as high priority for acquisition. In California, KRGT proposes to provide monetary compensation to the CDFG through a third party. KRGT is currently in negotiations with the Desert Tortoise Preserve Committee (DTPC) to develop a third-party agreement between the DTPC, KRGT, and the CDFG outlining KRGT's commitment to use the DTPC for meeting desert tortoise compensation requirements on private lands crossed by the project. KRGT would pay compensation fees directly to the BLM for public lands crossed in California. If required, KRGT would post the necessary bond or letter of credit to guarantee with the BLM and the CDFG and/or the CSLC to ensure that mitigation would be implemented. Tables 4.7.2-1 and 4.7.2-2 present crossing lengths of critical habitat areas and acres of impact by loop, respectively, based on surveys conducted for the existing KRGT pipeline and the expected construction footprint for the proposed project. Final mitigation acreage would be based on actual construction impacts. As a result, final mitigation acreage cannot be presented in the EIS/EIR. The time frame for acquisition of tortoise mitigation areas is expected to be determined and included in the MOA, but likely would be required within 6 to 12 months following construction.

Page 4-125, section 4.7.2 (Federally Listed or Proposed Threatened and Endangered Species - Desert Tortoise): The following comments address proposed conservation measures for the desert tortoise referred to on page 4-125 of the DEIS, in Appendix R. These comments refer to either the Desert Tortoise Assessment Specific Conservation Measures or to the Maintenance Addendum to the Desert Tortoise Assessment.

FA5-30 Desert Tortoise Assessment Specific Conservation Measures: We recommend a conservation measure be incorporated for a qualified desert tortoise biologist to flag all areas proposed for surface disturbance in coordination with project engineers, including the alignment for all construction access routes. The objective of this measure is to avoid important desert tortoise habitat features wherever possible.

FA5-31 Measures 1 and 26: Replace with Measures 16 and 17 in the Maintenance Addendum.

FA5-32 Measure 2: Replace with Measure 1 in the Maintenance Addendum after replacing "pipeline inspections and maintenance" with "construction" in Measure 1.

FA5-33 Measures 6 and 10: Potential expansion of the ROW width, or inadvertent damage or destruction of habitat outside the ROW should be described in the FEIS in sufficient detail to allow evaluation of potential impacts to listed species or migratory birds. Simply notifying the Service as proposed in Measure 6 is not adequate (see comment on Measure 22 in the Maintenance Addendum below). ROW expansion and habitat damage or destruction outside the Row will be an important consideration in the development of the Service's biological opinion (BO).

FA5-34 Measure 7: Include: "and the jurisdictional Federal agency" after "FERC."

FA5-35 Measure 9: Delete the end portion of this sentence beginning with "unless."

FA5-36 Measures 10, 11, and 12: Please replace these measures with: "Within desert tortoise habitat, qualified desert tortoise biologists (QDTB) will conduct pre-construction surveys of the ROW as follows:

(a) Within suitable tortoise habitat: During the desert tortoise active season (March 1 through October 31), or when temperatures and environmental conditions are conducive to tortoise activity, as determined by the QDTB, two surveys will occur. The first survey will be conducted within 14 days, prior to surface-disturbance; and the second survey will occur immediately before surface disturbance. During the inactive season (November 1 through February 28, except as noted in [a]), one survey will occur within 72 hours of surface disturbance.

(b) Outside suitable tortoise habitat: During the desert tortoise active season (March 1 through October 31), or when temperatures and environmental conditions are conducive to tortoise activity, as determined by the QDTB, a survey will be conducted between 7 and 21 days prior to surface-disturbance. A second survey will occur immediately before surface disturbance unless the BLM and the Service

FA5-30 Conservation measure number 11 in appendix S of the final EIS/EIR (number 10 in appendix R of the draft EIS/EIR) includes the requirement that all important habitat features both in and within 50 feet of the construction right-of-way be flagged by an authorized biologist before construction to facilitate avoidance. This measure would provide an equivalent level of protection as the measure requested by the FWS.

FA5-31 The recommended revision has been made in appendix S.

FA5-32 The recommended revision has been made in appendix S.

FA5-33 As stated in conservation measure number 7 in appendix S of the final EIS/EIR (number 6 in appendix R of the draft EIS/EIR), all activities would be restricted to the right-of-way and approved access roads. Only in cases of unforeseen circumstances would other areas be disturbed by construction activities. As a result, it is not possible to determine the extent or locations of potential activities that may occur outside of the approved areas. Approval from the FERC and other applicable agencies would be required before any work could occur outside of approved areas. Additionally, in accordance with Section 7 of the Endangered Species Act, the FERC would determine when changes in the proposed project are significant enough to warrant re-initiating consultation with the FWS.

FA5-34 The recommended revision has been made in appendix S.

FA5-35 The recommended deletion has been made in appendix S.

FA5-36 The Agency Staffs believe conservation measure number 11 in appendix S of the final EIS/EIR (number 10 in appendix R of the draft EIS/EIR) provides additional protection for desert tortoises and the measure has been retained. Conservation measures 11 and 12 in appendix R of the draft EIS/EIR have been replaced with the recommended text (number 12 in appendix S of the final EIS/EIR). See also the responses to comments FA5-30 and FA5-33.

FA5-36 (cont'd) concur that a second survey is not required. During the inactive season (November 1 through February 28, except as noted in [b]), one survey will occur within 72 hours of surface disturbance." The jurisdictional Federal land manager shall determine which areas are suitable desert tortoise habitat.

FA5-37 Measure 14: Delete second sentence. In the third sentence add: "or natural" after "artificial" and add: "located 150 to 300 feet from the original burrow and be" after "will be."

FA5-38 Measures 16 and 17: Delete: "critical." Define or describe "spread" in Measure 16.

FA5-39 Measure 18: We request the tortoise-proof fence be buried 12 inches instead of 6 inches.

FA5-40 Measures 25, 26, and 28: We recommend deleting these measures because they do not minimize effects to the desert tortoise. Compliance and reporting requirements will be addressed in the Service's BO.

FA5-41 Measure 31: Replace: "KRGT" with "BLM" and delete: "BLM and". KRGT should include a statement of qualifications for each biologist proposed to be onsite.

FA5-42 Measure 33: Desert tortoises found above ground in harm's way should be relocated under a shrub in adjacent undisturbed habitat, 300 to 1,000 feet from the ROW.

FA5-43 Measure 37, last sentence: Add: "morning, mid-day, at the end of the day and" between "tortoises" and "prior" and add "unless directed differently by BLM or the Service" to the end of the sentence. Include specifications of the temporary tortoise-proof fence.

FA5-44 Measure 38: The description of the proposed action for the project should identify when and where KRGT anticipates dust control and watering would be required. The application of water and whether ponding occurs may attract desert tortoises to the project site. We recommend watering be minimized, and intensive monitoring of impacted species by construction activities be done by a specialist.

FA5-45 Measures 39, 40, and 41: Please replace with measures included in the Maintenance Addendum to the Desert Tortoise Assessment (December, 2001).

FA5-46 Measure 42: Preferably, one revegetation plan will be developed for the project which would address all states.

FA5-47 Maintenance Addendum to the Desert Tortoise Assessment: The five levels of maintenance described in the addendum may impact revegetation efforts. We suggest KRGT include additional information or measures to ensure that habitat recovery along the ROW would not be precluded by maintenance activities. For instance, sufficient monitoring for recovery of revegetated areas cannot be implied with one pass of a vehicle (i.e., Class I activity). That the vehicle's passing may impede KRGT's ability to achieve revegetation goals should also be considered.

FA5-37 The recommended revisions have been made in appendix S.

FA5-38 The recommended revisions have been made in appendix S.

FA5-39 This conservation measure (number 18 in appendix S of the final EIS/EIR, number 18 in appendix R of the draft EIS/EIR) has been modified to stipulate that permanent tortoise exclusion fencing at the Dry Lake and Goodsprings Compressor Stations would be buried between 6 and 12 inches deep with a minimum depth of 6 inches to account for areas with less than 12 inches of soil. The Agency Staffs believe this modification provides protection consistent with the FWS recommendation.

FA5-40 The recommended deletions have been made in appendix S.

FA5-41 This conservation measure (number 28 in appendix S of the final EIS/EIR, number 31 in appendix R of the draft EIS/EIR) has been modified to include the requirement that KRGT submit a statement of qualifications along with the names of the proposed authorized biologists to the BLM and the FWS, and, for that portion of the project in California, to the CSLC and the CDFG for approval. However, the suggested replacement of KRGT with BLM was not made. The Agency Staffs believe it is KRGT's responsibility to submit the names and qualifications of its proposed biologists to the appropriate agencies.

FA5-42 This conservation measure (number 30 in appendix S of the final EIS/EIR, number 33 in appendix R of the draft EIS/EIR) has been revised to include a requirement that tortoises be relocated a minimum of 300 feet from the right-of-way where access to land at that distance is allowed. In areas with restricted access, tortoises would be relocated the maximum distance from the right-of-way possible. Regardless of distance, relocated tortoises would be placed in the shade of a shrub.

FA5-43 This conservation measure (number 34 in appendix S of the final EIS/EIR, number 37 in appendix R of the draft EIS/EIR) and section 4.7.2 have been modified to require open excavations in tortoise habitat to be inspected periodically throughout and at the end of each work day and immediately before backfilling. Specifications for temporary tortoise-proof fencing have been added to appendix S and section 4.7.2. See also the response to comment SA6-6.

FA5-44 KRGT would apply water to the construction right-of-way for dust control and to the topsoil piles as necessary to prevent the loss of topsoil due to wind erosion. The application of water in desert areas could attract desert tortoises to the construction right-of-way. KRGT may be able to reduce the applications of water to the construction right-of-way by adding a non-toxic, organic tackifier to the dust control water in desert tortoise habitat during the tortoise active season. However, the effectiveness of tackifier is dependent on the structure and moisture holding capabilities of the soil. Frequently these soil properties can only be determined after the removal of the topsoil and application of water. KRGT does propose to apply tackifier to segregated topsoil piles in areas designated as highly susceptible to wind erosion. An authorized biologist would be assigned to patrol each area being watered. The biological monitor would patrol the area immediately after the water is applied and at approximate 60-minute intervals until the ground is no longer wet enough to attract tortoises. Section 4.7.2 and appendix S have been revised to include this information. A new section on dust control has been added as section 4.3.2.11.

FA5-45 Conservation measures 39, 40, and 41 in appendix R of the draft EIS/EIR have been replaced by a single conservation measure (number 36 in appendix S of the final EIS/EIR) requiring KRGT to adhere to the measures outlined in its maintenance addendum for all maintenance activities.

FA5-46 Due to differences in habitat and the specific requirements from each of the states crossed by the project, as well as the various field offices of the BLM and the FS, Dixie National Forest, it was necessary for KRGT to prepare five site-specific Reclamation Plans addressing reclamation of the right-of-way.

FA5-47 As described in the maintenance addendum included in appendix S, Class I activities involve routine maintenance that would not result in new surface disturbance. KRGT has indicated that these activities would be restricted to access roads to the right-of-way and aboveground facilities and that no other overland driving would be required. Class II through Class V maintenance activities would not be considered routine and would be necessary only when a problem is identified. Regardless of the extent or timing of a ground disturbing activity, KRGT retains responsibility for revegetation of the area disturbed during construction and any subsequent maintenance activity for the life of the pipeline.

FA5-47 (cont'd) In general, proposed measures that minimize a common effect to desert tortoise (e.g., pre-activity surveys) should be the same, or similar for both construction (i.e., in the Desert Tortoise Assessment) and maintenance activities (i.e., in the Maintenance Addendum).

Maintenance Addendum to the Desert Tortoise Assessment, Pages 5-11:

FA5-48 Measure 14: Replace "14 days" with "72 hours".

FA5-49 Measure 15: Delete second sentence.

FA5-50 Measures 22 and 36: As stated previously, all disturbance associated with this project should be identified in the description of the proposed action as part of the formal consultation package submitted to FERC. The biological opinion, when issued, will evaluate those effects to listed species described in the proposed action. Those activities that occur which are beyond the scope of the proposed action (e.g., additional surface disturbance) may require reinitiation of formal consultation. We recognize that KRGT may not know in advance the specific work sites that would be required to conduct maintenance and repairs. However, if maintenance activities are adequately described as part of the proposed action, the need to reinitiate consultation may be avoided. Therefore, we recommend that KRGT determine the total number of sites anticipated to be affected by each class of activity and the number of acres affected (critical and non-critical habitat) and identified measures KRGT would implement to ensure that revegetation efforts would not be impaired. Please include this information in the FEIS.

FA5-51 Measure 22: Replace with Measure 37 in the Desert Tortoise Assessment.

FA5-52 Measures 23 and 24: Include with proposed measures for construction activities in the Desert Tortoise Assessment and provide a brief description of the project assessments.

FA5-53 Measure 25: Define "biological values".

FA5-54 Measure 27: Delete; instructions for disposition of desert tortoise carcasses will be included in the biological opinion and should not be included as a minimization measure.

FA5-55 Measure 30: Delete; provisions in this measure have been previously stated.

FA5-56 Page 4-129, section 4.7.3 (Summary of Determinations of Effect for Federally Listed Species - Riparian Migratory Birds): This section again references the Service's recommendation that construction be completed prior to May 1. As previously mentioned, this recommendation refers to the breeding season of the southwestern willow flycatcher, and not to migratory birds in general. Many species of migratory birds begin breeding in March and April in the Mojave Desert, including the phainopepla, a species of concern. The pipeline route runs adjacent to a known phainopepla nesting site, and construction activities are proposed during the months of March, April, and May. These activities may disrupt phainopepla breeding behavior and lead to nest abandonment. We recommend the completion of construction activities by March 1st for this particular segment of the pipeline.

FA5-48 The recommended revision has been made to the maintenance addendum in appendix S.

FA5-49 The recommended deletion has been made to the maintenance addendum in appendix S.

FA5-50 See the response to comment FA5-33. Maintenance activities that require ground disturbance would only occur as necessary to realize unanticipated operation repairs. Should any excavation be required to complete repairs, it would be in a limited area and the construction and restoration methods would be consistent with those described in this EIS/EIR.

FA5-51 The recommended revision has been made to the maintenance addendum in appendix S.

FA5-52 Conservation measure number 23 in the maintenance addendum in appendix S of the EIS/EIR has been added to the conservation measures for construction. KRGT's environmental inspectors (EIs) and third-party compliance monitors representing the agencies would be present on every spread during construction. These individuals would ensure that construction activities are confined to the approved work areas. Therefore, conservation measure number 24 in the maintenance addendum in appendix S of the EIS/EIR has not been added to the conservation measures for construction as it would not provide additional protection to tortoises.

FA5-53 The recommended revision has been made to the maintenance addendum in appendix S.

FA5-54 The recommended deletion has been made to the maintenance addendum in appendix S.

FA5-55 The recommended deletion has been made to the maintenance addendum in appendix S.

FA5-56 See the response to comment FA5-27.

FA5-57 Raptors, page 4-132, paragraph 4: The DEIS indicates that the survey area for raptors would encompass a 1-mile-wide corridor "centered on the right-of-way." This buffer may not be sufficient to account for all nests that could be within a zone-of-disturbance from construction activities. Please note that buffers vary by species (Romin and Muck, 2002), and include these recommendations in the FEIS:

> (1) Recommended buffers may be 1/4 mile, ½ mile, or 1 mile. (2) The survey area should be large enough to encompass the 1.0 mile buffer (in suitable habitats) from the outside edge of any disturbed areas (including temporary work spaces).

FA5-58 Page 4-136, Table 4.7.3-2 (Burrowing Owl Survey Timing and Conservation Measures): This table refers to relocation of burrowing owls found along the pipeline route. Physically capturing or trapping owls, and relocating them without a permit would be a violation of the Migratory Bird Treaty Act and Nevada State law. However, artificial burrows may be constructed within the vicinity of occupied burrows and owls allowed to relocate on their own volition. Additionally, if it is determined an active burrow does not contain a nest, the burrow may be collapsed, provided identified owls are not injured during the excavation process.

FA5-59 Burrowing Owls (Table 4.7.3-2, page 4-136): The Service's Utah Field Office has received numerous letters from Ecology and Environment, Inc., (January 11, 2002, March 4, 2002, March 7, 2002) that identify more specific and additional mitigation measures than what is presented in the DEIS. However, there are some inconsistencies among the letters. In addition, the Service has further recommendations regarding some of the proposed mitigation measures, particularly regarding survey methodology and timing, and habitat availability for displaced owls. We are preparing written responses to these letters (through the Service) addressed to Ecology and Environment, Inc. with carbon copies to the involved Federal agencies. It is our understanding Ecology and Environment, Inc. will provide a final mitigation plan for the burrowing owls following receipt of our comments. We request the final mitigation plan be incorporated in the FEIS in its entirety, or as an appendix.

In the interim, we request surveys for burrowing owls be conducted in all proposed disturbed areas (including temporary work spaces) and inclusive of all areas within 1/4-mile of the outside edge of all disturbed areas. The DEIS also indicated that surveys would be conducted in late March 2002. The Service believes March is too early to adequately survey for burrowing owl occupancy in Utah. Occupancy surveys should be conducted during the peak of the breeding season, beginning no earlier than mid-April. Three site visits should be conducted along the survey route; one survey should be conducted within 30 days of construction. We request these, and other specific mitigation measures be detailed in KRGT's final mitigation plan. Also, Migratory Bird permits would be required for the relocation of any burrowing owls.

FA5-60 Bonneville cutthroat trout, page 4-145: We recommend that KRGT limit the use of riprap for bank stabilization. We recommend the use of native materials, root wads, rock barbs, and erosion blankets when practicable, to promote natural bank stabilization and the natural function of the

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FA5-57 See the responses to comments FA5-8 and FA5-12.

FA5-58 KRGT would obtain all applicable permits before trapping or relocating burrowing owls.

FA5-59 Surveys for burrowing owls were conducted in spring 2002 following survey protocols adapted from *Burrowing Owl Survey Protocol and Mitigation Guidelines* developed by the California Burrowing Owl Consortium, as well as through consultation with the FWS, the BLM, the UDWR, and the WGFD. Agency representatives were contacted during surveys to discuss survey results and to develop appropriate mitigation measures. Section 4.7.3 has been revised to include details of the surveys and proposed mitigation measures.

FA5-60 Section 4.7.3 has been revised to clarify KRGT's preference to use vegetative techniques for bank stabilization. Additionally, as discussed in section 4.7.3, KRGT would limit use of riprap to areas where flow conditions preclude effective vegetative stabilization techniques such as seed erosion control fabric and where bank scour is probable.

FA5-60 (cont'd) stream.

FA5-61 Virgin spinedace, page 4-145: Moody, Magotsu, and Beaver Dam should be identified as supporting resident populations of Virgin spinedace. Portions of these streams are perennial, and thus provide sufficient habitat for resident populations. Ephemeral segments allow fish movement into these reaches when water conditions are adequate. We believe it is inaccurate to conclude that Virgin spinedace are restricted to other portions of Beaver Dam Wash, rather than the proposed crossing because the crossing site is "devoid of riparian vegetation and generally dry." Please include this information in the FEIS:

> Virgin spinedace populations can expand into ephemeral segments of the creeks, including the proposed crossing areas, when water is present. At such times, these reaches are critical to population connectivity.

FA5-62 The DEIS states that Service concerns about impacts from dry crossing methods relate "primarily to the loss of habitat and potential for increased erosion of the streambank following construction." Please add this information to the FEIS:

> There is a need for additional conservation measures, and the flume method alone does not minimize potential impacts to resources in these streams. Impacts and corresponding conservation measures are applicable, regardless of waterflow levels in the creeks, at the time of construction. Potential impacts include riparian and instream habitat disturbances that occur during construction, where water is present, at the time of crossing (e.g., temporary loss of population connectivity, temporary changes in water quality, temporary influxes of contaminants from heavy equipment, unnatural sedimentation, direct mortality of individuals, destruction of riparian vegetation) and/or long-term impacts that are likely to occur whether water is present at the time of crossing or not (e.g., land scars, soil compaction that prevents revegetation, loss or alteration of instream structural habitat, unnatural sedimentation, invasion of noxious weeds, and/or loss of stream function related to unnatural stabilization of stream banks and future interrelated disturbances such as pipeline maintenance or expansion).

FA5-63 Two-toned Beardtongue, Page 4-146, section 4.7.3 (Federally Designated Special Status Species - Three-cornered Milkvetch, Yellow Two-toned Beardtongue, and Rosytongue): Plants, detected during surveys for the initial construction of the KRGP, but were not identified during surveys for the proposed expansion project include: Las Vegas bearpoppy (*Arctomecon californica*) and sticky buckwheat (*Eriogonum viscidulum*). It is possible these species still occur within the vicinity of the expansion project. We recommend surveying the areas where these plants were located in the past, especially outside of the ROW, and fencing or flagging these populations within the zone of influence, during construction activities, to prevent incidental impact to nearby plants. These two species, as well as threecorner milkvetch (*Astragalus geyeri* var. *triquetrus*) are considered critically endangered by the State of Nevada. A permit must be obtained from the State, through the Nevada Division of Forestry, prior to removal or destruction of these plants (NRS 526.260 - .300). Please include this information and these recommendations in the FEIS for

FA5-61 Section 4.7.3 has been revised to include this information.

FA5-62 Section 4.7.3 has been revised to include this information as well as additional mitigation measures KRGT would implement to provide additional protection to Virgin spinedace.

FA5-63 The Las Vegas bearpoppy and sticky buckwheat were included as target species during botanical surveys of the proposed project corridor. These species were not identified during those surveys and, consequently, were eliminated from further consideration. These species are listed in appendix Q of the draft EIS/EIR (appendix R of the final EIS/EIR). Additionally, the segment of the existing KRGT pipeline where the Las Vegas bearpoppy was identified during surveys for the existing pipeline would not be looped as part of the proposed project. A population of the Las Vegas bearpoppy was identified at the proposed Pabco Plant offloading site near Las Vegas. KRGT would fence off and avoid the majority of the areas within the offloading site containing this species. KRGT is currently consulting with the Nevada Division of Forestry regarding permits required for work at the offloading site.

FA5-63 (cont'd) these plant species:

FA5-64 Recent studies have indicated that two-toned beardtongue (*Penstemon bicolor*) hybridizes with the more common Palmer's penstemon (*Penstemon palmeri*). Palmer's penstemon was used in the seed mix in the Bird Springs Mountains during restoration efforts for the original pipeline project, and may have resulted in unnatural hybridization and introgression in populations of two-toned beardtongue. It is impossible to distinguish two-toned beardtongue from Palmer's penstemon when the plants are fruiting, and are only discernible during flowering.

To avoid collecting the wrong species, as well as to avoid further facilitating hybridization, we recommend the following measures: Along the pipeline, from 0.5 mile to southwest of Wilson Tank, to two miles northeast of Wilson Tank, in the Bird Spring Mountains where Palmer's penstemon was seeded, we recommend no reseeding of two-toned beardtongue (see measure "Reseeding").
For all other areas, reseeding of two-toned beardtongue should occur, but with the necessary stipulation that a pre-fruiting visit during the flowering season occurs to mark plants for seed collection later in the season. This will ensure that no individuals of Palmer's penstemon or individuals with hybrid characteristics are included in the seed collections. Individuals for seed collection should have smaller flowers than those of Palmer's penstemon; little or no inflation of the corolla throat; and should be either a pure pale yellow (*P. bicolor* ssp. *bicolor)* or a pure fuschia (*P. bicolor* ssp. *roseus*). Please note that some twotoned beardtongue collections at the University of Nevada, Las Vegas Herbarium, exhibit characteristics thought to be indicative of hybridization.

If you have any questions regarding these comments, please contact Jeri Krueger or Michael Burroughs at the Service's Southern Nevada Field Office in Las Vegas, Nevada at 702-515-5230 or the Region 6 NEPA Coordinator, Grady Towns, in Denver, Colorado at (303) 236-7400.

Thank you for your attention.

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

cc:
Director, OEPC, w/original incoming
State Director, BLM, Sacramento
Regional Director, FWS

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FA5-64 Section 4.7.3 has been revised to include these recommendations.

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE FLIGHT TEST CENTER (AFMC)
EDWARDS AIR FORCE BASE, CALIFORNIA

Mr. Richard A. Wood
Director, Environmental Management
5 East Popson Ave, Bldg 2650A
Edwards AFB, CA 93524-1130

APR 10 2002

Mr. Cy Oggins
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

SUBJECT: Kern River Gas Transmission Company Draft Environmental Impact Statement/Environmental Impact Report Kern River 2003 Expansion Project, (February 2002); CA Clearinghouse No. 2001071035; CSLC EIR No. 710; FERC/EIS-0144D, Docket No. CP01-422-000; BLM Reference No. CACA-43346.

1. Environmental Management has reviewed the Draft Environmental Impact Statement/Environmental Impact Report for the Kern River 2003 Expansion Project (February 2002) for the segment of the project on Edwards Air Force Base and has the following comments.

FA6-1 | a. Page 2-25, paragraph 2, line 10-11. The EIS/EIR states that topsoil in California would be removed and stored in piles capped by spoil materials from the trench to protect it from wind erosion. Why is the treatment of topsoil different for California? If the topsoil is covered with spoils, when it is time for the spoils to be put back into the trench, the topsoil will be mixed with the spoils and buried in the trench. Recommend the same measure for Edwards Air Force Base as for the other states.

FA6-2 | b. Page 4-101, paragraph 5, line 6. Recommend that 2 escape ramps for desert tortoise be constructed in trenches on Edwards AFB, 1 escape ramp when entering Edwards AFB and 1 before leaving the base boundary.

FA6-3 | c. Page 4-115. Correct spelling to Mohave ground squirrel.

FA6-4 | d. Page 4-124, paragraphs 3 and 4, c. Recommend that Edwards AFB receive 1:1 financial contribution for loss of tortoise habitat. With that Edwards can revegetate to offset the habitat lost.

FA6-5 | e. Page 4-127, paragraph 2, line 3. Excavations should be monitored/inspected for desert tortoise on a periodic basis during the day prior to being filled.

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FA6-1 KRGT would stockpile topsoil on Edwards Air Force Base (AFB) using the method requested by the AFB. The treatment of topsoil by covering it with the subsoil to protect it from wind erosion was specifically requested by the BLM California State Office for BLM lands in California. Subsequent to the draft EIS/EIR, KRGT provided additional measures that it would use to protect topsoil from wind erosion (*i.e.*, the application of water and/or a non-toxic organic tackifier on the topsoil pile). The BLM has agreed that implementation of this measure would be sufficient to reduce the potential impacts associated with wind erosion. As a result, topsoil and subsoil would be stockpiled separately on BLM lands in California, as well as the rest of the pipeline route. Section 4.2.3.1 has been revised to include this information.

FA6-2 As stated in conservation measure number 34 in appendix S of the final EIS/EIR (number 37 in appendix R of the draft EIS/EIR), KRGT would place tortoise escape ramps at 1-mile intervals in areas of open trench. KRGT's proposal would meet (or exceed) the AFB's request. Additionally, open trenches would be inspected for tortoises periodically throughout and at the end of each work day and before backfilling. These measures would adequately minimize impacts on desert tortoises.

FA6-3 The correct spelling of Mohave ground squirrel has been incorporated throughout the EIS/EIR.

FA6-4 See the response to comment FA5-29 regarding compensation for desert tortoise habitat. Additionally, KRGT would revegetate lands affected by construction in accordance with its site-specific Reclamation Plans.

FA6-5 See the response to comment FA5-43.

FA6-6 f. Page 4-127. All project personnel working on Edwards AFB shall receive a desert tortoise briefing.

FA6-7 g. Chapter 4. Impacts and mitigation for Mohave ground squirrel have not been addressed.

FA6-8 h. Page 4-225, paragraph 2 and 4-228, paragraph 4.10.6.a. Copies of all technical reports, record forms and other documentation for cultural and paleontological resources on Edwards AFB should be provided to the Base Historic Preservation Officer for review and approval prior to initiation of any work on base. All fieldwork and construction performed on Edwards AFB should be coordinated with the Base Historic Preservation Officer.

2. If you have questions, please contact Sonja Wilson, TYBRIN Corp, at (661) 277-5103.

RICHARD A. WOOD
Director, Environmental Management

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FA6-6 As presented in appendix S (conservation measure number 3), before initiation of construction, KRGT would present a sensitive resource education program to all personnel who would be onsite. The sensitive resource education program would be developed by biologists familiar with the requirements of the desert tortoise. KRGT would coordinate with Edwards AFB regarding any additional briefings.

FA6-7 Potential impacts on the Mohave ground squirrel and KRGT's proposed mitigation measures to reduce the potential impacts are discussed in section 4.7.4.

FA6-8 Copies of the requested reports have been provided to the Edwards AFB Historic Preservation Officer and KRGT has agreed to coordinate fieldwork and construction with the Edwards AFB Historic Preservation Officer.

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☒ APPLICATION ☐	ENGINEERING REVIEW COMMENTS		PAGE 1 OF 1 PAGE(S)
☐ CONCEPT	PROJECT: Kern River 2003 Expansion Project, Draft Environmental Impact Statement		
☒ % DESIGN	LOCATION: Edwards AFB Docket No. CP01-422-000		
☐ FINAL	AIR: KRGTC	ENGINEERING SPECIALTY & ORGANIZATION OR AREA OF EXPERTISE & ORGANIZATION	DATE: 5 Apr 02
			Joe Diorio 661-277-8304

	PAGE NO.	ITEM	COMMENTS (*Indicates mandatory items)	ACTION BY: ACTION CODE	ACTION BY: DISPOSITION
FA7-1	1-20	01	Table 1.6-1 Regulatory Agency is the Department of the Air Force. The three Agency Actions under Edwards Air Force Base include an Environmental Baseline Survey, Digging Permit, and Welding Permit The Digging Permit is issued by 95 CEG at 225 N. Rosamond Blvd, Edwards AFB, CA. There is no filing fee for this permit. Other permits, including a Permit for Industrial Wastewater Discharge and Road and Utility Outages may be required, if the proposed work includes discharging test water on Edwards property or the proposed work will require an Edwards access road or utility outage. Permit applications and instructions will be provided at the pre-construction conference.		
FA7-2	1-25 & 4-61	02	See Section 402, CWA, NPDES Permit or Approval. Has Lahontan Basin Regional Water Quality Control Board issued a permit regulating the discharge of hydrostatic test water to waters of the United States, including Edwards? See also preceding and following comment.		
FA7-3	4-62	03	Table 4.3.2-4 lists the quantity, source and withdraw location for water required for hydrostatic testing. The quantity and closest withdraw location near Edwards are 29 million gallons at Milepost 63.9 located across Highway 58 from the North Gate Entrance. The quantity of water is significant, and soils could be impermeable there. Test water might flow onto Edwards. Has KRGTC determined whether water discharge from that location will cause local flooding and disruptions?		
FA7-4	4-188	04	The 15 days between the pre-construction conference and prior to beginning any activities within Edwards is insufficient. Access could take longer. Pre-construction conference should take place no later than 30 days prior to construction activities on Edwards AFB lands. Also, the EIS EIR mentions the possibility of encountering ordnance. Edwards will possibly require its own EOD survey of the construction zones located on Edwards prior to beginning any activities.		
FA7-5	4-262	05	Electronic construction plans showing the pipeline alignment between where it enters and leaves Edwards property boundaries are required in a CADD format compatible with the 95 CEG GIS mapping system.		
FA7-6	–	06	There is an existing, inactive 4-inch, steel water service line from AFRL to Boron Prison that crosses the proposed KRGTC pipeline approximately 3 to 4 miles west of Kramer Junction and near MP 47. Interference currents from the proposed KRCTC pipeline will possibly corrode the water line and potentially cause a water leak. The existing pipeline is approximately 40 years old and the condition of that pipeline is unknown. Consider replacing a portion of the pipeline where it crosses the KRGTC pipeline.		

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FA7-1 Table 1.6-1 has been revised to include these permits.

FA7-2 KRGT is in the process of consulting with the California Regional Water Quality Control Board, Lahontan Region about approvals necessary for the Kern River 2003 Expansion Project.

FA7-3 The nearest hydrostatic test water discharge location to Edwards AFB would be approximately 19 miles from the base at MP 70.0. Therefore, it is unlikely that any discharge water would reach the installation. Additionally, KRGT would discharge through a dewatering structure that would be in a location having sufficient area for the water to disperse and percolate. The rate of release would also be controlled to prevent problems including ponding, erosion, and sedimentation at all discharge locations.

FA7-4 Section 4.8.6.1 has been revised to include these requirements.

FA7-5 KRGT has agreed to provide Edwards AFB with electronic construction plans of the pipeline alignment on base property.

FA7-6 Installation of the pipeline is not expected to interfere with the existing water line. Replacement of the existing water service line is outside the scope of this EIS/EIR.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
999 18TH STREET - SUITE 300
DENVER, CO 80202-2466
http://www.epa.gov/region08

April 15, 2002

Ref: 8EPR-N

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, D.C. to 0426

Re: Kern River Pipeline 2003 Expansion Project,
DEIS Review No. 020077

Dear Ms. Salas:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, Regions 8 and 9 of the Environmental Protection Agency (EPA) have reviewed and rated the *Draft Environmental Impact Statement (DEIS) for the Kern River 2003 Expansion Project*, dated February 2002. The project is a natural gas pipeline from southwestern Wyoming to Southern California. The 717 miles of new pipeline will be constructed in 13 loops with existing pipelines. Three new compressor stations will be added and six existing compressor stations will be modified.

Based on the procedures EPA uses to evaluate the potential effects of proposed actions and the adequacy of the information in the DEIS, the project will be listed in the Federal Register in the category EC-2 (EC - Environmental Concerns, 2 - Insufficient Information). This rating means that the review identified environmental impacts that should be avoided in order to fully protect the environment, and the DEIS does not contain sufficient information to thoroughly assess environmental impacts that should be avoided to fully protect the environment.

EPA's main concerns are impacts to wetlands and other waters of the U.S. and sediment impacts on water quality. The Kern River 2003 Expansion also presents a unique opportunity for evaluating the potential environmental impacts associated with construction and operation of the Kern River Gas Transmission Company (KRGT) pipeline expansion. The project is essentially the same as the pipeline completed a decade ago, and as such, lessons learned from the earlier project regarding environmental impacts, project design, and necessary mitigation should be included in the impacts analysis. We recommend that FERC, as well as all the other regulatory entities, use this opportunity to both document mitigation successes and failures, as well as develop information for conditioning of any permits for this project. Our detailed comments are enclosed.

If you have any questions about these comments, please contact Dana Allen at (303) 312-6870. We appreciate your interest in our comments.

Sincerely,

Elyana Sutin
Acting Director, NEPA Program
Office of Ecosystems Protection
and Remediation

Enclosure

cc: Cliff Rader, EPA HQ
Shanna Draheim, EPA R9
Cy Oggins, CSLC
Nancy Kang, COE UT
Matt Bilodeau, COE WY
Daren Rasmussen UTNR-DWR

Environmental Protection Agency - Regions 8 & 9 Comments
Kern River Pipeline 2003 Expansion Project DEIS

April 15, 2002

Wetlands The proposed Kern River 2003 Expansion Project will cross 63 wetlands in Wyoming and Utah. Nine of these wetlands will be crossed using the "horizontal directional drill" (HDD) method in order to avoid or minimize impacts. The other 54 wetlands will be crossed using an "open cut" method. The open cut method, which involves excavation and grading within a wetland, will impact more than 34.94 acres of wetlands throughout the project area. The project will result in the alteration (short and possibly long-term) of wetland vegetation.

FA8-1

1. 404 Permit – The FEIS should discuss more fully how the proposed project complies with implementing the Clean Water Act (CWA) Section 404(b)(1) Guidelines and NEPA 1500.2(c), 1501.1(b), etc. We recommend that the pipeline NEPA analysis and 404 permits be processed concurrently so that the NEPA decision does not preclude or limit *practicable* alternatives to be considered under the 404 permit requirements. Moreover, if significant wetland concerns arise during the permit review process, the Corps of Engineers (Corps) may require additional NEPA analysis. It is not clear from the DEIS if the alignments and construction methods will avoid as many wetland impacts as practicable. The FEIS should be updated with information from the Corps and appropriate state agencies, including impact avoidance or minimization through alignment modification or different construction techniques such as HDD.

FA8-2

2. Wetland Construction Criteria – It is unclear from the DEIS what criteria was used to determine the method of construction through wetlands. Fifty-four wetlands are proposed to be crossed using open cut techniques. Nine wetlands will be avoided using HDD crossings where the wetlands occur with major water bodies. It is not clear if additional impacts could be avoided using additional HDD construction. For example, there is an eight-acre wetland located within a mile of the Bear River crossing where HDD construction is already proposed. It is unclear why this method of avoidance was not selected also for the adjacent wetland, considering that the only criteria listed for the HDD technique was proximity to "major water bodies." While HDD is a more expensive and technically complex process, it is not an impractical alternative, particularly considering total project cost.

   The FEIS should explain the criteria used for determining the method of construction through wetlands and identify any additional wetlands that would be a high-priority for avoidance due to habitat value or size. As part of these criteria, additional information may be necessary to identify the function of the wetlands. Currently, the EIS groups the wetlands by state and type of wetlands without evaluating the functions of the wetland such as habitat.

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FA8-1 The Section 404 permits are being processed concurrently with the NEPA review in this EIS/EIR. KRGT has received its permit from the COE for work in Wyoming based on information that is provided in the draft EIS/EIR. The remaining states have been given the opportunity to review the draft EIS/EIR before permit issuance and will receive the final EIS/EIR. KRGT would comply with all permit conditions. Wetland crossing alignments and methods were based on KRGT's existing pipeline alignment, field surveys, alternatives analysis, and WWCM Procedures (see appendix F). The EIS/EIR presents the FERC staff's determination (no wetlands in California would be affected by the proposed project) that implementation of the measures in the project WWCM Procedures would minimize impact on wetlands to the greatest practicable extent. Pipeline route alternatives are discussed in section 3.0.

FA8-2 KRGT's wetland construction criteria are based on its WWCM Procedures (see appendix F). The WWCM Procedures provide an acceptable level of protection for wetland areas during construction and require mitigation measures to facilitate successful restoration of wetlands after construction. Use of the horizontal directional drill (HDD) method to cross wetlands is typically only considered for wetlands adjacent to waterbodies that can be avoided by the same HDD being conducted for the waterbody. In addition to being an expensive crossing technique, the HDD method cannot succeed without suitable subsurface geology. A 36-inch-diameter pipeline requires at least a 1,400-foot-long drill to obtain the required depth to allow the parabolic curvature of the pipeline. The HDD method also requires large temporary extra workspace areas to prefabricate the pipeline string to be installed under the feature and to contain the drilling equipment, parking, and truck turnaround area. Additionally, the HDD method has the disadvantage of requiring excavation of large mud pits on either side of the crossing, a concentration of equipment and equipment traffic in the staging areas, and continuous activity for days or weeks. Furthermore, there is always the possibility of an inadvertent release of drilling mud adjacent to or within the feature being crossed. Because of these disadvantages and the fact that all of the wetlands crossed by the project are palustrine emergent wetlands, the FERC staff does not consider the HDD method to be a practical alternative method for crossing the wetlands that are not associated with the Bear, East Branch Weber, or Weber River crossings. See also the response to comment FA5-19 regarding information on wetland functions.

FA8-3

3. The Utah Division Water Rights Stream Channel Alteration Permit is not in the list of permits. This is an important permit which will probably address the vast majority of stream crossings in Utah.

FA8-3 Table 1.6.1 has been revised to include this permit.

FA8-4 4. Springs – On page 4-44, in the discussion of the wells and springs, there is a commitment to monitor and mitigate water supply losses. We recommend that the monitoring of the springs also include detailed biological monitoring of the aquatic fauna as well as the riparian community. These isolated springs can foster unique terrestrial and aquatic communities which need to be documented for the regulatory agencies before actions are taken which may adversely affect biological conditions. Depending on the community, mitigation may need to be developed prior to permit issuance. These communities have to be addressed on a case-by-case basis. As discussed above, this analysis cannot be delayed until after the NEPA process, because the 404 (CWA) permit decisions need to consider these potentially unique habitats.

5. Wetlands and Water Body Construction and Mitigation Procedures (WWCMP), Appendix F – BMP and procedures to address wetland and aquatic impacts.

FA8-5 a. The WWCMP refers to documents (e.g., sections IV.B and VI.B refer to FERC's procedures) which are not available to the reader. Describing the pertinent sections of the FERC procedures as they apply to this Plan would improve the reader's understanding of the mitigation procedures.

FA8-6 b. The agency coordination and notification procedures are confusing.
   i. In the preconstruction filing portion (section II), it appears that the only streams which will receive detailed notification are those perennial streams greater than 10 feet wide. At a *minimum* this standard should be changed to all streams with water present during construction, since this notification appears to be for the required permits.
   ii. The notification procedures appear to be too short and inconclusive. For example, the notification to the Corps and the 401 certifying agencies does not have a time frame. This needs to be corrected to assure that all permitting agencies have adequate time to process the permits under their standard procedures and time frames.

FA8-7 c. Under the general crossing procedures, there is a presumption that the Nationwide Permits (NWP) will apply. It is possible that specific conditions may need be applied to crossings in perennial streams expanding the conditions found in the NWP. This document should not limit the conditions which may be applied on a case-by-case basis.

FA8-8 d. In section VI.E - Post-Construction and Maintenance – The post construction success criteria for native species of "50% of the pre-project diversity" is too low. The criteria need to be more consistent with the impact analysis which identified only short-term impacts (i.e., quick recovery) on wetlands. The criteria should approach 100% return of native diversity. The native species cover criteria of 80% should be expanded to define the condition of the remaining 20% cover. For example is "bare soil" acceptable for the remaining 20%, or does the remaining 20% need to be covered with appropriate nurse crops or native upland species?

FA8-9 e. Page F-12, #4 states that wetland revegetation plans will be "available upon request." These plans should be included in the FEIS for public evaluation and approved by the appropriate agencies prior to construction in wetland areas.

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FA8-4 KRGT's field survey and wetland delineation did not identify any isolated springs in the construction right-of-way. However, to minimize the possibility of adverse impact on such resources adjacent to the right-of-way, if any are identified within 150 feet of the construction work area, the springs and associated riparian communities would be delineated using current COE methodology and subjected to biological monitoring during construction. KRGT would file a report with the FERC and the CSLC (for springs in California) within 30 days after placing the facilities in service identifying any project-related impact on the riparian community or diminishment of value to wildlife and the remedial action taken to address any such impact. Section 4.3.1.2 has been revised to include this information.

FA8-5 Although KRGT's WWCM Procedures (see appendix F) are based on the mitigation measures contained in the FERC's Wetland and Waterbody Construction and Mitigation Procedures (FERC Procedures), they are project specific. KRGT's WWCM Procedures and the FERC's Procedures are identical except for a few differences that generally reflect the arid western climate crossed by the project. References to the FERC in KRGT's WWCM Procedures have been deleted.

FA8-6 The WWCM Procedures (see appendix F) identify general baseline requirements and do not take the place of more specific requirements identified in permits for the project. KRGT would be required to implement the specific notification requirements identified in each applicable permit.

FA8-7 Although KRGT's WWCM Procedures (see appendix F) specifically reference compliance with the nationwide permit program terms and conditions, as stated in sections 4.3.2.4 and 4.4.3, KRGT would comply with the COE's Section 404 permit conditions and state-issued Section 401 water quality certifications or waivers. Additionally, KRGT has modified its proposed crossing methods for several waterbodies to accommodate specific agency requests and permit requirements.

FA8-8 KRGT has adopted the FERC standards included in its WWCM Procedures (see appendix F). The site-specific Reclamation Plans contain more detail on success criteria (see section 4.5.2.1 and the California Reclamation Plan (appendix V)).

FA8-9 Page F-12, #4 specifies that at a minimum, KRGT would temporarily revegetate the right-of-way in wetlands with annual ryegrass and allow natural revegetation to occur. Consulting with the appropriate agencies to develop plans for additional plantings could further minimize impacts on affected wetlands. Implementation of KRGT's WWCM Procedures and compliance with conditions included in the COE Section 404 permit and state-issued Section 401 water quality certifications or waivers would reduce impacts on wetlands to less than significant levels.

FA8-10 | 6. Wetland restoration – The FEIS should provide data on restoration success from the construction of the original pipeline as an indicator of the likely time frame and success of wetland restoration. Did all wetlands fully recover from the previous construction within the first three to five years? How well did the previous reclamation plans work?

Surface Water The DEIS states that 32 perennial and more than 300 intermittent water bodies will be crossed by the proposed pipeline expansion. Most of these water bodies will be crossed using open cut methods.

FA8-11 | 7. Erosion/sediment impacts – The open cut method of water body crossing is expected to result in the most significant environmental impacts. Four of the water bodies which will be crossed using open cut methods are listed as "impaired" under Clean Water Act Section 303(d) due to high levels of sediment and/or suspended solids (among other pollutants). Impacts from sediment caused by open cut construction could further impair these water bodies. The DEIS does not discuss whether the proposed project will hinder designated uses for these waters. Also, the document provides no discussion of how the impacts to these impaired waters could be avoided (e.g., using HDD, flume or dam/pump methods). The FEIS should include a discussion of how the proposed project complies with CWA goals to establish and meet water quality criteria for designated uses for water bodies. For any impaired water body crossed by the proposed pipeline, the FEIS should discuss whether the proposed crossing technique will exacerbate existing water quality conditions (even in the short term), and how those impacts will be avoided or mitigated. How long will the construction cuts be in place, both on average and at a maximum (e.g., 30 days, one day)?

FA8-12 | 8. The DEIS discusses the proposed mitigation measures for water body impacts starting on page 4-54. We recommend expanding the mitigation measures for controlling sediment/erosion. A proposed mitigation (page 4-55, second bullet) "requires maintenance of temporary erosion and sediment control measures throughout construction until stream banks and adjacent upland areas are stabilized." It is not clear if these erosion control measures will be kept in place and maintained long enough to protect water quality. Typically, the term "stabilized" means the area has been graded so that the slopes are stable, immediately following construction. Under this definition, the "stabilized" condition is temporary, lasting until a rainstorm or quick snowmelt creates erosion channels. The FEIS and mitigation procedures need to add provisions to monitor and repair the construction area in a timely manner as erosion channels occur and adding additional sediment controls if necessary. Remediation of erosion problems needs to continue until vegetation or the soil crust has been reestablished.

FA8-13 | 9. Criteria for Stream Crossing Construction Method – The DEIS provides only a cursory discussion of impacts to water bodies from the use of other crossing methods such as HDD, flume, or dam/pump. HDD would be the least intrusive method and will be used to cross several "sensitive" water bodies in order to avoid impacts. However, the DEIS does not provide any information on the criteria for determining how each water body will be crossed. How were sensitive water bodies identified? What criteria determined whether a water body

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FA8-10 See the responses to comments CO8-1 and FA8-27. In addition, KRGT's WWCM Procedures (see appendix F) include mitigation that was not required during construction of KRGT's existing pipeline. Implementation of KRGT's WWCM Procedures, along with specific permit conditions, would aid in the successful restoration of wetlands.

FA8-11 Of the four impaired waterbodies proposed to be crossed using the open-cut method, only the Sevier River crossing at MP 224.4 would have the potential for additional impairment during construction. KRGT would minimize the potential for impacts on the Sevier River by completing the crossing in accordance with its WWCM Procedures (see appendix F), limiting in-stream work, and stockpiling spoil adjacent to the waterbody rather than sidecasting it in the river. See section 4.3.2.6 for additional discussion on the Sevier River crossing. The Hams Fork River at MP 0.7 would be crossed using the open-cut method only if the waterbody is dry at the time of crossing. If flowing water is present, KRGT would use the flume method to cross this waterbody. Use of the flume method would limit potential impact on water quality to the short duration of installation and removal of the upstream and downstream water barriers associated with the flume. KRGT would use the bore method to complete the Bingham Creek crossing at MP 147.0 unless documentation from the Utah Division of Environmental Quality (UDEQ) is obtained to verify that the waterbody no longer contains contaminated sediments (section 4.3.2.9 has been revised to include this information). At the crossing locations of the Mojave River at MPs 676.8 (Goodsprings Loop) and 18.0 (Daggett Loop), the waterbody is a series of braided washes that rarely flow water. The waterbody is expected to be dry at the time of crossing so impacts on water quality are not anticipated. As a result, construction through these waterbodies is not expected to affect water quality, further impair the waterbodies, or affect the designated uses of these waterbodies.

FA8-12 This mitigation measure is summarized from KRGT's Upland Erosion Control, Revegetation, and Maintenance Plan (UECRM Plan) (see appendix E) (section V.F.2., number 5). KRGT's UECRM Plan requires that temporary sediment barriers be removed from an area when the right-of-way condition is similar to adjacent undisturbed lands and revegetation is successful (section V.F.2., number 6 and section VIII.A., number 6). KRGT's proposed construction methods and erosion control measures are consistent with this recommendation.

FA8-13 KRGT's proposed crossing methods were developed in direct consultation with the BLM, the FS, the COE, and the state resource agencies that permit stream crossings in Wyoming, Utah, Nevada, and California. For each waterbody identified as a concern by an agency, KRGT developed a site-specific crossing procedure in consultation with the agency.

FA8-13 (cont'd) would be crossed by HDD, flume or dam/pump methods? In reading the document, it is unclear how the "sensitivity" of a water body and a method of crossing are matched. For example, Muddy River in Nevada is proposed to be crossed using the flume or dam/pump method. This river is listed as impaired on the state's CWA 303(d) list, may have contaminated sediments, and is known to support two endangered species. The FEIS should include a discussion of the criteria used to select the method of stream crossings.

FA8-14 10. The FEIS should include a more substantive discussion of techniques and potential environmental impacts of the flume and dam/pump methods of stream crossing. In particular, the document should address how these methods would avoid impacts to water bodies that are designated as impaired.

FA8-15 11. Riparian Habitat – The DEIS states that in crossing 63 wetlands, 32 perennial and 300 intermittent water bodies, there will be some short-term impacts to riparian habitat. The proposed mitigation plan calls for leaving a 15-foot wide riparian corridor whenever feasible. This distance is generally insufficient for avoiding impacts to riparian habitat and water bodies.

FA8-16 12. "Hard" Erosion Controls – The DEIS discussed the use of rip-rap and gabions to control erosion and stabilize banks at many of the crossings. This seems inconsistent with the overall goal of mitigation of returning the construction site to natural/preconstruction conditions. The use of "hard" structures, such as rip-rap, tends to inhibit natural or active revegetation of riparian corridors, and if used extensively throughout the project area, could result in the loss of valuable riparian habitat. The FEIS should disclose how many linear feet or acres of riparian area are estimated to need "hard" erosion control. We also recommend that FERC include permit conditions for the project which require KRGT to use natural erosion control techniques (e.g., fiber mats, willow plantings, active revegetation of slopes) whenever feasible. When natural techniques are not deemed feasible, KRGT should submit to FERC and relevant resource agencies documentation of the reasons why rip rap or other "hard" structures must be used to stabilize banks.

Revegetation

FA8-17 13. Revegetation Criteria – The Upland Erosion Control, Revegetation and Maintenance Plan (UECRMP), Appendix E appears to be inconsistent with the DEIS, section 4.5.2. For example, the third bullet on page 4-82 describes successful revegetation in year five as "up to 40% cover is achieved over 80% of the right-of-way." Section VIII.A.#6 on page E-13 of the UECRMP states, "Restoration will be considered successful if the right-of-way surface condition is similar to adjacent undisturbed lands, revegetation is successful, and all temporary erosion control devices are removed." We recommend that the FEIS develop consistent, more detailed revegetation criteria, considering both coverage and species diversity and preconstruction conditions. As discussed above in the wetlands comments, we recommend that additional information be provided to describe what is meant by coverage and state of vegetation in the 20% of the land without coverage.

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FA8-14 The flume and dam and pump methods are described in section 2.3.2. Of the seven waterbodies listed as impaired in table 4.3.2-2, three would be crossed using either the flume or dam and pump method (Chalk Creek at MP 66.8, South Fork Creek at MP 81.1, and the Muddy River at MP 477.1). The impacts of the flume or dam and pump method on these waterbodies are described in section 4.3.2.6. A comparative analysis of the various stream crossing techniques used by the pipeline industry is outside the scope of this EIS/EIR.

FA8-15 The measure referred to in this comment does not address the crossing of wetlands but rather the buffer that KRGT would leave between a waterbody and the right-of-way in areas where the pipeline would be parallel to, but not cross, a waterbody. When a waterbody with riparian vegetation is crossed, KRGT would place temporary extra workspaces 50 feet from the edge of the waterbody and would limit clearing of vegetation between temporary extra workspaces and the edge of the waterbody to the approved construction right-of-way unless otherwise approved by the Agency Staffs. Where possible at wetland crossings, KRGT would cut vegetation at ground level leaving root systems in place. Additionally, KRGT would revegetate riparian areas as soon as possible with species and at densities agreed upon by applicable resource agencies.

FA8-16 Section 4.3.2.4 has been revised to clarify KRGT's preference to use natural erosion control techniques for bank stabilization where feasible.

FA8-17 The UECRM Plan (see appendix E) identifies general, baseline requirements that KRGT would implement during construction of the project and does not take the place of the more specific requirements identified in its site-specific Reclamation Plans. KRGT's site-specific Reclamation Plans take into account the differences in vegetative cover found along the length of the pipeline route and is the reason there are five plans for the project instead of one project-wide plan. KRGT has revised its site-specific Reclamation Plans to include more specific success criteria developed in consultation with the BLM, the FS, and state agencies. Section 4.5.2.1 has been updated to incorporate these revisions. Because most of the pipeline route is in an arid climate, 100 percent vegetative coverage would not be achievable or consistent with the surrounding landscape.

FA8-17 (cont'd)

a. For the criteria in the DEIS, more detail is needed to describe the desired conditions for revegetation. It is not clear what is meant by "coverage." The growth patterns and types of plants do not readily translate into measuring 80 percent in all the habitat types that will be affected by the project. It would appear that the desired conditions for the Mojave Desert would be dramatically different from rangeland in Wyoming. How will this criteria take into account rocks and the sparse nature of desert plants? We are also concerned by the criteria of only "40% coverage" over 80% of the right-of-way. In areas with more rapidly growing species, 100% coverage may be a reasonable criterion. Additionally, only covering 40% of previously disturbed soil will leave prime habitat for invasive, noxious weed establishment.

b. The criteria in the UECRMP are flexible enough to cover the variety of ecosystems for this project. However, there appears to be too much latitude in the criteria, which allows a broad range of conditions to be considered complete reclamation. For example, will revegetated areas need to achieve the same plant species diversity and densities as the adjacent areas?

FA8-18

14. The project proponent plans to complete reclamation activities within three to five years. However, according to the DEIS some areas will take up to 50 years to revegetate. The FEIS should disclose if any additional reclamation will be required after five years to continue fostering the return of the construction site to previous conditions? Who will be responsible for monitoring and implementing the remaining reclamation, such as noxious weed control, erosion damage repair, or additional plantings for areas with low species diversity or revegetation failures?

FA8-19

15. Successful Mitigation – The EIS should analyze how well the vegetation mitigation plans have worked from the first pipeline construction. It has been a decade or so since the first pipeline was constructed. Has the vegetative cover reached 100% of the desired conditions for coverage and species diversity? The impacts analysis on vegetation should incorporate a description of the successes or difficulties in remediating construction activities from the previous pipeline construction. Rarely does such an excellent opportunity exist to evaluate how well mitigation and reclamation standards work in advance of project impacts.

FA8-20

16. The noxious weed control plan described in the DEIS proposes to inspect and control noxious weeds every other year for five years. We recommend that the construction be inspected more frequently, perhaps every year for the first three years and then the fifth year. The second growth season is an especially important time to control weeds, particularly since there are already existing areas of weed infestations from the previous pipeline construction. A mechanism also needs to be developed for continuing noxious weed control efforts if infestations are found in the year five inspection.

Air Quality

FA8-21

17. Effects on the Climate – A short section should be added to the FEIS discussing potential impacts to the global climate. The section should include development of oil and gas, as emissions directly from the project and through the indirect act of producing fuels that will

Federal 8

FA8-18 KRGT has revised its site-specific Reclamation Plans to include more specific success criteria developed in consultation with the BLM, the FS, and state agencies. Section 4.5.2.1 has been updated to incorporate these revisions. An environmental compliance inspection and mitigation monitoring program would be implemented for the Kern River 2003 Expansion Project (see section 2.5). Implementation of this program would ensure that KRGT complies with the requirements placed on the project by the FERC, the CSLC, the BLM, the FS, and other regulatory agencies. Should the success criteria not be met within the specified time frame, KRGT would be responsible for implementing remedial work to meet the required criteria and would extend its monitoring program (see section 4.5.2.1). As stated in section 2.5, the BLM would require a bond, or other security, to ensure that KRGT would comply with the terms and conditions of the BLM's right-of-way grant, which applies to all Federal lands.

FA8-19 See the response to comment FA8-27.

FA8-20 KRGT proposes bi-annual monitoring of noxious weeds, concurrent with reclamation monitoring, for 5 years. In addition to bi-annual monitoring, KRGT would monitor, and treat as necessary, areas of known infestations annually. Although KRGT's formal monitoring period would be complete in 5 years, as part of its maintenance requirements, KRGT would monitor and treat noxious weeds for the life of the project (see section 4.5.4).

FA8-21 The discussion on greenhouse gas emissions in section 3.1 has been revised to include the estimated quantity of carbon emitted by burning 885,626 dekatherms per day (Dth/d) of natural gas.

FA8-21 (cont'd)

ultimately be burned contributing to the release of greenhouse gases. Carbon dioxide (resulting from the burning of natural gas) and methane (released during production activities) are the two largest contributors to global greenhouse gas emission levels. The production of natural gas likely impacts climate change, and the most efficient mitigation is for individuals to reduce their dependence on fossil fuels by using renewable energy sources. We do not believe that a short disclosure of these potential effects is beyond the scope of a discussion of project impacts.

FA8-22

18. Page 4-229, Section 4.11.1, Significance Criteria – The definition of significance, as defined in the NEPA regulations at 40 CFR 1508.27, is much broader than compliance with environmental regulations. No new facilities, whether federal or private, are permitted to violate Federal or State air quality standards or incrementally cause the failure of the State to meet these standards. Therefore, writing an environmental impact statement stating that laws will not be violated, does not help the public or the decision-maker evaluate the significance of the air impacts. Significance is partly determined by the amount of public or government interest in the natural resource. Air quality effects on visibility, climate change, acid rain, and odors are examples of impacts that could be considered significant depending on the air quality classification of the area (i.e., Class I or Class II) and the proximity of residents to the project.

FA8-23

19. Table 4.11.1-3 on page 4-232, shows that daily air emissions from construction will exceed the significance thresholds for particulate matter, nitrogen oxides and carbon monoxide. The mitigation measures for reducing these air pollutants are also listed on page 4-232. It is not clear from the DEIS which of the mitigation measures would be the most efficient in reducing air pollution and level of implementation. The final EIS should include a discussion of the mechanism(s) for requiring contractors to implement these mitigation measures and the potential level of improvements. For example, will any the mitigation measures reduce construction air impacts to below the significant thresholds?

FA8-24

20. There appears to be an error in Table 4.11.1-3 for California emissions of particulate matter. We estimate the amount to be 139 instead of 404 ppd.

Reliability and Safety

FA8-25

21. It is not clear from the DEIS if additional valves are recommended near faults in the vicinity of homes or businesses. The last bullet on page 4-15 states that KRGT will design for: "MLVs located upstream and downstream of the faults with actuators." On page 4-17, the Agency staff recommends installing additional automatic isolation valves around the faults in California to achieve a minimum spacing of 5 miles. However, the DEIS does not discuss whether additional valves are recommended to reduce potential impacts for the faults located in Utah. Table 4.1.4-3 on page 4-16 lists several towns located along faults which have a distance of greater than 5 miles from the nearest valve and/or the valve is not automated. The FEIS should explain the desired valve placement and whether the valves should be automatic for faults located in California and other states.

Federal 8

FA8-22 It is reasonable to use the standards or thresholds of impact developed by other agencies in this NEPA analysis to determine whether specific impacts are significant and require mitigation. Section 4.0 explains the purpose of the significance criteria that were designed by the lead agencies for this analysis. To summarize, the criteria are used as a tool to assist the agencies in assessing the adequacy of KRGT's proposed mitigation. Specifically, it is primarily in those instances where an impact may continue to exceed the significance criteria after KRGT implements its proposed mitigation that there is a need for the Agency Staffs to develop mitigation over and above the project sponsor's proposed mitigation.

FA8-23 To ensure compliance with project mitigation measures, an environmental compliance inspection and mitigation monitoring program would be implemented during the construction of the Kern River 2003 Expansion Project (see section 2.5). Full-time third-party compliance monitors representing the agencies would be present during construction of this project. The Agency Staffs would also conduct inspections of construction activities. Implementation of this program would ensure that KRGT and its contractors comply with the requirements placed on the project by the regulatory agencies. As stated in section 4.11.1.2, KRGT's implementation of its proposed emission control measures as well as those specified by local Air Quality Management Districts would reduce impacts associated with construction emissions to less than significant levels.

FA8-24 The construction emissions listed in table 4.11.1-3 were checked and no errors were found. The fugitive emission value of 358 pounds per day is based on the construction activities that would take place along an active portion of the pipeline route. Therefore, this value is not proportioned based on the total pipeline distance.

FA8-25 Based on the findings of a Geohazard Assessment conducted in California by KRGT at the request of the CSLC since publication of the draft EIS/EIR, the Agency Staffs have determined that KRGT's design criteria for fault crossings as described in this EIS/EIR would adequately minimize the potential impacts associated with fault crossings, in part due to low population density (DOT Class 1 locations) at the majority of fault crossings. As a result, the Agency Staffs' recommendation for additional isolation valves at fault crossings in California has been removed (see section 4.1.4.1). Mainline valve (MLV) spacing for the entire pipeline, including at fault crossings, would comply with Title 49 CFR Part 192. In Utah, with the exception of the West Valley Fault, other faults crossed by the pipeline are in DOT Class 1 locations. MLV placement on both sides of the West Valley Fault (DOT Class 3 location) achieves the spacing requirement for a Class 4 location, which exceeds the DOT requirements.

FA8-26 22. Safety Buffer – The FEIS should consider the cumulative impacts of future development along the pipeline corridor on safety and opportunities for additional buffer areas between the pipeline and residential development. Currently, except for the Salt Lake City (SLC) metropolitan area and about a dozen other communities, the pipeline is in rural or completely undeveloped areas, minimizing safety concerns. During the fifty-year life of the pipeline, growth will continue along the Wasatch Front (SLC) encroaching upon the pipeline corridor. It also appears that some communities along the Daggett Loop in California have the potential to grow toward the corridor. Although the currently proposed right-of-ways meet regulatory requirements and protect nearby residents, it appears that preserving an undeveloped corridor/buffer along the pipeline right-of-way would be desirable to reduce potential impacts even further. Page 4-17 references a study which estimates potential impact radii of 860 and 1000 feet for 36-inch and 42-inch diameter pipelines, respectively. The right-of-way for the proposed pipeline is 50 feet. Additional buffer (mitigation) could be obtained through county planning and zoning efforts, creating permanent open space or rights-of-way.

General Comments

FA8-27 23. As discussed above, the Kern River 2003 Expansion presents a unique opportunity for evaluating the potential environmental impacts associated with construction and operation of the KRGT pipeline expansion. The construction of a new pipeline generally within the same right-of-way as the earlier pipeline provides full field verification of all previous mitigation and reclamation practices. We recommend that the FEIS include a discussion of the environmental impacts that occurred during construction of the original pipeline and of the mitigation measures which were used to reduce those impacts. For example, what types of problems occurred with the original pipeline construction, and how they have been addressed or mitigated? Were mitigation and reclamation fully successful? How were impacts and restoration activities monitored? How has this information been incorporated into project design and route decisions for the current proposed expansion?

FA8-28 24. The FEIS should include aerial photographs which provide a picture of how the project area was impacted during construction of the original pipeline and of how the right-of-way has been restored. These photos have been provided to the Corps as part of the CWA Section 404 permit process, and should be included in the FEIS for evaluation by the public and other decision makers.

FA8-29 25. Regarding page I-21, it should be noted that the pipeline crosses two EPA regions, Regions 8 and 9.

FA8-30 26. The DEIS focuses on the regulatory aspects of environmental impacts for several resources without addressing the impacts which are not covered by regulation. Not all significant environmental impacts are directly regulated, and many impacts are only partially regulated. Also, the regulations are frequently based on a minimum standard relating to mortality or irreparable harm. Significant environmental impacts can still occur when conditions degrade

Federal 8

FA8-26 The proposed 50-foot-wide permanent right-of-way acts as a safety buffer around the pipeline to prevent encroachment on the pipeline from neighboring developments. Development beyond the 50-foot permanent right-of-way would not be prohibited. While the impact of a catastrophic pipeline incident could extend more than 50 feet, the likelihood of an incident is extremely low (see section 4.12.3 and table 4.12.3-2). In addition, Title 49 CFR Part 192.609 includes requirements for pipeline companies to implement studies and revisions of the pipeline design when an increase in population density adjacent to the right-of-way indicates a change in class location for the pipeline. Class locations are defined in section 4.12.1. Some of the required measures under Title 49 CFR Part 192.609 include reviewing the hoop stress at which the pipeline is operating; comparing the design, construction, and testing procedures followed during the original construction and those required for the current class location; and reviewing the physical condition (if possible) and operation and maintenance history of the pipeline segment. Based on the results of the reviews, the maximum allowable operating pressure could be changed based on the requirements found in Title 49 CFR Part 192.611. Construction-related impacts on existing houses within 50 feet of the construction work area are discussed in section 4.8.4. Local county planning and zoning departments could use this EIS/EIR to restrict future encroachment toward the pipeline.

FA8-27 The purpose of this EIS/EIR is to evaluate the environmental impacts associated with the Kern River 2003 Expansion Project. In order to do so, information gathered during construction of KRGT's existing pipeline was used to determine potential environmental impacts associated with the currently proposed project and to determine appropriate mitigation measures to reduce the significance of these impacts. As discussed in section 4.5.2.1, KRGT would implement site-specific Reclamation Plans for the Kern River 2003 Expansion Project. These plans are based on the original reclamation plans that were prepared for the construction of KRGT's existing pipeline but include updated technical standards and incorporate modifications/ improvements to address comments from various land management agencies about the adequacy of the previous plans.

To ensure compliance with the site-specific Reclamation Plans and other mitigation measures, an environmental compliance inspection and mitigation monitoring program would be implemented during construction of the Kern River 2003 Expansion Project (see section 2.5). Implementation of this program would ensure that KRGT follows the requirements placed on the project by the FERC, the CSLC, the BLM, the FS, and other agencies.

FA8-28 Aerial photographs covering the entire pipeline route are too voluminous to be included in the EIS/EIR. Aerial photo-based alignment sheets were included in KRGT's FERC application, which is part of the public record for the project. KRGT's FERC application is available for viewing on the FERC Internet web site (http://www.ferc.gov). (Using the "RIMS" link, select "Docket #" and follow the instructions (call 202/208-2222 for assistance).) KRGT's FERC application is also available for viewing at several public libraries centrally located along the proposed route as described in the Notice of Intent/Notice of Preparation and Notice of Availability/Notice of Completion issued for the project.

FA8-29 Table 1.6-1 has been revised.

FA8-30 The Agency Staffs believe that all environmental impacts associated with the proposed project, whether directly or indirectly regulated, are adequately addressed in the EIS/EIR.

FA8-30 (cont'd)

to the level of these environmental regulations. For examples see the air and safety buffer comments above.

Comments on the Draft EIS/EIR and Responses

STATE AGENCIES

California Regional Water Quality Control Board
Lahontan Region

Winston H. Hickox
Secretary for Environmental Protection

Victorville Office
Internet Address: http://www.swrcb.ca.gov/rwqcb6
15428 Civic Drive, Suite 100, Victorville, California 92392
Phone (760) 241-6583 • FAX (760) 241-7308

Gray Davis
Governor

March 14, 2002

WDID No. 6B360111001

Ms. Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First St., N.E., Room 1A
Washington, DC 20426

KERN RIVER 2003 EXPANSION PROJECT, FEBRUARY 2002 DRAFT ENVIRONMENTAL IMPACT/ENVIRONMENTAL IMPACT REPORT (EIS/EIR), COMMENTS ON CALIFORNIA LOOPS, SAN BERNARDINO AND KERN COUNTIES

The Lahontan Regional Water Quality Control Board staff (Board staff) received the referenced document on February 25, 2002, and has the following comments.

Board staff recommends the following additions be included in the "final" EIS/EIR:

SA1-1 1. Volume II, Appendix E, Section II Pre-construction Filing, page E-1 add: A copy of the Stormwater Pollution Prevention Plan with California project-specific procedures for California's General Statewide Construction NPDES Permit No. 99-08-DWQ will be sent to Board staff - Victorville Branch for approval.

SA1-2 2. Volume II, Appendix E, Section VIII.B. Reporting, Section 1, page E-13 add: e. soil compaction test data; including pre-construction data, post construction data, method, date, and conclusion/recommendations.

SA1-3 3. Volume II, Appendix E, Section VIII.B. Reporting, Section 2, page E-13 add: Kern River Gas Transmission will file with the Secretary an annual activity report for non-agricultural areas for five years (IAW Volume I, Section 2-5, page 2-38).

SA1-4 4. Volume II, Appendix F, Section V.B.11 Trench Dewatering, page F-7, Add: (new sentences), Should dewatering be required, samples will be taken and analyzed to insure water quality objectives are not exceeded prior to discharge. Construction dewatering that contains no Water Quality Control Plan for the Lahontan Region (Basin Plan) pollutants will be discharged to land or used as dust control, as an initial choice of removal.

SA1-5 5. Volume II, Appendix F, Section VI.C:4 Trench Dewatering, page F-12, Add: (new sentences), Should dewatering be required, samples will be taken and analyzed to insure water quality objectives are not exceeded prior to discharge. Construction dewatering that contains no Basin Plan pollutants will be discharged to land or used as dust control, as an initial choice of removal.

SA1-6 6. Volume II, Appendix F, Section VII. A Hydrostatic Testing Notification Procedures and Permits, page F-13, paragraph 2, Add: Within California, apply for Statewide General Industrial

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at http://www.swrcb.ca.gov
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State 1

SA1-1 This information has been incorporated into KRGT's UECRM Plan (see appendix E).

SA1-2 The statement "e. soil compaction test data in accordance with section VI.C." has been added to section VIII.B. of KRGT's UECRM Plan (see appendix E). Preconstruction compaction surveys would not be conducted; however, after construction, KRGT would test disturbed soils for compaction using a cone penetrometer or other appropriate device in comparison with adjacent undisturbed soils. If these tests indicate that compaction occurred, soils would be plowed with a paratill, paraplow, or other deep tillage device to alleviate compaction.

SA1-3 KRGT's California Reclamation Plan (see appendix V) provides for a 6-year monitoring period for revegetation success in non-agricultural areas with frequent and long-term surveillance to identify and remediate any active erosion problem that may develop. Additional discussion of KRGT's California Reclamation Plan is provided in section 4.5.2.1.

SA1-4 This information has been incorporated into KRGT's WWCM Procedures (see appendix F).

SA1-5 This information has been incorporated into KRGT's WWCM Procedures (see appendix F).

SA1-6 This information has been incorporated into KRGT's WWCM Procedures (see appendix F).

SA1-6 (cont'd) Stormwater Permit No. 97-03-DWQ. A copy of the Industrial Stormwater Pollution Prevention Plan with California project-specific alternate sampling program procedures will be sent to Board staff, Victorville Branch, for review and approval. An alternate sampling program will include sampling for organics, inorganics, metals, nutrients, and oil/grease prior to discharge of hydrostatic test water. Reporting on amount of runoff and destination from the site right-of way will be recorded as part of the alternate sampling program annual report. A Notice of Termination will be filed with Board staff, Victorville Branch, at the conclusion of the hydrostatic testing.

SA1-7 7. Volume II, Appendix G, Section 2.1 c (2) Unloading/Loading Area, page G-4, paragraph 3, Add new sentence after,....and fire protection equipment to contain moderate oil/fuel spills. A clipboard one-page procedure for creating temporary containment berms for moderate spills under the reporting levels will be provided to minimize the overall impacts to the environment.

SA1-8 8. Volume II, Appendix G, Section 3.1 (2) Contractor Responsibility, page G-5, Add new sentence after, ... as a result of their operations; Site personnel shall take appropriate action to minimize spill impacts by following Section 2.1 c (2) temporary containment berm instructions.

Board staff has the following comments associated with this "draft" EIS/EIR:

SA1-9 1. Volume II, Appendix E, Section III.A. Environmental Inspection, page E-2, Paragraph 1; States, "At least one Environmental Inspector (EI)..." and Volume I, Section 2.5 page 2-37 identifies that "two EIs will be retained. All Volume II references to the number of EIs should reflect, "At least two...".

SA1-10 2. Volume II, Appendix F, Section III.A. Environmental Inspection, page F-2, Paragraph 1; States, "At least one Environmental Inspector (EI)..." and Volume I, Section 2.5 page 2-37 identifies that "two EIs will be retained. All Volume II references to the number of EIs should reflect, "At least two...".

SA1-11 3. Volume II, Appendix F, Section V.B.8 Crossings of Intermediate Waterbodies, page F-7, Paragraph 2; procedures for crossing not listed in V.B. 5.

SA1-12 4. Volume II, Appendix F, Section V.B.9 Crossings of Major Waterbodies, page F-7, Paragraph 2; procedures for crossing not listed and section I.C.1.c does not exist.

If you have any questions on these additions and comments, please telephone me at (760) 241-7412 or email at erondash@rb6v.swrcb.ca.gov.

Gene Rondash
Water Resources Control Engineer

cc: Mailing List

GR/rc/KRGT Draft EIR Comments

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at http://www.swrcb.ca.gov
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State 1

SA1-7 This information has been incorporated into KRGT's Spill Plan (see appendix G).

SA1-8 This information has been incorporated into KRGT's Spill Plan (see appendix G).

SA1-9 This information has been incorporated into KRGT's UECRM Plan (see appendix E).

SA1-10 This information has been incorporated into KRGT's WWCM Procedures (see appendix F).

SA1-11 The reference to section V.B.5. is for the use of equipment bridges and not waterbody crossing procedures. The procedures for crossing intermediate waterbodies are provided in section V.B.8.

SA1-12 The reference should have been to section I.A. where major waterbody is defined. The correction has been made in KRGT's WWCM Procedures (see appendix F).

MAILING LIST
KERN RIVER GAS TRANSMISSION PROJECT EIR

Mr. Cy Oggins
California State Lands Commission
100 Howe Ave., Suite 100 South
Sacramento, CA 95625

Mr. Brent Arnold
Kern River Gas Transmission Company (KRGT)
295 Chipeta Way
Salt Lake City, Utah 84108

Oscar Balaguer
SWRCB, DWQ
901 "P" St. Suite 130
Sacramento, CA 95814

Rebecca Jones
Dept of Fish and Game
36431 41st Street East
Palmdale, CA 93552

Mr. Antal Szijj
U.S. Army Corps of Engineers
Seven Oaks Dam Resident Office – Regulatory Branch
32330 Santa Ana Canyon Road
Highland, CA 92346

State

ORIGINAL

KENNY C. GUINN
Governor

STATE OF NEVADA

CATHERINE BARCOMB
Administrator

FILED
02 APR -8 AM 9:39
FEDERAL ENERGY
REGULATORY COMMISSION

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
COMMISSION FOR THE
PRESERVATION OF WILD HORSES
885 Eastlake Boulevard
Carson City, Nevada 89704
Phone (775) 849-3625 • Fax (775) 849-2391

March 18, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street NE, Room 1A
Washington, DC 20426

RE: Kern River 2003 Expansion Project
Docket No. CP01-422-000

Dear Ms. Salas,

The State of Nevada Commission for the Preservation of Wild Horses appreciates the opportunity to review and comment on the Kern River 2003 Expansion Project as if affects Nevada's wild horses.

We have reviewed the documents that were sent and do have concerns we would like to register in respect to the wild horses that will be affected by this project. We have discussed these issues with the Las Vegas District Wild Horse Specialist and share the same concerns they have expressed.

Please register these comments as our position for the State of Nevada.

NEPA Project Review
Issues and Concerns for Wild Horses and Burros Within The Red Rock Herd Management Area

This is a summary of concerns and issues regarding wild horse and burro management in the Red Rock Herd Management Area (HMA) in Southern Nevada. Three projects are being outlined here: (1) Table Mountain Wind Energy Project; (2) the Kern River 2003 Expansion Project; and (3) the Ivanpah Energy Center (also know as the Diamond Energy Project). These issues need to be addressed before any of these projects move forward to their primary construction stages.

FERC DOCKETED

020411048S.2

State 2

Table Mountain Wind Energy Project

In reviewing the Preliminary Draft Environmental Impact Statement (EIS) for the Table Mountain Wind Generating Facility, several problems were found regarding the inclusion of wild horses and burros in the document. Several general problems need to be addressed before the document should be released in its final form.

The northern one-third of the proposed project area (all area north of Sandy Valley Rd.) is encompassed in the Red Rock Herd Management Area (HMA). The HMA outlines the Sandy Valley Rd. and runs north encompassing the northern sections of the proposed project area, not north of Wilson Pass Road as indicated in the Draft EIS.

Wild horses and burros should be included in the Table of Contents, and should be mentioned in their own right, not co-mingled in the same category as "wildlife." Since the proposed project area encompasses such a large section of the HMA, this fact should be mentioned early and often, with specific detail pertaining to direct wild horse and burro impacts being acknowledged—not just noting how wild horse and burro activity may impact big horn sheep populations. Such concerns include road construction and repairs within the HMA, guide wire safety for horses and burros, loss of habitat, increased human/animal encounters, and an inability to conduct federally mandated aerial censuses due to limitations and regulations in the flight deck of the proposed project area.

Also, pertaining to the location of the proposed project site in relation to the HMA, the Environmental Laws and Regulations section should include the Wild Free-Roaming Horse and Burro Act of 1971, as regulations by the act could have effects in those stated areas. A map showing the proposed project area in relation to the HMA should also be a necessity.

Kern River 2003 Expansion Project

SA2-1 The draft EIS for the Kern River 2003 Expansion Project encompasses the entire area affected by the pipeline from Kern County, California to Lincoln County, Wyoming. The scope of this project in enormous. Many special management areas are mentioned in the document; however, the core of the document fails to mention that 14 miles of the proposed pipeline will be running directly through the Red Rock HMA. The only mention of this is in the Appendix B, Figure B-7—a map of the proposed area with the HMA labeled "Red Rock Herd Management Area."

SA2-2 Issues and concerns directly affecting wild horses and burros need to be addressed. A section concerning wild horse and burro impacts must to be added to address these concerns and impacts. The main issue comes in the form of trenching. According to the text (pg. 2-25, Trenching), the resolution to the problem of animals falling into the 7 ft. deep, 4-6 ft. wide trenches is through the use of Soft Plugs. "Soft Plugs (areas where the trench is excavated and replaced with minimal compaction) would be left at all well-defined livestock and wildlife trails and at 1-mile intervals as a means of escape for livestock, wildlife, and reptiles that may fall into the trench." This cannot be acceptable.

State 2

SA2-1 The Red Rock Herd Management Area (HMA) is included in table 4.8.6-1 and discussed as a special management area in section 4.8.6.1. The Red Rock HMA is also discussed in section 4.6.1.4.

SA2-2 A section heading for wild horses and burros has been added as section 4.6.1.4. Within the Red Rock HMA, KRGT would place earthen trench plugs, with ramps on either side, at all well-defined livestock and wildlife trails intersected by the trench, including those used by wild horses and burros and every 0.25 mile if there is not a well-designated trail. EIs, in conjunction with the agencies' compliance monitors, would reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench. These plugs would provide bridges for horses and burros to cross the open trench. Because wild horses and burros generally use the same trails on a consistent basis, the placement of trench plugs where these trails are crossed by the trench is expected to minimize the potential for horses and/or burros to fall into the trench. In addition, the spoil pile located adjacent to the trench would serve as a barrier for the horses and burros before reaching the trench.

SA2-2 (cont'd) If a small animal falls into a trench it may not be harmed. If an 800-1500 lb. horse falls into a 7 ft. deep trench the potential for severe injury or death of the animal. Trenching within the HMA will need to be very carefully observed. This trench is going to bisect habitat for the horses and burros (there will be water on one side and food on the other) so the incidences of horses in the area will be great. This will not be an acceptable process within the HMA.

SA2-3 This EIS, in its failure to mention the HMA, also neglects to mention its close proximity to water sources. Tunnel Springs is in the vicinity of the project area. It is a critical water source for wild horses and burros in the area. With construction nearby, horses and burros may not come to water. Temporary water sources for the animals could be mitigated during the scope of the project.

Ivanpah Energy Center (Diamond Energy Project)

As the Draft EIS currently stands, the Ivanpah Energy Project does not concern wild horse and burro interests. The main project site is located several miles south of the HMA. The only concern would be if a power line were proposed along the Valley Electric Association (VEA) Right-of-Way (ROW) farther north than the Table Mountain Substation. The HMA boundary is just north of the substation. If the power line were to be adjusted to run north to Pahrump, concerns would arise about wild horse and burro welfare. Should an amendment to the EIS occur, and the power line runs north into the HMA, then our concerns will need to be addressed. As it stands (the Draft EIS), there are no wild horse and burro concerns.

We thank you in advance for your time in considering our concerns. We would requests that future documents reflect these issues, be modified, and that they be addressed in writing. If you have any questions, please do not hesitate to call.

Sincerely,

CATHERINE BARCOMB
Administrator

cc: Julie Von Tobel Gleason, Chairman
Nevada Wild Horse Commission

Nevada State Clearinghouse

State 2

SA2-3 Section 4.6.1.4 includes a discussion of the wild horses within the Red Rock HMA, including the proposed project's proximity to Tunnel Springs. Although animals are expected to be able to cross over the trench (see the response to comment SA2-2), KRGT would transfer some water and create a temporary alternative water source away from the construction right-of-way to mitigate for any potential disruption of access to water. In addition, temporary tanks holding about 500 gallons of water would be placed in locations designated by the BLM, Las Vegas Field Office Wild Horse and Burro Specialist. The tanks would be installed and kept full of water 3 weeks before commencement of construction and during construction. The tanks would be removed after the pipeline has been backfilled.

KENNY C. GUINN
Governor

STATE OF NEVADA

JOHN P. COMEAUX
Director

DEPARTMENT OF ADMINISTRATION
209 E. Musser Street, Room 200
Carson City, Nevada 89701-4298
Fax (775) 684-0260
(775) 684-0209

April 10, 2002

Ms. Magālie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, D.C. 20426

Docket # Cp01-422-000

Re: SAI NV # E2002-116

Project: Kern River Expansion Project

Dear Ms. Salas:

Enclosed are the comments from the Nevada Divisions of Environmental Protection, Water Resources, Health and State Lands, the University of Nevada, Reno Bureau of Mines, and the State Historic Preservation Office and a copy of a letter sent to you under separate cover by the Commission for the Preservation of Wild Horses concerning the above referenced report. These comments constitute the State Clearinghouse review of this proposal as per Executive Order 12372. Please address these comments or concerns in your final decision. If you have questions, please contact me at 684-0209.

Sincerely,

Heather K. Elliott
Nevada State Clearinghouse/SPOC

Cc: Cy Oggins, Ca. State Lands Commission

State

NEVADA STATE CLEARINGHOUSE
Department of Administration
Budget and Planning Division
209 East Musser Street., Room 200
Carson City, Nevada 89701-4298
(775) 684-0209
Fax (775) 684-0260

DATE: February 27 , 2002

Governor's Office	Legislative Counsel Bureau	Conservation/Natural Resources
Agency for Nuclear Projects	Information Technology	Director's Office
Agriculture	Emp. Training & Rehab Research Div	State Lands
Business & Industry	PUC	Environmental Protection
Energy	Transportation	Forestry
Minerals	UNR Bureau of Mines	Wildlife
Economic Development	UNR Library	Region 1
Tourism	UNLV Library	Region 2
Fire Marshal	Historic Preservation	Region 3
Human Resources	Emergency Management	Conservation Districts
Aging Services	Office of the Attorney General	State Parks
Health Division	Washington Office	Water Resources
Indian Commission	Nevada Assoc. of Counties	Natural Heritage
Colorado River Commission	Nevada League of Cities	Wild Horse Commission

Nevada SAI # E2002-116
Project: Kern River 2003 Expansion Project

__ Yes __ No **Send more information on this project as it becomes available.**

CLEARINGHOUSE NOTES: FERC indicated it sent document directly to all but Energy, Health and PUC.
See attached FERC distribution list.

Enclosed, for your review and comment, is a copy of the above mentioned project. Please evaluate it with respect to its effect on your plans and programs, the importance of its contribution to state and/or local areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than **April 9, 2002.** Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference. Questions? Heather Elliott, 684-0209.

THIS SECTION TO BE COMPLETED BY REVIEW AGENCY:

___No comment on this project
___Proposal supported as written
SA3-1 X Additional information below
___Conference desired (See below)
___Conditional support (See below)
___Disapproval (Explain below)

AGENCY COMMENTS:

The applicant is to apply and receive the appropriate permits for Surface Area Disturbance and the Compressor stations prior to construction. This is from the Bureau of Air Pollution Control of the Nevada Division of Environmental Protection. From the Bureau of Water Pollution Control the applicant will need rolling stock and dewatering temporary permits and a stormwater permit for the project.

Signature NDEP Agency Date

State 3

SA3-1 Table 1.6-1 lists the major permits, approvals, and consultations needed for the Kern River 2003 Expansion Project.

NEVADA STATE CLEARINGHOUSE

Department of Administration
Budget and Planning Division
209 East Musser Street., Room 200
Carson City, Nevada 89701-4298
(775) 684-0209
Fax (775) 684-0260

MAR 1 1

DATE: February 27 , 2002

Governor's Office	Legislative Counsel Bureau	Conservation-Natural Resources
Agency for Nuclear Projects	Information Technology	Director's Office
Agriculture	Emp Training & Rehab Research Div.	State Lands
Business & Industry	PUC	Environmental Protection
Energy	Transportation	Forestry
Minerals	UNR Bureau of Mines	Wildlife
Economic Development	UNR Library	Region 1
Tourism	UNLV Library	Region 2
Fire Marshal	Historic Preservation	Region 3
Human Resources	Emergency Management	Conservation Districts
Aging Services	Office of the Attorney General	State Parks
Health Division	Washington Office	Water Resources
Indian Commission	Nevada Assoc. of Counties	Natural Heritage
Colorado River Commission	Nevada League of Cities	Wild Horse Commission

Nevada SAI # E2002-116
Project: Kern River 2003 Expansion Project

__ Yes __ No Send more information on this project as it becomes available.

CLEARINGHOUSE NOTES: FERC indicated it sent document directly to all but Energy, Health and PUC.
See attached FERC distribution list.

Enclosed, for your review and comment, is a copy of the above mentioned project. Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than **April 9, 2002.** Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference. Questions? Heather Elliott, 684-0209.

THIS SECTION TO BE COMPLETED BY REVIEW AGENCY:

___No comment on this project
___Proposal supported as written
_X_Additional information below
___Conference desired (See below)
___Conditional support (See below)
___Disapproval (Explain below)

AGENCY COMMENTS:

E2002-116

SA3-2 A permit will be required for any water sourced within the State of Nevada for dust suppression or hydro-testing. It may be possible to utilize existing permits within the service area of Las Vegas Valley Water District All other areas will require separate permitting even if the water is trucked to the site.

Signature
MICHAEL J ANDERSON P E.

DWR
Agency

March 8, 2002
Date

State

3

SA3-2 Table 1.6-1 lists the major permits, approvals, and consultations needed for the Kern River 2003 Expansion Project.

NEVADA STATE CLEARINGHOUSE

Department of Administration
Budget and Planning Division
209 East Musser Street., Room 200
Carson City, Nevada 89701-4298
(775) 684-0209
Fax (775) 684-0260

RECEIVED
MAR 1 3 2002

DATE: February 27, 2002

Governor's Office	Legislative Counsel Bureau	Conservation-Natural Resources
Agency for Nuclear Projects	Information Technology	Director's Office
Agriculture	Emp. Training & Rehab Research Div	State Lands
Business & Industry	PUC	Environmental Protection
Energy	Transportation	Forestry
Minerals	UNR Bureau of Mines	Wildlife
Economic Development	UNR Library	Region 1
Tourism	UNLV Library	Region 2
Fire Marshal	Historic Preservation	Region 3
Human Resources	Emergency Management	Conservation Districts
Aging Services	Office of the Attorney General	State Parks
Health Division	Washington Office	Water Resources
Indian Commission	Nevada Assoc. of Counties	Natural Heritage
Colorado River Commission	Nevada League of Cities	Wild Horse Commission

Nevada SAI # E2002-116
Project: Kern River 2003 Expansion Project

__ Yes ✓ No Send more information on this project as it becomes available.

CLEARINGHOUSE NOTES: FERC indicated it sent document directly to all but Energy, Health and PUC.
See attached FERC distribution list.

Enclosed, for your review and comment, is a copy of the above mentioned project. Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than April 9, 2002. Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference. Questions? Heather Elliott, 684-0209.

THIS SECTION TO BE COMPLETED BY REVIEW AGENCY:

___No comment on this project
___Proposal supported as written
_X_Additional information below
___Conference desired (See below)
___Conditional support (See below)
___Disapproval (Explain below)

ENTERED
MAR 1 1 2002

RECEIVED
FEB 2 8 2002
HEALTH PROTECTION SERVICES
NV-9941

AGENCY COMMENTS:
SA3-3

Septic system at Dry Lake Compressor Station must be ~~pe~~ approved per provisions of NAC 444.750 - 444.8396, inclusive. Clark County District Health issues permit.

Galen Dalenne
Signature

Health Division
Agency

3-5-02
Date

State 3

SA3-3 KRGT would be responsible for obtaining all the necessary permits associated with its aboveground facilities.

R. MICHAEL TURNIPSEED, P.E.
Director
Department of Conservation
and Natural Resources

PAMELA B. WILCOX
Administrator

KENNY C. GUINN
Governor

State Land Office
State Land Use Planning Agency
Address Reply to:
Division of State Lands
333 W. Nye Lane, Room 118
Carson City, Nevada 89706-0818
Phone (775) 687-4363
Fax (775) 687-3783

STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

Division of State Lands

April 3, 2002

MEMORANDUM

TO: Heather Elliott, State Clearinghouse

FROM: Mike Del Grosso, Deputy Administrator

SUBJECT: SAI #E2002-116 Kern River 2003 Expansion Project (Comments due April 9, 2002)

SA3-4

The pipeline expansion project will cross land used by the Nevada National Guard northeast of Las Vegas (Edsall Training Center). The site is used as a tank training area with heavy vehicles crossing segments of the pipeline when training activities occur. The pipeline needs to be installed in this area in a manner so that military tanks will not be able to damage the line.

The land in question is under Recreational and Public Purposes Act lease from the Bureau of Land Management. As such, the site development plan for the state use of the property needs to be amended by the Bureau to allow the easement and installation of the pipeline through the area. An application for the pipeline easement must be filed with the Division of State Lands concurrently when applying to the Bureau of Land Management for the required right-of-way.

State 3

SA3-4 The impact of the proposed project on the Edsall Training Center is discussed in section 4.8.6.1. Site-specific mitigation measures required by the Edsall Training Center would be included as stipulations of the Construction, Operation, and Maintenance Plan (COM Plan), which would be attached to the right-of-way grant issued by the BLM. In addition, table 1.6-1 includes the requirement to obtain an Easement Permit from the Division of State Lands.

NEVADA STATE CLEARINGHOUSE
Department of Administration
Budget and Planning Division
209 East Musser Street., Room 200
Carson City, Nevada 89701-4298
(775) 684-0209
Fax (775) 684-0260

RECEIVED
MAR 15 2002

DATE: February 27, 2002

Governor's Office	Legislative Counsel Bureau	Conservation-Natural Resources
Agency for Nuclear Projects	Information Technology	Director's Office
Agriculture	Emp. Training & Rehab Research Div.	State Lands
Business & Industry	PUC	Environmental Protection
Energy	Transportation	Forestry
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Fire Marshal	Historic Preservation	Region 3
Human Resources	Emergency Management	Conservation Districts
Aging Services	Office of the Attorney General	State Parks
Health Division	Washington Office	Water Resources
Indian Commission	Nevada Assoc. of Counties	Natural Heritage
Colorado River Commission	Nevada League of Cities	Wild Horse Commission

Nevada SAI # E2002-116
Project: Kern River 2003 Expansion Project

__ Yes __X__ No Send more information on this project as it becomes available.

CLEARINGHOUSE NOTES: FERC indicated it sent document directly to all but Energy, Health and PUC.
See attached FERC distribution list.

Enclosed, for your review and comment, is a copy of the above mentioned project. Please evaluate it with respect to its effect on your plans and programs, the importance of its contribution to state and/or local areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than **April 9, 2002.** Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference. Questions? Heather Elliott, 684-0209.

THIS SECTION TO BE COMPLETED BY REVIEW AGENCY:

SA3-5

___No comment on this project	___Conference desired (See below)
_X_ Proposal supported as written	___Conditional support (See below)
___Additional information below	___Disapproval (Explain below)

AGENCY COMMENTS:

Signature — Agency — Date 3/13/02

State 3

SA3-5 Comment noted.

State 3

NEVADA STATE CLEARINGHOUSE
Department of Administration
Budget and Planning Division
209 East Musser Street., Room 200
Carson City, Nevada 89701-4298
(775) 684-0209
Fax (775) 684-0260

APR - 9 2002

DATE: February 27, 2002

Governor's Office	Legislative Counsel Bureau	Conservation-Natural Resources
Agency for Nuclear Projects	Information Technology	Director's Office
Agriculture	Emp. Training & Rehab Research Div.	State Lands
Business & Industry	PUC	Environmental Protection
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Indian Commission	Nevada Assoc. of Counties	Natural Heritage
Colorado River Commission	Nevada League of Cities	Wild Horse Commission

Nevada SAI # E2002-116
Project: Kern River 2003 Expansion Project

__ Yes __ No **Send more information on this project as it becomes available.**

CLEARINGHOUSE NOTES: FERC indicated it sent document directly to all but Energy, Health and PUC.
See attached FERC distribution list.

Enclosed, for your review and comment, is a copy of the above mentioned project. Please evaluate it with respect to its effect on your plans and programs; the importance of its contribution to state and/or local areawide goals and objectives; and its accord with any applicable laws, orders or regulations with which you are familiar.

Please submit your comments no later than **April 9, 2002.** Use the space below for short comments. If significant comments are provided, please use agency letterhead and include the Nevada SAI number and comment due date for our reference. Questions? Heather Elliott, 684-0209.

THIS SECTION TO BE COMPLETED BY REVIEW AGENCY:

___No comment on this project
X Proposal supported as written
___Additional information below
___Conference desired (See below)
___Conditional support (See below)
___Disapproval (Explain below)

AGENCY COMMENTS:

SA3-6 The Nevada State Historic Preservation Office has entered into a programmatic agreement on the Kern River 2003 Expansion Project with FERC and other federal agencies, and the Kern River Gas Transmission Company. The PA sets out the manner in which cultural resources will be identified, evaluated and treated. Adherence to the PA ensures that FERC and other federal agencies will satisfy their obligations under the National Historic Preservation Act.

Alice M Baldrica

ALICE M. BALDRICA — State Historic Preservation Office — 4/9/02
Signature — Agency — Date

SA3-6 Comment noted.

State of Utah

GOVERNOR'S OFFICE OF PLANNING AND BUDGET
Resource Development Coordinating Committee

Michael O. Leavitt
Governor
Wes Curtis
State Planning Coordinator
Bill Schlotthauer
Committee Chairman
John A. Harja
Executive Director

1594 West North Temple, Suite 3710
P.O. Box 145610
Salt Lake City, Utah 84114-5610
(801) 538-5535
Fax: (801) 538-5544

April 10, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
8889 First Street, N.E., Room 1A
Washington, DC 20426

SUBJECT: Kern River 2003 Expansion Project DEIS
Reference Docket No. CP01-422-000
Project No. 02-1626

Dear Ms. Salas:

The State of Utah (State) appreciates the opportunity to comment on the Kern River 2003 Expansion Project DEIS (DEIS). The State and its agencies have reviewed the DEIS and submit the following comments.

SA4-1 The State recommends that a gap or opening be constructed in the spoils pile adjacent to the trench at each earthen ditch plug and that the trench be surveyed daily to discourage animals from entering – and to assist stranded animals out of – the trench. The State further recommends that the length of open trench be minimized at all times in areas with high wildlife concentrations.

If work in critical deer winter ranges continues past November 15, 2003, the State recommends that trench plugs and gaps in the spoils pile be constructed every ¼ mile in those areas and notes that additional mitigation measures may also be necessary.

SA4-2 The DEIS does not include several of the critical and high-priority mule deer winter ranges that will be impacted intermittently along the pipeline route throughout Utah. The exact locations of these winter ranges can be obtained on the Utah Division of Wildlife Resources (DWR) website (www.utahcdc.usu.edu/ucdc/DownloadGIS/disclaim.htm) or by contacting DWR directly at 801-538-4716.

SA4-3 The State notes that DEIS Table 4.7.1-1 contains several errors; these errors include failing to illustrate special status designation for certain Utah Sensitive Species List (e.g. bald eagle and mountain plover) and failing to identify certain species (e.g. pygmy rabbit and swift (kit) fox) that occur along portions of the pipeline route.

SA4-4 Finally, while the State recognizes that the Kern River Gas Transmission Company is currently working with DWR and the Bureau of Land Management (BLM) to develop acceptable mitigation measures for the greater sage-grouse and the burrowing owl, it stands behind earlier concerns expressed

State 4

SA4-1 KRGT would provide a gap in the spoil pile at each location where a trench plug has been installed to facilitate animal movement across the trench. Additionally, each construction spread would have at least two EIs as well as third-party compliance monitors representing the agencies to oversee environmental compliance (see section 2.5). These individuals would regularly inspect the trench and assist entrapped animals with escape. EIs, in conjunction with the agencies' compliance monitors, would also reduce trench plug spacing (*i.e.*, add more plugs) if the proposed spacing is determined to be insufficient to facilitate animal escape from the trench. Although KRGT expects to complete project work in critical deer winter ranges by November 1, KRGT would install trench plugs every 0.25 mile through critical winter range if construction extends past November 15.

SA4-2 Section 4.6.1.3 has been revised to include information about critical and high-priority mule deer winter ranges in Utah.

SA4-3 The status of these species has been updated in table 4.7.1-1. The scope of the EIS/EIR relating to special status species primarily focuses on those species with the potential to be affected by the project in areas in which they are afforded protection. Because neither the pygmy rabbit or swift fox is considered a special status species in Utah, a discussion of their occurrence along the project corridor within the state is not included in the EIS/EIR.

SA4-4 Surveys for burrowing owls and sage grouse were recently completed in accordance with agency-approved survey protocols (see the responses to comments FA5-18 and FA5-59). Agency representatives were contacted during surveys to discuss survey results and to develop appropriate mitigation measures. Section 4.7.3 has been revised to incorporate this information.

SA4-4 (cont'd)

by DWR regarding these species, as outlined in that agency's February 11, 2002 letter (attached). In the letter, DWR noted that the portions of the project right-of-way in the Mohave Desert contain suitable habitat for burrowing owls. DWR also recommended that surveys be conducted along the pipeline route to obtain a better understanding of the essential greater sage-grouse habitat features that would be impacted with the aim of developing the most appropriate and beneficial mitigation measures for the species. DWR further recommends that contributions be made to a mitigation banking fund for habitat loss/destruction/alteration and disturbance/displacement of greater sage-grouse broods during construction and that disturbed areas be re-vegetated with an appropriate seed mixture. The State reserves the right to comment on the final mitigation measures for both of these species.

Thank you for the opportunity for the State of Utah to comment on this important natural resource matter.

Sincerely,

John Harja
Executive Director
Resource Development Coordinating Committee

cc: Gas Branch 1
Cy Oggins

State

4

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

April 10, 2002

The California State University

RE: Kern River 2003 Expansion Project
Reference Docket No. CP01-422-000

Dear EIS/EIR project administrator,

SA5-1

I am particularly interested in potential paleontologic resources in the Goodsprings and Daggett Loops in the California section of the proposed pipeline project. This is because in 1990 I completed a dissertation on the Late Wisconsinan history of the Lake Manix basin, a region that this pipeline project traverses.

When the previous pipeline trench was excavated about 1992-93, I had the outstanding opportunity to walk the open trench for several miles before the pipeline was lowered into it. I was looking for Anodonta shells (pelecypods) of late Pleistocene age that could be radiocarbon dated to give us better age control of the surficial lacustrine and deltaic deposits in the region. Secondly, I was looking at the trench stratigraphy where suspected faults cross the pipeline course. I did not delay the project in any way, and I even wrote a brief summary of my findings for use by the EIR people (Dames and Moore) who gave me permission to walk the trench.

I am simply requesting that I be notified a week ahead of time when the trench will be completed for the:

- ▶Goodsprings Loop, mileposts 624 to 626 for paleontologic evidence for Pleistocene Lake Mojave (Silver Lake);
- ▶Goodsprings Loop, mileposts 665 to 671, and 674.5 to 681 for paleontologic evidence related to Pleistocene Lake Manix history and near-surface rupture evidence of the Calico and Lake Dolores faults; and
- ▶Daggett Loop, mileposts 16 to 19.5 for paleontologic evidence related to the Mojave River sedimentary record.

Hopefully, I will again be allowed to check the trench wall for this valuable geologic evidence.

Sincerely,

Norman Meek

Norman Meek
Professor of Geography

DEPARTMENT OF GEOGRAPHY

MASTER OF URBAN PLANNING

909/880-5522

5500 University Parkway, San Bernardino, CA 92407-2397

State

5

SA5-1 KRGT will instruct its paleontological monitor to notify you when the trench is available in these areas and will assist you in obtaining the necessary safety and biological training before entering the construction work area.

DEPARTMENT OF FISH AND GAME
Eastern Sierra-Inland Deserts Region
Bishop Field Office
407 W. Line Street
Bishop, CA 93514
(760) 872-1171

April 11, 2002

Ms. Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Mr. Cy Oggins
Environmental Services
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

Re: Kern River 2003 Expansion Project Draft EIS/EIR
Docket No. CP01-422-000 and SCH#2001071035

Dear Ms. Salas and Mr. Oggins:

The California Department of Fish and Game (Department) has reviewed the Draft Environmental Impact Statement/Environmental Impact Report (DEIS/EIR) for the above-mentioned project with regards to impacts to biological resources. The proposed project, for the California portion, consists of the construction of 104.0 miles of 36-inch-diameter pipeline in San Bernardino County from the Nevada boarder at Primm to Daggett and 82.2 miles of 42-inch pipeline in San Bernardino and Kern Counties from Daggett to the town of Mojave. In addition, there will be modification to one compressor station in San Bernardino County and four existing meter stations, two each in San Bernardino and Kern Counties.

The Department is providing comments on this DEIS/EIR as the state agency which has the statutory and common law responsibilities with regard to fish and wildlife resources and habitats. California's fish and wildlife resources, including their habitats, are held in trust for the people of the State by the Department (Fish & Game Code section 711.7). The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species (Fish & Game Code section 1802). The Department's fish and wildlife management functions are implemented through its

State 6

administration and enforcement of the Fish and Game Code (Fish & Game Code Section 702). The Department is a trustee agency for fish and wildlife under the California Environmental Quality Act (see CEQA Guidelines, 14 Cal. Code Regs. Sec. 15386(a)). The Department is providing these comments in furtherance of these statutory responsibilities, as well as its common law role as trustee for the public's fish and wildlife.

Specific Comments

SA6-1 Table 1.6-1, page 1-24, which refers to the permits required for the project, indicates the Department will consider issuance of a Section 2081 Incidental Take Permit for state-only listed species and a Section 2080.1 consistency determination for take of species that are both state and federally listed. The Department will be issuing a Section 2081 permit for all listed species, those state-listed only as well as those listed both state and federally.

SA6-2 Vegetation - Section 4.5, pages 4-73 through 97

The Department would like to review the draft revegetation and noxious weed plans prior to making comments on this section. Monitoring and treatment for weeds is targeted for a 5-year period in the DEIS/EIR. We recommend this time frame be extended to at least 10 years. The Department is concerned with the plantings prescribed for desert tortoise habitat, and the criteria for success and monitoring of the revegetation activities.

Special Status Species - Section 4.7, pages 4-111 through 154

SA6-3 Table 4.7.1-1 : The bald eagle and golden eagle are state-fully protected species. The Southwestern willow flycatcher is state-listed endangered. The Nelson's bighorn sheep is a state-fully protected species, except as provided for by subdivision (b) of Fish and Game Code Section 4902.

SA6-4 Page 4-124 : The Department believes that the proposed compensation ratios outlined in the DEIS are acceptable and in accordance with Compensation for the Desert Tortoise (Desert Tortoise Management Oversight Group 1991). Enhancement fees and endowment fees will be applied to all mitigation lands acquired in California.

SA6-5 Page 4-126 : As a condition of the Section 2081 Permit, all biologists will be required to be approved by the Department. Some of the biologists who are qualified will be authorized to handle tortoise. The Guidelines for Handling Desert Tortoises During Construction Projects was updated in 1999. This newer version should be used.

State 6

SA6-1 Table 1.6-1 has been revised.

SA6-2 The CDFG was provided with drafts of both the California Reclamation Plan and Noxious Weed Plan, and the Agency Staffs understand that the final versions of the plans filed by KRGT incorporate any comments the CDFG provided. The Reclamation Plan (without appendices) is included as appendix V; the Reclamation Plan in its entirety and the Noxious Weed Plan are available on the Kern River 2003 Expansion Project Internet web site (http://www.kernriver2003.com) until at least September 2002. Information from the revised plans, including the CDFG's concurrence with a 6-year reclamation monitoring time frame instead of the six monitoring periods in a 10-year time frame originally requested by the CDFG, has also been incorporated into sections 4.5.2.1 and 4.5.4. KRGT would monitor and treat noxious weeds within its right-of-way for the life of the project.

SA6-3 Section 4.7 has been updated to acknowledge that the golden eagle is state-fully protected. Although the bald eagle is state-fully protected in addition to being state-listed as endangered, the endangered classification provides a more commonly known assessment of this species' status in California. Section 4.7 has been revised to state that the southwestern willow flycatcher is a state-listed endangered species in California. Based on the January 2002 edition of Special Animals (http://www.dfg.ca.gov/whdab/spanimals.pdf), only the Distinct Population Segment of *Ovis canadensis nelsoni* occurring in the southwestern portion of California is state-fully protected and the population of Nelson's bighorn sheep with the potential to occur in the proposed project area is not afforded state protection.

SA6-4 Comment noted. Sections 4.7.2 and 4.7.3 have been revised to clarify that enhancement and management (endowment) fees would be applied to all mitigation lands in California.

SA6-5 KRGT would provide the CDFG and the CSLC the opportunity to review the qualifications of biologists associated with the project. In addition, qualified third-party monitors would be employed by and would report directly to the agencies. Although the mitigation measure specifying that the *Guidelines for Handling Desert Tortoises During Construction Projects* would be used during construction included a 1994 reference in the draft EIS/EIR, the actual reference cited in appendix W specifies that the guidelines to be used were written in 1994 and revised in 1999. The text and appendix S have been revised to reference the updated 1999 version in order to eliminate any potential confusion.

SA6-6 Page 4-127 : The Department agrees that open trenches and other excavations should be fenced or covered at the close of each work day. Currently there is no information as to the efficacy of tortoise escape ramps. Neonates, and likely juveniles could be killed by falling into the trench.

SA6-7 Page 4-132 : Raptors are protected under Fish and Game Code Section 3503.5. If raptors are found nesting, work should not be conducted within 1,000 feet of the nest.

SA6-8 Page 4-134 : The Department has recently learned of an apparent significant decrease in the Bendire's thrasher populations in California. If this species is found nesting within the project area, there should be no disturbance within 1,000 feet of the nest(s).

SA6-9 Page 4-136 : Physically capturing or trapping owls, and relocating them without a permit is a violation of the Migratory Bird Treaty Act and California State law. Burrowing owl mitigation should be as proposed in the 1993 Burrowing Owl Consortium protocol guidelines.

SA6-10 Page 4-141: Any observations of Gila monsters should be reported to the Department.

SA6-11 Page 4-142 : The Department agrees with the mitigation proposed for the Mojave fringe-toed lizard.

SA6-12 Page 4-150 : Mojave (sic) ground squirrel should be spelled Mohave ground squirrel. The Department agrees with the mitigation proposed for this species.

SA6-13 Page 4-154 : The Department will be issuing a Section 2081 permit for the all listed species concerned, including desert tortoise.

Appendix R : The appendix states that most of the work will be conducted during the hibernation/aestivation period of the tortoise, and therefore some of the mitigation measures described may not be necessary or applicable. Tortoises are known to be active throughout the year in California. Neonates and juveniles, which are the hardest to detect, usually become active first. The general mitigation measures identified in this section are fairly complete, but the following measures should be included:

SA6-14 1)The Authorized Biologist(s) shall have authority to stop immediately any activity that is not in compliance with the Section 2081 permit, and to order any reasonable measure to avoid the take of an individual of a listed species.

State 6

SA6-6 Section 4.7.2 has been revised to include a recommendation that KRGT shall coordinate with the FWS, the BLM, and the CDFG (in California) to identify site-specific locations where KRGT would install temporary tortoise-proof fence or cover open trenches at the end of each work day if active construction in desert tortoise habitat would continue after January 31 (a time of increasing neonate juvenile dispersal). Section 4.7.2 and appendix S have been revised to include specifications for temporary tortoise-proof fencing. See also the response to comment FA5-43.

SA6-7 KRGT would implement the more restrictive Utah Field Office Guidelines (FWS, 2002), which require a minimum buffer of 1,320 feet around active raptor nests, unless otherwise approved by the applicable agencies. Section 4.7.3 has been revised to include this information.

SA6-8 Section 4.7.3 has been revised to incorporate the recommendation that KRGT shall conduct preconstruction surveys for nesting Bendire's thrashers in areas of suitable habitat that would be disturbed by construction activities and that no disturbance shall occur within 1,000 feet of active Bendire's thrasher nests unless otherwise permitted by the CDFG.

SA6-9 KRGT would obtain all applicable permits before trapping or relocating burrowing owls. KRGT's burrowing owl surveys have been completed and subsequent mitigation would be in accordance with the 1993 Burrowing Owl Consortium protocol guidelines (see the revised section 4.7.3).

SA6-10 Section 4.7.3 has been revised to indicate that KRGT would report any observations of Gila monsters in California to the CDFG.

SA6-11 Comment noted.

SA6-12 The correct spelling of the Mohave ground squirrel has been incorporated throughout the document.

SA6-13 Section 4.7.5 has been revised to include this information.

SA6-14 Appendix S has been revised to include this conservation measure.

SA6-15 2) Tortoises fatally injured or killed by project activities will be submitted for necropsy, according to Salvage Protocols for Dying and Recently Dead Tortoise (2001), at the expense of the project proponent.

SA6-16 3) When working in California several of the mitigation measures listed will require Department notification.

SA6-17 Additionally, Condition 13 should be modified to state that the excavation of a burrow would be conducted by an authorized biologist, not merely supervised by a biologist. The Section 2081 Permit may include additions and/or modifications based upon more specific project description information and/or the potential for impacts at specific locations.

SA6-18 In conclusion, the Department requests that the draft revegetation and noxious weed plans be submitted to the Department for review. The Department appreciates the opportunity to comment on this DEIS/EIR. Questions regarding this letter and further coordination on these issues should be directed to Ms. Rebecca Jones, Environmental Scientist III, (661) 285-5867.

Sincerely,

for Darrell Wong
Senior Environmental Scientist

cc: Ms. Julie Means, San Joaquin Valley-Southern Sierra Region, Fresno
Ms. Annette Tennebow, San Joaquin Valley-Southern Sierra Region, Fresno
Ms. Rebecca Jones, Eastern Sierra-Inland Deserts Region, Palmdale
SCH

State 6

SA6-15 Appendix S has been revised to include this conservation measure.

SA6-16 The Agency Staffs believe the appropriate notifications have been added. The CSLC staff would work with the CDFG to provide additional notifications as requested.

SA6-17 This conservation measure has been revised to include this recommendation.

SA6-18 See the response to comment SA6-2.

DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING – MS 32
1120 N STREET
P.O. BOX 942874
SACRAMENTO, CA 94274-0001

PHONE (916) 653-9689
FAX (916) 653-1447
TDD (916) 654-4014

April 15, 2002

Cy R. Oggins
c/o California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

Subject: California Department of Transportation (CDOT) Review of the Draft Environmental Impact Statement for the Kern River 2003 Expansion Project, SCH# 2001071035

Dear Mr. Oggins:

Thank you for the opportunity to review this document. The California Department of Transportation (CDOT) has previously reviewed this project. Please see the attached September 20, 2001 and August 6, 2001 letters. The CDOT Native American Desk was also included in this review. Section 4.8.5 Transportation refers to application for any special permits. CDOT encroachment permits are still required as indicated in our previous letters. The proponent has indicated their awareness of this requirement and has been in communications with our district offices.

SA7-1

If you have questions regarding these comments in general, please call me at (916) 653-9689. Specific questions can be addressed by the district intergovernmental review coordinators or the district Encroachment Permit offices.

Sincerely,

William J. Costa

William J. Costa, Manager
CDOT Intergovernmental
Review Program

Attachments

Nick Burmas, HQ Structures Hyd., MS 9
Richard Felkins, HQ IGR, MS 32
Districts 6, 8, and 9 IGR offices
Scott Morgan SCH# 2001071035

State 7

SA7-1 Table 1.6-1 includes the requirement to obtain an Encroachment Permit from the California Department of Transportation (Caltrans) for any activities affecting highways or within highway easements, including road crossings. The need for an Encroachment Permit has also been added to section 4.8.5.

DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING – MS 32
1120 N STREET
P.O. BOX 942874
SACRAMENTO, CA 94274-0001

PHONE (916) 653-9689
FAX (916) 653-1447
TDD (916) 654-4014

#416
FERC

September 20, 2001

David P. Boergers, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Subject: California Depart of Transportation (CDOT) Review of the Notice of Intent/Preparation for the Kern River 2003 Expansion Project in San Bernardino and Kern Counties, Draft Environmental Impact Statement/Report, FERC Docket No. CP01-422-000, SCH# 2001071035

Dear Secretary Boergers:

Thank you for the opportunity to review this document. The California Department of Transportation previously reviewed this material with the CDOT headquarters Division of Structures Hydraulics, and the District 6-Fresno, District 8-San Bernardino, and District 9-Bishop intergovernmental review offices. The CDOT August 6, 2001 comments to Cy Oggins of the California State Lands Commission are attached. The CDOT comments for your notice are the same. If the project encroaches on, over or under state right of way or work is done in the proximity of state right of way, then a CDOT encroachment permit is required. Please see the attached August 6, 2001 letter for a more detailed discussion on encroachment and what needs to be accomplished. These comments apply to your project.

If you have questions regarding these comments in general, please call me at (916) 653-9689. Otherwise, please call the appropriate district intergovernmental review coordinators or District Encroachment Permit office.

Sincerely,

William J. Costa

William J. Costa, Manager
CDOT Intergovernmental
Review Program

Attachment

cc: Mike Boyle, FERC HQ, Washington D.C., FERC Docket No. CP01-422-000
Cy Oggins, CA State Lands Commission, FERC CP01-422-000 or SCH# 2001071035
Nick Burmas, HQ Structures Hyd., MS 9
District 6, 8, and 9, IGR Offices
Scott Morgan SCH# 2001071035

State

State 7

DEPARTMENT OF TRANSPORTATION
TRANSPORTATION PLANNING – MS 32
1120 N STREET
P.O. BOX 942874
SACRAMENTO, CA 94274-0001
PHONE (916) 653-9689
FAX (916) 653-1447
TDD (916) 654-4014

August 6, 2001

Cy R. Oggins
California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

Subject: CDOT Review of the Notice of Preparation for the Kern River 2003 Expansion Project in San Bernardino and Kern Counties, Draft Environmental Impact Report. SCH# 2001071035

Dear Mr. Oggins:

Thank you for the opportunity to review this document. The California Department of Transportation (CDOT) has reviewed this material with the CDOT headquarters Division of Structures Hydraulics, and the District 6-Fresno, District 8-San Bernardino, and District 9-Bishop intergovernmental review offices. CDOT has the following concerns and general comments:

- Any encroachment in (on, over or under) CDOT right of Way will require a CDOT encroachment permit. Longitudinal encroachments on restricted access right of way (i.e. primarily freeways) are generally not allowed. There is an appeal process that allows exceptions to this general rule. Caltrans encroachment permits are discretionary and not ministerial. Timely application for CDOT encroachment permits helps expedite the permit process. Permit application must be made with the appropriate District Encroachment Permit Engineer having jurisdiction (see attached map). Sufficient time must be allowed for the Permit Engineer and the district Environmental Branch to review and evaluate potential project impacts to CDOT right of way. These reviews might indicate the need for additional studies and clearances. Additionally, whenever encroachment involves a Caltrans bridge, please call Nick Burmas of the CDOT Division of Structures Hydraulics. Mr. Burmas can be reached at (916) 227-9478.
- Any work done within state right of way or in close proximity to state right of way must be addressed in the Environmental Impact Report. This report should discuss all potential impacts to the state right of way including environmental, hazardous materials, hydrology, preservation of traffic safety, etc.

If you have questions regarding these comments in general, please call me at (916) 653-9689. Otherwise, please call the appropriate district intergovernmental review coordinators or District Encroachment Permit office.

Sincerely,

William J. Costa

William J. Costa, Manager
CDOT Intergovernmental
Review Program

Attachment

cc: Nick Burmas, Structures Hyd., MS 9
District 6, 8, and 9, IGR Offices
Scott Morgan, SCH# 2001071035

STATE OF CALIFORNIA
Business, Transportation and Housing Agency
Department of Transportation

JEFF MORALES
Director
California Department of Transportation
1120 N Street
P.O. Box 942874
Sacramento, CA 94274-0001*
Phone: (916) 654-2852
Calnet: 8-464-2852

District 1
1656 Union Street
P.O. Box 3700
Eureka, CA 95502-3700*
Phone: (707) 445-6600
Calnet: 8-539-6600

District 2
1657 Riverside Drive
P.O. Box 496073
Redding, CA 96049-6073*
Phone: (530) 225-3428
Calnet: 8-443-3428

District 3
703 B Street
P.O. Box 911
Marysville, CA 95901*
Phone: (530) 741-4211
Calnet: 8-457-4211

District 4
111 Grand Avenue
P.O. Box 23660
Oakland, CA 94623-0660*
Phone: (510) 286-4444
Calnet: 8-541-4444

District 5
50 Higuera Street
San Luis Obispo,
CA 93401-5415
Phone: (805) 549-3111
Calnet: 8-629-3111

District 6
1352 West Olive Avenue
P.O. Box 12616
Fresno, CA 93778-2616*
Phone: (559) 488-4020
Calnet: 8-422-4020

District 7
120 South Spring Street
Los Angeles, CA 90012
Phone: (213) 897-3656
Calnet: 8-647-3656

District 8
464 West Fourth Street
6th Floor
San Bernardino, CA 92401
Phone: (909) 383-4561
Calnet: 8-670-4561

District 9
500 South Main Street
Bishop, CA 93514
Phone: (760) 872-0601
Calnet: 8-627-0601

District 10
1976 East Charter Way
P.O. Box 2048
Stockton, CA 95201
Phone: (209) 948-7543*
Calnet: 8-423-7543

District 11
2829 Juan Street
P.O. Box 85406
San Diego, CA 92186-5406*
Phone: (619) 688-6795
Calnet: 8-688-6795

District 12
3347 Michelson Drive, Suite 100
Irvine, CA
Mail: 3337 Michelson Drive, CN 380
Irvine, CA 92612
Phone: (949) 724-2000
Calnet: 8-655-2000

* zip code for P.O. Box

Caltrans

DISTRICT BOUNDARIES
AND
MAILING ADDRESSES

PREPARED BY
TRANSPORTATION SYSTEM INFORMATION PROGRAM
OFFICE OF HIGHWAY SYSTEM ENGINEERING

TOTAL P.04

JIM GERINGER
GOVERNOR

State of Wyoming
Office of Federal Land Policy
Art Reese, Director

N
W E
S

April 11, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, D.C. 20426

Re: Docket No. CP01-422-000
Kern River 2003 Expansion Project, Draft Environmental Impact Statement/Environmental Impact Report, State Identifier 2000-169

Dear Secretary Salas:

SA8-1 On behalf of the State of Wyoming, this office has provided the referenced document to all affected state agencies for their review, in accordance with State Clearinghouse procedures. Enclosed you will find letters from the Wyoming Game and Fish Department, the State Historic Preservation Office, the Wyoming Department of Environmental Quality and the Office of State Lands and Investments which resulted from their reviews. State agency comments are specific to their respective agency missions. While the State defers to their technical expertise in developing the State's position, the responsibility to ultimately articulate the official state policies and positions lies with the Governor or the Office of Federal Land Policy.

Having said that, the State has no objections to the proposed action. Please give every consideration to the enclosed comments. Please provide this office with either six hard copies or electronic copy (submit to OFLP@state.wy.us) of continued project information for review and distribution to interested agencies. Thank you for the opportunity to comment.

Sincerely,

Julie L. Kozlowski
Assistant Director

Enclosures (4)
cc: Wy. Game and Fish Department
State Historic Preservation Office
Wy Dept of Environmental Quality
State Lands and Investments
Leo Oggins, CSLC

Herschler Building, 1West ◆ 122 West 25th Street ◆ Cheyenne, Wyoming 82002-0060
Phone (307) 777-3736 ◆ Fax (307) 777-3524
OFLP@state.wy.us

State 8

SA8-1 Thank you for your comments. Each of the letters submitted by Wyoming agencies has been treated as a separate comment letter. See the responses to comments SA9-1 through SA12-1.

WYOMING
GAME AND FISH DEPARTMENT

Jim Geringer, Governor — John Baughman, Director

"Conserving Wildlife — Serving People"

April 8, 2002

WER 2771.05
Federal Energy Regulatory Commission
Draft Environmental Impact Statement
Kern River 2003 Expansion Project
State Identifier Number: 2000-169

Art Reese, Director
Office of Federal Land Policy
Herschler Building, 1W
122 W. 25th Street
Cheyenne, WY 82002

Dear Mr. Reese:

These comments regarding the Draft Environmental Impact Statement for the Kern River 2003 Expansion Project have been approved by the Director and are specific to this agency's statutory mission within State government which is "Conserving Wildlife, Serving People". In that regard, these comments are meant to, in association with all other agency comments, assist in defining the Official State Position. These comments defer to and are subordinate to the Official State Position.

SA9-1 **Terrestrial Considerations:**

We have no further comments on this project.

SA9-2 **Aquatic Considerations:**

We have only one additional comment on this project. In volume 1, page 4-51, the third paragraph refers to the Hams Fork River as being an intermittent stream. Although in recent years, during the current drought, the lower section of the Hams Fork River has nearly dried up, this river is still considered by the Department as a perennial waterbody.

Sincerely,

Bill Wichers
BILL WICHERS
DEPUTY DIRECTOR

BW:TC:as

These comments are reflective of a specific agency mission only. These comments defer to and are subordinate to the Official State Position.

Headquarters: 5400 Bishop Boulevard, Cheyenne, WY 82006-0001
Fax: (307) 777-4610 Web Site: http://gf.state.wy.us

State 9

SA9-1 Comment noted.

SA9-2 As presented in footnote "e" in table 4.3.2-2, the Wyoming Department of Environmental Quality reported that the Hams Fork River is classified as intermittent in the reach where the proposed project would cross the waterbody.

WYOMING

DEPARTMENT OF STATE PARKS & CULTURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE

Barrett Building
2301 Central Ave.
Cheyenne, WY 82002

(307) 777-7697
FAX (307) 777-6421

March 27, 2002

Art Reese, Director
Office of Federal Land Policy
Herschler Building, 1W
122 W. 25th Street
Cheyenne, WY 82002

RE: Kern River Expansion Project Draft Environmental Impact Statement (2000-169); SHPO #1188RLB026

Dear Mr. Reese:

SA10-1 Thank you for the opportunity to comment on the above referenced project. We have reviewed the Draft EIS and have no specific comments on the document. The project is proceeding under the terms of a Programmatic Agreement which provides stipulations for addressing the effects on historic properties included in or eligible for inclusion in the National Register of Historic Places.

Sincerely,

Judy K. Wolf
Review and Compliance Program Manager

Jim Geringer, Governor John T. Keck, Director

State 10

SA10-1 Comment noted.

The State
of Wyoming

Department of Environmental Quality

Jim Geringer, Governor

Herschler Building • 122 West 25th Street • Cheyenne, Wyoming 82002

ADMIN/OUTREACH	ABANDONED MINES	AIR QUALITY	INDUSTRIAL SITING	LAND QUALITY	SOLID & HAZ. WASTE	WATER QUALITY
(307) 777-7758	(307) 777-6145	(307) 777-7391	(307) 777-7369	(307) 777-7756	(307) 777-7752	(307) 777-7781
FAX 777-3610	FAX 777-6462	FAX 777-5616	FAX 777-6937	FAX 777-5864	FAX 777-5973	FAX 777-5973

April 8, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

RE: Response to the Draft Environmental Impact Statement for the Kern River 2003 Expansion Project

Dear Ms. Salas:

These comments regarding the proposed Kern River 2003 Expansion Project in Lincoln and Uinta Counties are specific to this agency's statutory mission within State government which is protection of public health and the environment. In that regard these comments are meant to, in association with all other agency comments, assist in defining the Official State Position. These comments defer to and are subordinate to the Official State Position.

Thank you for the opportunity to comment on the proposed natural gas pipeline facilities.

SA11-1 There are two Water Quality Division (WQD) permits that may apply to the project. Any or all of them may apply depending on the eventual scope of the project.

- ❑ Temporary Discharge Permit. Any discharges to "waters of the state" must be permitted under the National Pollutant Discharge Elimination System (NPDES) program. This program is part of the federal Clean Water Act, but is administered by the WQD. Coverage is required for discharges from cofferdam dewatering, discharges from hydrostatic pipeline testing, or discharge of other waste waters to waters of the state. For clarification waters of the state include rivers, streams, dry draws, wetlands, lakes, reservoirs and even stock ponds. The type of activity proposed can most likely be covered under the general permit for temporary discharges. This permit will require some sampling and will incorporate effluent limits for any constituents of concern. Roland Peterson (307-777-7090) can provide additional information.

These comments are reflective of a specific agency mission only. These comments defer to and are subordinate to the Official State Position.

State 11

SA11-1 These permits are included in table 1.6-1.

SA11-1 (cont'd)

- Storm Water Associated with Construction Activities. This permit is required any time a project results in clearing, grading, or otherwise disturbing five or more acres. The disturbed area does not need to be contiguous. The permit is required for surface disturbances associated with construction of the project, access roads, construction of wetland mitigation sites, borrow and stockpiling areas, equipment staging and maintenance areas and any other disturbed areas associated with construction. A general permit has been established for this purpose and either the project sponsor or general contractor is responsible for filing a Notice of Intent (NOI) and complying with the provisions of the general permit. The NOI should be filed no later than 30 days prior to the start of construction activity. Please contact Barb Sahl at 307-777-7570.

- Section 404. While not a state permit, this project will require a section 404 permit from the US Army Corps of Engineers. Any time work occurs within waters of the US a 404 permit may be required. Please contact the Corps (307-772-2300) for specific information regarding jurisdiction and requirements.

SA11-2 These are the permits most likely to affect the project. The Department of Environmental Quality would like to see the NEPA analysis and resulting construction project address any potential effects to surface water quality that may occur as a result of existing or proposed construction practices in riparian areas. Also, every effort to prevent erosion of any kind should be taken. Any sediment created by the poject can enter and effect the water quality of the receiving water

We appreciate the opportunity to comment in this process and look forward to working with you in the future. If you have any questions, please feel free to contact Jeremy Lyon at 307-777-7588.

Sincerely,

Dennis Hemmer
Director
Department of Environmental Quality

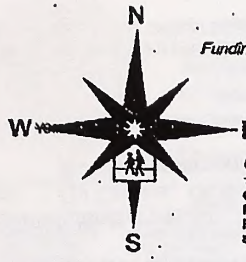
DH/JML/bb/2-1145.ltr
cc: Cy Oggins, California State Lands Commission, 100 Howe Avenue, Suite 100 South, Sacramento, CA 95825

c:\mystuff\d\spcwpd\spc02\kern_river.let

These comments are reflective of a specific agency mission only. These comments defer to and are subordinate to the Official State Position.

State 11

SA11-2 See the response to comment FA8-15. Potential impacts on surface water quality are discussed in section 4.3.2. Implementation of KRGT's WWCM Procedures (see appendix F) and UECRM Plan (see appendix E) would minimize the potential for erosion and subsequent sediment deposit in waterbodies.



Funding Wyoming Public Education

Jim Geringer
Governor

Ron Arnold
Director

Office of State Lands and Investments
122 West 25th Street
Cheyenne, Wyoming 82002
Phone: (307) 777-7331
Fax (307) 777-5400
slfmail@state.wy.us

March 6, 2002

MEMORANDUM

TO: Ron Arnold, Director

FROM: Harold Kemp 3/6/02

SUBJECT: Draft Environmental Impact Statement/Report – Kern River 2003 Expansion Project

SA12-1 I have reviewed the associated and attendant documentation related to the subject, and find no issue with development of the additional pipeline delivery capacity to California markets for Wyoming gas. I see nothing in the EIS draft which appears to reflect negatively upon the ability of the Wyoming Office of State Lands and Investments to administer and develop its mineral acreage in the proximate area of the proposed pipeline R.O.W..

State

12

SA12-1 Thank you for your comments.

Comments on the Draft EIS/EIR and Responses

LOCAL AGENCIES

City of Fontana
CALIFORNIA

FILED
OFFICE OF THE SECRETARY
02 MAR 12 AM 9:36
FEDERAL ENERGY
REGULATORY COMMISSION

March 8, 2002

Ms. Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT – KERN RIVER 2003 EXPANSION PROJECT OEP/DEER/GAS BRANCH 1, KERN RIVER GAS TRANSMISSION COMPANY, FERC DOCKET NO. CP01-422-000, CA CLEARINGHOUSE NO. 2001071035, BLM REFERENCE NO. CACA-43346
LOCATION: WYOMING, UTAH, NEVADA AND CALIFORNIA

Dear Ms. Salas,

LA1-1 The City of Fontana is in receipt of the above referenced documents (which include volumes one [1] and two [2].) After city staff reviewed the documents in question, the City of Fontana has no comment at this time.

The City of Fontana would like to take this opportunity to thank you for including us on the project's distribution list.

Sincerely,

COMMUNITY DEVELOPMENT DEPARTMENT
Planning Division

Debbie M. Brazill
Deputy Community Development Director

c: Cy Oggins – California State Lands Commission

020320 0489-2

DOCKETED

www.fontana.org
8353 SIERRA AVENUE FONTANA, CALIFORNIA 92335-3528 (909) 350-7600
recycled paper

Local

LA1-1 Comment noted.

CITY OF ONTARIO

303 EAST "B" STREET, CIVIC CENTER ONTARIO CALIFORNIA 91764-4196
(909) 395-2000
FAX (909) 395-2070

GARY C. OVITT
MAYOR
GERALD A. DuBOIS
MAYOR PRO TEM
ALAN D. WAPNER
PAUL S. LEON
DEBORAH S. ACKER
COUNCIL MEMBERS
GREGORY C. DEVEREAUX
CITY MANAGER
MARY WIRTES, MMC
CITY CLERK
JAMES R. MILHISER
TREASURER

May 24, 2001

Cy Oggins
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 92825

RE: Docket No. CP01-422-000

Dear Ms. Salas:

LA2-1 Thank you for giving the City of Ontario the opportunity to review and comment on the above referenced project.

We have completed our review of the Draft EIS/EIR for the proposed project. At this time, we have no concerns or comments regarding the project.

We appreciate being informed of the project and look forward to continued communications regarding this project.

Sincerely,

ONTARIO PLANNING DEPARTMENT
Jerry L. Blum, Planning Director

Richard Ayala
Senior Planner

RA:dm

Local 2

LA2-1 Comment noted.

ORIGINAL

KERN COUNTY WASTE MANAGEMENT DEPARTMENT
Daphne H. Washington, Director
2700 "M" Street, Suite 500
Bakersfield, CA 93301-2370
(661) 862-8900
(800) 552-KERN (option 6)
Fax: (661) 862-8901
http://www.co.kern.ca.us/wmd/wmd.htm

April 4, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE., Room 1A
Washington D.C. 20426

02 APR -8 AM 10:53
FEDERAL ENERGY REGULATORY COMMISSION

Dear Mrs. Salas

RE: OEP/DEER/Gas Branch 1
Kern River Gas Transmission Company
FERC Docket NO. CP01-422-000
CA Clearinghouse No. 2001071035
BLM Reference No. CACA - 43346

LA3-1

The Kern River Gas Transmission Company is proposing to construct a 717.5 mile long underground natural gas pipeline from Opal, Wyoming to Mojave, California. The pipeline is about 42 to 48 inches in diameter within a 75 foot right-of-way easement. The Kern County Waste Management Department (WMD) has reviewed the Draft Environmental Impact Report for this project and has the following comments:

The pipeline's proposed alignment is about 660 feet north of the Boron Sanitary Landfill in Kern County, California. The landfill is located ½ mile south of the community of Boron, California. The landfill's specific location is the N ½ of the NW 1/4 of the SW 1/4 of the Section 5, T.10 N., R. 7 W.; SB&M. Vehicular access to the landfill is by way of Boron Avenue, a two lane paved road. Boron Avenue crosses over a railroad track and is the only all-weather paved public road to the landfill. There are no known alternative easements (public or private) to serve the landfill. WMD is concerned that pipeline construction crossing Boron Avenue at right angles will temporary prevent or hamper public vehicular access to the active landfill. Therefore, WMD recommends the following mitigation measures.

- The EIR should include mitigation to provide vehicular access to this landfill at the time of construction at Boron Avenue.
- The EIR should specify measures which ensure public safety and minimize traffic disruptions on Boron Avenue.
- The contractor/engineer to submit design treatment information and operational details regarding the Boron Avenue / pipeline construction area to the Kern County Waste Management Department for review and approval, in order to assure public access to the landfill.
- The EIR should specify that utilities which serve the landfill (water, power poles, and phone) shall not be disrupted, or damaged in anyway. There are other utilities along Boron Avenue where construction is proposed.

020409 0891.2

Winner of local, state and national awards for innovation and efficiency.

FERC DOCKETED

Local

3

LA3-1 The EIS/EIR does not stipulate the construction method for each road crossed by the Kern River 2003 Expansion Project because all crossings would be completed in accordance with permits issued by the applicable Federal, state, or local agency. Section 4.8.5 provides general information on the impacts associated with each crossing method and the measures KRGT would implement to minimize those impacts. Figure 2.2.1-1 (sheets 1 through 5) and figure 2.3.1-1 depict typical right-of-way cross sections and construction techniques used for general pipeline installation. The figures do not depict special construction techniques (see section 2.3.2).

Boron Avenue would be bored as stipulated in KRGT's Encroachment Permit from the Kern County Road Department. Use of the bore construction method would avoid disrupting traffic on Boron Avenue. Construction in this area is not expected to disrupt other utility service (water, power poles, and phone) to the Boron Sanitary Landfill. KRGT would be responsible for submitting design treatment information and operational details regarding construction in the Boron Avenue area to the Kern County Waste Management Department and for providing notification 3 days in advance of construction in this area.

LA3-1 (cont'd)

Map Figures on pages 2-11, 2-12, 2-13, 2-14, 2-15, and 2-24 of the EIR shows typical open trench excavation methods for roads; these diagrams, however, do not include the option of boring. Page 2-27 states: "Major paved roads generally would be crossed by boring underneath the road. Other smaller roads would be open-cut. The open cut methods would requires closure of the road to traffic and establishment of detours. Most open cut road crossings would be completed in one day". Other than some general criteria (major roads versus small roads), these maps and statements indicate some uncertainty on how the pipeline will cross various roads.

The draft EIR states pipeline construction through road rights-of-way will either be bored or open trench cut. Both methods of construction will interrupt traffic, although boring will be less disruptive and is the preferred method. We understand Paragon Partners has obtained an Encroachment Permit, dated November 21, 2001, from the Kern County Road Department. The permit requires pipeline boring under Boron Avenue. However, this permit has not been activated and the EIR allows different scenarios, other than boring.

In summary, WMD's requests that the EIR to be specific regarding the Boron Avenue crossing construction. State waste regulations require an all-weather paved public road to sanitary landfills. Since interruption of service is not an option, WMD would appreciate written notification three days in advance of pipeline construction near the Boron Sanitary Landfill. Please note that there are other special communications utilities along Boron Avenue with links to Edwards Air Force Base.

If you have any questions please contact Doug Landon at (661) 862- 8936, or Donn Fergerson at (661) 862- 8765.

Sincerely,
DAPHNE H WASHINGTON, DIRECTOR

BY: Nancy L. Ewert, P.E
Technical Division Manager

NLE:DF:GR:gs
I:\LETTER\2002\02-112-DF-GR-gs
CC: Cy Oggins, California State Lands Commission, 100 Howe Ave, Suite 1900 South, Sacramento, CA 95825
Federal Energy Regulatory Commission, 888 First Street, NE., Room 1A, Washington D.C.
California State Lands Commission, 100 Howe Avenue, Suite 1900 South, Sacramento, Ca.
Williams Gas Pipeline, C/O Paragon Partners LTD, 295 Chipeta Way, Salt Lake City, Utah
California Integrated Waste Management Board, 1001 "I" Street, P.O. Box 4025, Sacramento, Ca. 95812 - 4025
Edwards Air Force Base, AFFTC / XRX Bldg 0001, Rm 110 #1, South Rosamond Blvd. EAFB, Ca. 93524 -1936
Kern County Road Department 2700 "M" Street, Bakersfield, Ca. 93301
Kern County Planning Department, 2700 "M" Street, Bakersfield, Ca. 93301
WMD: Doug Landon, Brian Klatt, Joe Gillick
File: *Boron Sanitary Landfill*
KCWMD Environmental Response Files

Local

LAND USE SERVICES DEPARTMENT

COUNTY OF SAN BERNARDINO
ECONOMIC DEVELOPMENT
AND PUBLIC SERVICES GROUP

PLANNING DIVISION
385 North Arrowhead Avenue • San Bernardino, CA 92415-0182 • (909) 387-4131
First Floor Fax (909) 387-3249 • Third Floor Fax (909) 387-3223
15505 Civic Drive • Victorville, CA 92392 • (760) 243-8245 • Fax (760) 243-8212
http://www.sbcounty.gov/landuseservices

MICHAEL E. HAYS
Director of Land Use Services

April 9, 2002

Magalie R. Salas, Secretary
Federal Energy-Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Cy Oggins
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT FOR THE KERN RIVER 2003 EXPANSION PROJECT

Dear Ms. Salas:

LA4-1 Thank you for providing our office a copy of the above-stated Environmental Impact Statement/Environmental Impact Report. We recognize that the vast majority of this pipeline is to be placed in existing right-of-way, and as a result, the potential environmental impacts will be minimized. We have reviewed this document and have no comments at this time. Please keep us on the distribution list, and continue to notify us regarding future actions on this project.

Sincerely,

Matthew W Slowik

MATTHEW W. SLOWIK, MURP
Senior Associate Planner
Advance Planning Division

MWS:dja

Env\Comment Letters\Kern River 2003 Expansion Project Comments on Draft EIS_EIR.doc

Local

4

LA4-1 Comment noted.

ENVIRONMENTAL HEALTH SERVICES DEPARTMENT

STEVE McCALLEY, R.E.H.S., Director
2700 "M" STREET, SUITE 300
BAKERSFIELD, CA 93301-2370
Voice: (661) 862-8700
Fax: (661) 862-8701
TTY Relay: (800) 735-2929
e-mail: *ehd@co.kern.ca.us*

RESOURCE MANAGEMENT AGENCY

DAVID PRICE III, RMA DIRECTOR
Community Development Program Department
Engineering & Survey Services Department
Environmental Health Services Department
Planning Department
Roads Department

April 15, 2002

Federal Energy Regulatory Commission
Magalie R. Salas, Secretary
888 First Street NE, Room 1A
Washington, DC 20426

SUBJECT: OEP/DEER/Gas Branch 1
Kern River Gas Transmission Co.
FERC Doker No. CP01-422-000
CA Clearinghouse No. 2001071035
BLM Reference No. CACA-43346

Ladies and Gentlemen:

The Kern County Environmental Health Services Department has reviewed the subject project and offers the following comments for your consideration:

LA5-1 • Prior to reconstruction or replacement of any water wells that are damaged in Kern County because of pipeline construction activities, permits must be obtained from the Kern County Environmental Health Services Department.

LA5-2 • Interim temporary domestic water supplies shall receive approval from the Kern County Environmental Health Services Department prior to use.

If you should have any questions, please contact our Department at (661) 862-8700.

Sincerely,

Steve McCalley, Director

By: Thomas Hardy, R.E.H.S.
Environmental Health Specialist III
Water Quality Program

TH:jrw

(water\hardy\fed ero-ltr.wpd)

Local

5

LA5-1 Section 4.3.1.2 has been revised to include a statement that KRGT would obtain the applicable state and local permits before repair or replacement of any water wells damaged during construction.

LA5-2 Section 4.3.1.2 has been revised to include a statement that KRGT would obtain the applicable state and local permits for any temporary domestic water supplies provided during construction.

Comments on the Draft EIS/EIR and Responses

COMPANIES AND ORGANIZATIONS

WASATCH FRONT REGIONAL COUNCIL

295 NORTH JIMMY DOOLITTLE ROAD, SALT LAKE CITY, UTAH 84116
PHONE OGDEN 801-773-5559 • PHONE SALT LAKE 801-363-4250 • FAX 801-363-4230

WILEUR R. JEFFERIES, Executive Director • Web Site wfrc.org • E-mail wfrc@wfrc.org

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Utah Association of Counties

George Garwood
Utah League of Cities & Towns

Gregory S. Bell
Envision Utah

March 27, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Reference Docket No. CP01-422-000
RE: Kern River Pipeline DEIS comments.

To Whom It May Concern:

CO1-1 For a short distance (roughly 3 miles), the alignment for the Kern River pipeline is in conflict with our preferred alignment for the "Legacy Highway/Western Transportation Corridor." An alternative alignment ranging from 75-100 feet west of the proposed would accommodate our needs. This letter addresses the issue. We hope you will consider this alternate alignment. We are negotiating with PacifiCorp and Williams over this minor adjustment, and hope it can be found environmentally acceptable.

In conjunction with the Utah DOT, we completed this corridor identification study in May of 2001, and will be initiating an EIS for the project this fall. As near as we can tell, your only references to this study are on pages 4-270, and 4-274. Here you state, "...a proposal by the Utah DOT to construct a new highway near the City of Jordan, Utah. Based on the schedule of these projects, it seems unlikely that they would be constructed during the same time as the KRGT facilities." This is an inadequate assessment of relationship these projects share.

In a 3-mile segment of concern (5800 West, from 5400 S to 7800 S, Salt Lake County), our preservation study revealed that only two practical options exist for highway construction:

1. Remove incompatible utilities from the existing PacifiCorp right-of-way to another right-of-way 1-mile west. This became our preferred alternative.
2. Leave the utilities in place, and place the highway in another right-of-way 1-mile west.

Companies/Organizations 1

CO1-1 An alternatives analysis for this proposed alignment is provided in section 3.3.2.

CO1-1 (cont'd)

The utility corridor right-of-way is 300 feet. The highway need occupy only the eastern 180-200 feet, and could allow both the old and new pipelines to occupy the western 100-feet. Any high voltage towers would have to be moved.

We met with William's representatives last spring to determine if there was an opportunity to construct the pipeline in the utility corridor we are preserving to the west. They indicated that it would be difficult to obtain environmental clearance outside of the existing utility corridor, and where we had not yet determined our ultimate action, their best bet was to remain in the existing corridor. We conceded, but requested that they attempt to build the pipeline as far west as possible within the existing corridor, so that both the pipeline and highway would be compatible within the 300-foot space. Had our project been identified as a major stakeholder in your DEIS, there probably would have been opportunities to consider alternate alignments that could have saved the state millions of dollars in relocation costs that we will now likely incur.

This is water under the bridge. Instead of asking you to consider more significant alignment shifts that would have been possible had we been stakeholders, we would like to make the best of the current circumstances by requesting you assess this minor alignment shift that will save our taxpayers an expected minimum cost of $4-6 million if our preferred alternative is implemented.

To solve this problem, we intend to negotiate with both PacifiCorp and Williams to move the pipeline 25 feet west of existing, rather than 75 feet east of existing as proposed. We believe we have a proposal that both companies will find acceptable. We understand that part of the reason for the alignment shown is to better accommodate a proposal for a 3rd 345-Kva line. It is our intent to convince PacifiCorp that we will provide an alternative right-of-way to construct this 3rd long-range tower. This will free them to allow Williams to construct within 25 feet of their existing pipeline, which will save us millions of dollars in relocation costs for this alternative.

Concerning the Kern River EIS, we hope you will not preclude our ability to negotiate with Williams and PacifiCorp over the next few months. In particular, addressing the following issues should make this possible.

1. Please study a minor realignment that would place the pipeline 25 feet west of existing between 5500 South and 6100 South.
2. Please study a minor realignment that would place the pipeline 25 feet east of existing between 6100 South and 7800 South.
3. Both of these would bring the pipeline closer to existing homes, and would narrow the construction workspace, but not to the extent that will be found in many other areas of the same corridor.
4. A finding of "no significant impact" will allow us to negotiate with PacifiCorp and Williams over this option.

At this point, is it still possible to study this minor variation of the alignment? Is it possible for you to have someone visit with us about this and a few other conflicts? If so, and

Companies/Organizations 1

CO1-1 (cont'd)

supposing it is acceptable, is it possible to obtain a record-of-decision allowing either of the two alignment options, thus leaving the decision up to Williams, PacifiCorp, and UDOT?

Please let us know if you will address each of these issues, and if not, why. As I've noted, we are quite disappointed that we were not identified as significant stakeholders early in your process. There would have been ample opportunity to find compatible solutions if we had been involved. Please explain how you went about identifying stakeholders, and how it is possible that such a high-profile project immediately adjacent to and in some cases within this utility corridor could be so drastically overlooked in your EIS.

Thank you,

Mike Brown
Transportation Engineer

CC:

Will Jefferies, WFRC
Doug Hartery, WFRC
Cory Pope, UDOT
John Quick, UDOT
Dennis Harper, PacifiCorp
Ted Williams, PacifiCorp
George Shreck, PacifiCorp
Rick Huff, Williams
Sean Black, Williams
Cy Oggins, California State Lands Commission

Attachments:

Memo on gas line conflict
Project maps showing areas of conflict

Companies/Organizations 1

Companies/Organizations 1

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Michael J. Cragun
Utah Association of Counties

George Garwood
Utah League of Cities & Towns

Gregory S Bell
Envision Utah

March 27, 2002

Mr. Steve Elder
PacifiCorp Lead Senior Engineer, Lines & Civil Design
825 NE Multnomah, Suite 1600
Portland OR, 97232

Dear Mr. Elder,

One of our state's primary options for a future highway alignment is to utilize the eastern 2/3^{rds} of the 300-foot, 5800 West utility corridor between 5400 South and 7000 South in Salt Lake County. Our plan would relocate any utilities in this range to a right-of-way being preserved slightly west. It has come to our attention that a new 36" gas will be built this spring in the eastern 2/3^{rds}, and would have to be moved in the event of a highway at great expense to the state. Williams reports that the reason this line cannot be built in the western 1/3rd is an offset constraint for a 3rd long-range, high-voltage tower.

Williams has expressed to us a desire to build the line west of the existing line if PacifiCorp will ease their constraints for this tower. We would like to meet with relevant parties to discuss this possibility. UDOT is actively protecting a right-of-way to the west that will likely become either a utility corridor or a highway. Either way, we could allow the 3rd tower to be built in this western alignment, thus allowing you to ease constraints on Williams. I have attached a tech memo that further details the issues.

We are also submitting comments on the Kern River DEIS in hopes they will address this minor alignment shift. Hopefully they can do so, and hopefully it will be found to have no significant impact beyond what is already planned.

We regret that this request comes so late in the process. We communicated our plans to William's officials in April of 2001, but did not follow up on it until November, when we learned the alignment was centered in the right-of-way due to 3rd tower constraints. Where that was entering the height of Olympic fever, we were unable to attend to the issue until now. Please let me know if we can meet to see if some arrangement

is possible. I assume appropriate representatives from PacifiCorp, Williams, UDOT, and possibly the EIS will be necessary.

In the event that our preferred alternative eventually becomes a highway, hopefully our efforts can avoid this needless expense to taxpayers. You may contact me at 801-363-4250 or mbrown@wfrc.org to answer any questions or to arrange a meeting.

Thank you,

Mike Brown

Mike Brown
Transportation Engineer

CC:

Will Jefferies, WFRC
Doug Hattery, WFRC
Cory Pope, UDOT
John Quick, UDOT
Dennis Harper, PacifiCorp
Ted Williams, PacifiCorp
George Shreck, PacifiCorp
Rick Huff, Williams
Sean Black, Williams

Memorandum

WASATCH FRONT REGIONAL COUNCIL

295 N. Jimmy Doolittle (5375 West), Salt Lake City, Utah 84116
Ogden 801-773-5559 SL 801-363-4250 Fax 801-363-4230
Wilbur R. Jefferies, Executive Director • Web Site www.wfrc.org

Michael R. Brown, Transportation Engineer
Direct line 363-4230 x132
mbrown@wfrc.org

Date: 11/15/2001 9:43 AM
To: Cory Pope, Fred Doehring, John Quick
Re: Gas line, petro line
CC: Will, Mick, Doug

This memo is to inform you of an opportunity to save $4-6 million dollars in the construction of the Western Transportation Corridor. Our plan calls for relocation of a high-voltage tower between 54th and 70th South – where the WTC would occupy the space. The existing gas line could co-exist with the highway, since it is 200' from the eastern edge of the right-of-way. Williams Petroleum will construct another 36" gas line along side the first this spring. PacifiCorp is requiring Williams to maintain the 35' offset from the centerline of future high-voltage towers. Note from the drawing below that there is insufficient room to construct this line west of the existing, if they must maintain this offset from the 3rd tower. Hence, the reason they have designed the line to go between the 1st and 2nd tower. Williams has indicated a preference to construct west of existing, if PacifiCorp would ease their constraints. As designed, it would need to be removed if the WTC occupies the eastern portion of the corridor. The estimate for gas line construction is $2 million/mile * 5-6 miles to route it 1-mile west around the problem area, or 2-3 miles of moving it 75-100 feet west within the same corridor. By the way, the same story applies to a 12" petroleum line (0.2 million/mile) also planned for the east edge of the corridor in 2002.

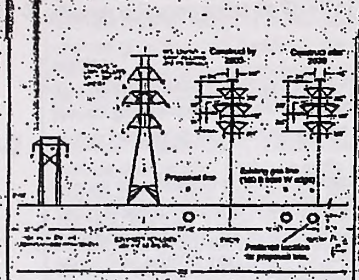
Though Williams has sign-off from FERC for construction this spring, it should still be possible to get both PacifiCorp and Williams to allow construction west of existing if UDOT can promise PacifiCorp that they will handle the right-of-way for the 3rd tower. The promise would be two-fold:

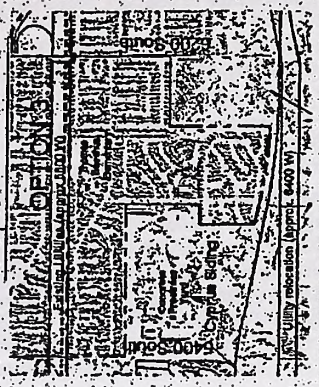
1. If the WTC needs to move electric lines from the corridor, UDOT will provide PacifiCorp with ownership of an equivalent 300' corridor slightly west. (There should be little risk in this promise, since it is the current plan).
2. If instead the WTC itself occupies the corridor further west, (hence fouling up the gas line offset from the 3rd line), UDOT will obtain sufficient right-of-way in their corridor to allow construction of the 3rd tower.

Thanks for considering this,

Mike Brown

Companies/Organizations 1





Companies/Organizations 1

NATIONAL WILD HORSE ASSOCIATION

ESTABLISHED 1971

Cy Oggins
California State Lands Commission
100 Howe Avenue, Suite, 100 South
Sacramento, CA 95825

REFERENCE DOCKET NO, CP01-422-000 April 2, 2002

Dear Cy Oggins

CO2-1 The Kern River 2003 Expansion Project Draft EIS has little to no recognition of impacts to wild horses and burros. The expansion project goes through populated areas of the Red Rock Herd Area and within 100 feet of a main water source referred to as Tunnel Springs. The Kern River pipeline will directly and indirectly affect wild horses and burros. The disturbance in the Red Rock Herd Area due to the construction and influx of people, especially near a main water source and across a migration route, will cause life threatening concerns.

Wells provided in advance of the disturbance, in the already allocated areas of the Herd Area will lessen the dependency on the affected water source. This would also provide a water source east of Tunnel Springs limiting the necessity to migrate across the Kern River pipeline from forage to water.

CO2-2 Special attention must be given to trenching. Digging in advance of the actual laying of pipe should be kept at a minimum in the Herd Area. Open ditches are a sure death trap for wild horses and burros. Areas to cross must be provided at reasonable distances and flagged fencing of open holes an absolute requirement.

CO2-3 The influx of people as well as the construction in the area could have an affect on foaling and the survival of youngsters. Consideration to the timing and season of disturbance and the stress it would have on the wild horses, burros and their foals must be given.

Theses concerns must be addressed and mitigation must be completed to lessen the impacts to wild horses and burros before any intrusion takes place.

Sincerely,

Billie Young, President
National Wild Horse Association

cc:
Mark Morse, BLM Las Vegas Field Manager
Gary McFadden, BLM Horse & Burro Specialist

P. O. Box 12207 • Las Vegas, Nevada 89112 • (702) 452-5853

Companies/Organizations 2

CO2-1 See the response to comment SA2-3.

CO2-2 See the response to comment SA2-2. The BLM does not recommend fencing the pipeline because the fencing itself could be a hazard to horses and burros and would introduce undesirable foreign barriers to them. Additionally, fencing would create a safety hazard to recreationists in this area.

CO2-3 The construction schedule of the project was based on many factors, including agency recommended timing restrictions, weather constraints, and active periods of special status species. The currently proposed schedule minimizes potential impacts on the majority of season-sensitive resources potentially occurring along the route. Additionally, the majority of construction activities are expected to be completed before the peak of foaling in areas of the project with the potential to contain wild horses and burros.

NEVADA OUTDOOR RECREATION ASSOCIATION, INC.
P.O. Box 1245
Carson City, Nevada 89702-1245

April 8, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, D.C. 20426

Reference Docket No. CP01-422-000

The following comments are being provided on the Draft Environmental Impact Statement/Environmental Impact Report for the Kern River 2003 Expansion Project. Major concerns are with the air quality analysis and the analysis of the "no action alternative."

CO3-1 The air quality analysis is seriously flawed. Expansion of the Kern River gas pipeline with a second pipeline will facilitate the construction of numerous gas-fired power plants in southern Nevada. The cumulative impacts of these power plants have not been adequately examined either in this EIS or in other referenced environmental documents.

CO3-2 The Las Vegas valley, within Clark County, has for years been classified as nonattainment for carbon monoxide. Only recently has the area been able to avoid serious exceedances of the National Ambient Air Quality Standards (NAAQS) for carbon monoxide on a yearly basis. At present, the Las Vegas valley is in non-attainment for PM_{10}. The Las Vegas valley and Clark County are reported to be close to nonattainment for ozone. The United States D.C. Circuit recently ruled that the EPA was able to promulgate new, lower NAAQS for ozone and $PM_{2.5}$. The Grand Canyon Transport Commission adopted a number of recommendations and guidelines for the Southwest that were intended to preserve and improve the visibility in Class 1 areas and national parks in southern Utah and northern Arizona. None of these facts have been mentioned or adequately addressed in this environmental impact statement.

CO3-3 "In the Apex Valley, all pollutants were determined to be well below the NAAQS except for PM_{10} emissions, which exceeded the 24-hour threshold once in 1998 and once in 1999." [page 4-278]. This statement grossly misrepresents the situation in the Apex valley. Monitoring data from 2000 and 2001 are not referenced, nor are reports that this area, which had been previously an area or pristine air quality prior to the development of the Apex Heavy Industry Industrial Park, is now being seriously considered as a nonattainment area for PM_{10}. Dust control regulations for the nonattainment Las Vegas Valley will now be applied to the Apex area.

CO3-4 "CO levels recorded for the Las Vegas area are well below the NAAQS." [4-278] Where do the

Companies/Organizations 3

CO3-1 Although the KRGT pipeline may supply natural gas to power plants in the Las Vegas area, the Kern River 2003 Expansion Project is not facilitating the construction of these power plants. On the contrary, the expansion is being proposed as a result of the increased demand for electricity in the area and the natural gas needs of the proposed power plants. The anticipated air quality impacts from the power plants in the Las Vegas area have been discussed in section 4.13.11 because these power plants are reasonably foreseeable projects in the same time frame as the Kern River 2003 Expansion Project. The impacts of these power plants will not cause or contribute to an exceedance of an ambient air quality standard.

CO3-2 As indicated in section 4.11.1, it is acknowledged that part of Clark County is classified as non-attainment for carbon monoxide (CO) and particulate matter less than 10 microns in diameter (PM_{10}). The Las Vegas Valley has had six measured violations of the CO standard since 1996; however, these violations were measured at two of the eight Las Vegas area monitoring stations. Therefore, it appears that the high CO concentrations are localized and thus the Las Vegas non-attainment area only covers part of the Las Vegas area. In addition, the KRGT compressor stations are not located in this non-attainment area. The emissions from the KRGT compressor stations associated with the proposed expansion are not likely to have a significant impact an ambient air quality because the compressor stations are minor sources of PM_{10} and CO emissions.

See also the response to comment CO3-1 regarding the relationship between the KRGT pipeline and the Las Vegas area power plants.

Regarding the new particulate and ozone standards, the U.S. Circuit Court of Appeals for the District of Columbia ordered the U.S. Environmental Protection Agency (EPA) to reevaluate its new fine particulate and 8-hour ozone standard in May 1999. The court's ruling technically allowed the new standard to exist, but made it unenforceable until the justification for it was clarified. In February 2001, the Supreme Court ruled against industry arguments that the EPA exceeded its lawmaking authority when it set the revised standards in 1997 and did not question the underlying health science used to establish the standards. However, the Supreme Court ruled that the EPA's implementation policy for the revised standards was unlawful and remanded them back to the EPA. Therefore, the potential implications of the proposed fine particulate and 8-hour ozone standards have not been included in the cumulative impact analysis because these standards have not yet been legally implemented.

The Grand Canyon Visibility Transport Commission (GCVTC) was created to advise the EPA on strategies for protecting visual air quality at national parks and wilderness areas on the Colorado Plateau. The GCVTC was not established as a rule-making entity but rather to advise the EPA on its environmental policies affecting the visibility of the regional Class I areas. For this reason the recommendations from the GCVTC have not been included in this EIS/EIR.

CO3-3 Based on the EPA AIRdata network, the ambient air monitoring station near the Apex Heavy Use Industrial Park began operation in 1998. Therefore, no monitoring data exist for this area prior to 1998. The available data indicate one exceedance in 1998, one in 1999, two in 2000, and none in 2001. The 2001 data currently consist of approximately 8 months worth of measurements and indicate much lower ambient concentrations than the previous 3 years.

CO3-4 See the response to comment CO3-2 regarding CO concentrations in the Las Vegas area. Section 4.13.11 has been revised to clarify this statement.

CO3-4 (cont'd) authors of this statement come up with this statement? It may be true for some stations. It may be true some of the time, but the statement belies the fact that the Las Vegas valley has struggled for years to come into attainment with the CO standard and future growth jeopardizes the valley staying in compliance with this standard.

CO3-5 "Cumulative impacts of air emissions from all potential sources were assessed to the extent possible for reasonably foreseeable projects associated with the Moapa Paiute Energy Center." [page 4-279] Given the facts we have presented earlier and our problems with just two citations from the air quality section, we have problems accepting the argument that the cumulative air quality impacts from this proposed project and related energy projects have been adequately assessed. Albeit, the authors may not be saying that the impacts have been "adequately assessed". They may simply be saying that "to the extent possible" for "reasonably foreseeable projects associated with the Moapa Paiute Energy Center", they have been assessed. We find this to be inadequate and unacceptable.

While we have not been furnished a copy of the Moapa Paiute Energy Center environmental documentation and reviewed their analysis of the cumulative air quality impacts of major new sources and energy plants in southern Nevada, we find the table and reference to the Moapa Paiute Energy Center draft to be troubling. Prevention of Significant Deterioratingb (PSD) regulations under the Clean Air Act were designed to prevent areas in attainment, for which air quality was relatively good, from being developed and degraded to the point to where they became nonattainment areas. Furthermore, the regulations and authorizing Act were intended to prevent new sources from locating in areas that were quite clean when they could be located in dirtier areas with more rigorous and air pollution controls. New sources, located in attainment areas would be required to use best available control technologies (BACT); however, if the pollution increment from a single source, or combination of sources using BACT proved to be too high, then additional controls would be required, or the source may not be permittable in the area. The table does not adequately reflect, nor does this environmental impact statement adequately consider, the remaining allowable increments for PSD after earlier sources have already taken a part of those increments. The problems that southern Nevada has in preventing significant deterioration of air quality in our attainment areas are serious and deserve more attention..

The PSD increment and analyses should incorporate the baseline and ambient air quality levels that were in existence at the time that the PSD provision was incorporated into the Clean Air Act. Instead, the air quality analyses for PSD referenced in this EIS appear to use the most recent baseline air quality levels to assess whether additional sources may be permitted. This mindset leads to a continued, gradual degradation of air quality in the area that was neither envisioned, nor permitted by the authors of the PSD provision of the Clean Air Act. It leads proponents of proposed major sources to do a PSD analysis after earlier new sources have upped the baseline and to conclude that their proposed new source will still be within the PSD increment specified in the law and regulations and that national ambient air quality standards will not be violated. A steady, gradual impairment of air quality results, and this is not permissible. This interpretation, and weak enforcement of PSD provisions in southern Nevada, has allowed existing and proposed new sources in the vicinity of Apex to create a nonattainment area for PM_{10} when PSD regulations should have never permitted this area from ever getting close, much less violate,

CO3-5 Section 4.13.11 includes information from the Moapa Paiute Energy Center draft EIS regarding the impacts of the proposed power plants in the area near the Apex Industrial Park. These impacts have been included in section 4.13.11 to address the impacts from reasonably foreseeable projects in the vicinity of the Kern River 2003 Expansion Project.

The Prevention of Significant Deterioration (PSD) regulations require major sources to evaluate and implement the best available control technology (BACT) to minimize ambient air impacts. These power plants must demonstrate to the satisfaction of the reviewing authority that the impacts from the facility and surrounding sources will not violate the applicable air quality standards or increments. Each power plant discussed in 4.13.11 will likely be required to undergo PSD review due to its potential emissions. Any plant that cannot demonstrate compliance with the ambient air quality standards and PSD increments cannot be approved by the reviewing authority. The PSD regulations established requirements for new and modified sources in attainment areas to protect the existing air quality and prevent significant deterioration. In addition, the KRGT compressor stations in Clark County are small sources of emissions that do not require dispersion modeling under the local or Federal regulations, are not located in the PM_{10} and CO non-attainment areas, and are not expected to have a significant impact on ambient air quality.

Specific major source baseline dates were established by the EPA under the PSD program. These baseline dates are used to estimate the increased ambient air impacts of new projects on existing air quality after implementation of the PSD program. However, for areas like the Moapa/Apex Valley, no air quality monitoring data are available for the baseline date. Therefore, any PSD analysis would need to use the available data that seem most representative of the area at the baseline date. It should be noted that a PSD increment analysis has not been performed but rather the impacts that are identified in the cumulative impacts section are based on modeling that was performed for the Moapa Paiute Energy Center draft EIS and included all stationary sources (pre-baseline and post-baseline sources) as well as fugitive sources in the project area. Therefore, the impacts identified in table 4.13.11-3 are only comparable to the National Ambient Air Quality Standards. The baseline language has been removed from the cumulative impact section to help clarify the intent of the information.

CO3-5 (cont'd) NAAQS for any criteria pollutant. We recommend that this EIS, and the referenced, pending EIS documents, reexamine the air quality impacts of their proposed project, and other major new sources, on the air quality in southern Nevada.

CO3-6 Existing air quality analyses of air quality in southern Nevada have been highly localized and ignore larger scale issues such as attainment of $PM_{2.5}$ standards, attainment of the new, pending, lowered ozone standard and improvement of visibility on the region. Power plants, however clean they may be, add pollutants to the atmosphere that lead to ozone formation, the formation of fine particulates, and the reduction of visibility. All of the power plants in southern Nevada lie upwind of a region of the country that were singled out by Congress for special attention in a revision of the Clean Air Act. The Grand Canyon Transport Commission was established to protect National Parks and visibility in southern Utah and northern Arizona from the rapid urbanization and development of upwind areas. There is no mention of the Grand Canyon Transport Commission and their recommendations in this EIS; and no analysis is presented of the impacts of all of the proposed power plants on these larger scale air pollution problems.

CO3-7 It is reported by some that the lowered ozone standard for Clark County and widespread, rapid development of the area will lead to problems in keeping ozone levels below their present levels and below NAAQS. The growth of emissions of oxides of nitrogen and hydrocarbons from all sources should be considered now before more difficult choices and problems arise. This EIS fails to evaluate nonattainment of either the existing, or new, lowered ozone standard.

CO3-8 We find the analysis of the "no action alternative" to be fundamentally lacking. The assumption that growth in energy demand must be met by a growth of fossil-fueled energy plants and that this proposed pipeline project is the only, best alternative is wrong. Efforts to curb greenhouse gases, such as carbon dioxide, and to encourage the use of alternative energy sources should be discussed. Nevada has recently been at the forefront in encouraging alternative forms of energy such as wind and solar and some discussion of this, as it relates to supply and demand projections for electricity, needs to be included in the EIS. Furthermore, energy conservation and efficiency efforts need to be discussed as another way of meeting our energy needs.

Some may argue that larger issues do not deserve further examination in this EIS because this proposed project is merely the construction of a pipeline and that secondary, environmental issues are beyond the scope of this document. Unfortunately, similar arguments are made when the environmental impacts of individual power plants are examined. We maintain that the underlying principles of the National Environmental Policy Act are violated by these arguments, and CEQ regulations make clear that related impacts should be considered. (They may be addressed elsewhere and referenced, but they should be addressed.) In this EIS we find discussion of the "no action alternative" and secondary air pollution impacts to be inadequate. Increased energy prices, alternative forms of energy, increased emphasis of energy conservation and efficiency, and financial, legal, and regulatory factors affecting the many proposed power plants along the pipeline could obviate the need to construct this second, parallel pipeline. Many of the proposed plants in southern Nevada may never be built; thus, the need for the pipeline may be lessened.

We appreciate the opportunity to comment on this draft EIS, and we look forward to the

CO3-6 See the responses to comments CO3-2 and CO3-5.

CO3-7 See the response to comment CO3-2.

CO3-8 One of the evaluation criteria for selecting potentially environmentally preferable alternatives to a proposed project is the ability to meet the project objectives. The project objectives for the Kern River 2003 Expansion Project are to provide an additional 885,626 Dth/d of natural gas from Central Rocky Mountain (CRM) Region gas supplies near Opal, Wyoming, to natural gas markets in Utah, Nevada, and California. The need for the project was demonstrated with the FERC issuance of a Preliminary Determination on Non-Environmental Issues (PD) for the Kern River 2003 Expansion Project on February 27, 2002. The PD indicates that KRGT's application under Section 7(c) of the Natural Gas Act to construct, operate, and maintain natural gas facilities would, on the basis of all pertinent non-environmental issues, be required by the public convenience and necessity. The No Action Alternative would not meet the stated objectives of KRGT's proposal. As discussed in section 3.1, the use of alternative energy sources to meet the project objectives is infeasible because the use of solar, hydroelectric, or other energy sources has not been developed to the point where they would be viable energy alternatives to the proposed project.

responses to our comments in the final EIS. If there are any questions concerning the points we raise in this letter, please feel free to contact us.

Sincerely,

J. Jeffrey van Ee

Jeff van Ee
Southern Nevada Representative

cc.

Cy Oggins
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

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PEER
Public Employees for Environmental Responsibility
2001 S Street, NW • Suite 570 • Washington, D.C. 20009 • 202-265-PEER(7337) • fax: 202-265-4192
e-mail: info@peer.org

April 9, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, NE, Room 1A
Washington, DC 20426

Re Docket No. CP01-422-000

Following are comments of Public Employees for Environmental Responsibility (PEER) on the DEIS/DEIR for the Kern River 2003 Expansion Project. This document is premature, failing to give the public sufficient information to evaluate proposed mitigations and reclamation. A number of mitigations (identified below) are improperly assessed as "Less than significant after mitigation" because the information necessary to evaluate them is not presented in the DEIS/DEIR. PEER therefore requests that the DEIS/DEIR be withdrawn and revised to meet minimum standards for public disclosure. It is also necessary, based on past experience with KRGT, that a bond sufficient to obtain independent professional reclamation be required.

CO4-1

Throughout the DEIS/DEIR reference is made to incomplete documents:

CO4-2 1) "revised plans for treatment of noxious weeds" to be presented in the future (p. ES-9; 4-96; 5-50; 5-51). No indication is given anywhere in the DEIS/DEIR of what herbicides are planned to be used, and no assessment of their potential impacts

CO4-3 2) "Success criteria and remedial actions" for transplantation of yucca, cactus, and agave will be developed in consultation with the CDFG and the BLM (p. 4-89; 5-41)

CO4-4 3) "Before construction, KRGT shall file final site-specific Reclamation Plans, which plans are to provide specific procedures for erosion control, specific performance criteria for vegetation establishment, and additional (over Ociober 21 Reclamation Plans, which are not included in the volume of appendices) specific measures or reclamation treatments approved by the jurisdictional agencies...(p. ES-9; 4-80; 4-89; 5-36; 5-46; 5-49; 5-52; R-5; R-7)

CO4-5 4) "In areas designated as critical habitat for desert tortoise, KRGT would conduct an additional treatment of seeding...KRGT would consult further with the BLM to determine the exact seed specifications and locations for this additional treatment (p. 5-42)

CO4-6 5) the BLM "will present, in its ROD for the Kern River 2003 Expansion Project, its own conclusions and recommendations..." (p. 5-1). Inasmuch as the BLM controls almost all of the public lands to be traversed by the project, the extent to which the BLM's conclusions and recommendations might modify the project is essential information for the public to have in order to assess the project impacts, mitigation, and reclamation

CO4-7 Mitigations that are improperly assessed as "Less than significant after mitigation" include KRGT21, KRGT48, KRGT52, KRGT53, ARM10, KRGT58, KRGT59, ARM11, KRGT61, KRGT67, KRGT70 (improperly identified as less than significant without mitigation), and KRGT81

West Coast: Post Office Box 30 • Hood River, OR 97031 • 541-387-4781 • fax: 541-387-4783

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CO4-1 Reclamation would be in accordance with KRGT's site-specific Reclamation Plans that were developed in consultation with the BLM, the FS, the FWS, the Natural Resources Conservation Service, and the CDFG. Section 2.5 discusses the post-construction monitoring that would be conducted by KRGT and the applicable agencies to ensure that reclamation is proceeding satisfactorily. In accordance with the Mineral Leasing Act, the BLM would require KRGT to furnish a bond, or other security, to ensure that KRGT would comply with the terms and conditions of the BLM's right-of-way grant, which would apply to all Federal lands. The BLM would retain KRGT's bond or other security until the BLM is satisfied with KRGT's reclamation efforts.

CO4-2 KRGT has provided its final Noxious Weed Plan. Details of the finalized plan have been incorporated into section 4.5.4. The potential impacts resulting from herbicide use are also addressed in section 4.5.4. The selection of a specific herbicide would be highly variable and dependent on the target weed species, the magnitude of the infestation, the location, and the preference of the jurisdictional or applicable agency.

CO4-3 Success criteria and remedial actions for the transplantation of yuccas, cactus, and agave have been developed. KRGT has adopted the BLM's *Draft Restoration Success Standards and Monitoring Plan* as discussed in section 4.5.2.

CO4-4 KRGT has filed its final site-specific Reclamation Plans. Section 4.5.2 has been revised to include additional details of these plans. With the exception of the California Reclamation Plan (see appendix V), these plans are too voluminous to include in the EIS/EIR; however, they are available for viewing in their entirety on the project Internet web site (http://www.kernriver2003.com).

CO4-5 The exact seed specifications and locations for the additional treatment locations have been incorporated into KRGT's final site-specific Reclamation Plans. Section 4.5.2 has been revised to include additional details of these plans. The California Reclamation Plan has been included as appendix V.

CO4-6 As a cooperating agency, the BLM proposes to adopt this EIS/EIR per Title 40 CFR Part 1506.3 to meet its responsibilities under NEPA in considering KRGT's application for a right-of-way grant. The Record of Decision would be based on information included in this EIS/EIR. All of the measures that are described in the EIS/EIR as well as additional site-specific stipulations that are determined by the affected Federal land management agencies to be necessary on Federal lands will be included in the COM Plan, which will be attached to the BLM's right-of-way grant. Any additional site-specific measures in the COM Plan would not contradict the mitigation measures in the EIS/EIR.

CO4-7 With the exception of impact on yucca, cactus, and agave communities, (see section 4.5.3), all environmental impacts would be reduced to less than significant levels by KRGT's proposed mitigation and the Agency Staffs' recommended mitigation measures.

Other Comments

CO4-8 p. 4-78. It is stated that about 53 percent of the disturbance will be in the previously disturbed construction corridor. A following statement indicates that the swath of previously undisturbed vegetation that would be cleared for the project would be between 25 and 75 feet wide. In the absence of a COM Plan, how can a credible estimate of the area of redisturbance be made?

CO4-9 p. 4-80. It is stated that on the working side of the ROW where topsoil segregation would not be performed, and elsewhere on the construction corridor where topsoil segregation is not performed, "the vegetation would be mowed, scalped, or crushed, leaving plant root systems intact." THIS SAME PROCEDURE WAS TO HAVE BEEN IMPLEMENTED FOR THE EXISTING KR PIPELINE, BUT IT WAS NOT PERFORMED ANYWHERE IN THE CONSTRUCTION CORRIDOR WITHIN CALIFORNIA.

CO4-10 p. 4-80. It is stated that in areas where a surface varnish is present on rocks, efforts would be made to face the varnish side upwards. This, of course, is a joke, unless hundreds of man-hours of labor are dedicated to the job.

CO4-11 p. R-7. It is stated that "All cacti, yucca, and agave species within disturbance areas would be avoided, transplanted adjacent to the disturbance area, and/or re-transplanted back into the disturbance area after surface disturbing activities are completed. In California, up to 50 percent of the cacti, yucca, and agave species that cannot be avoided by temporary or long-term disturbance would be transported to a BLM-designated facility." The first part of this statement applies universally to the Vejo and Dry Lake 1,2 Loops in Nevada, where no such procedures were followed in constructing the existing line. The second part indicates that at least 50 percent of cacti, yucca, and agave species in the construction corridor in California would be avoided, transplanted adjacent to the disturbance area, and/or re-transplanted back into the disturbance area after surface disturbing activities are completed. An even stronger Specific Environmental Stipulation for the California segment of the existing KR line (No. 5 (g)) required that "Joshua-trees, sensitive cacti and perennial species, and other specimen vegetation that cannot be avoided shall be carefully removed from the rights-of-way, held in secure locations, and replanted on the right-of-way near their original locations after completion of construction. Within desert tortoise habitat, sensitive cacti, perennial species, and other specimen vegetation shall be defined as larger and/or slow-growing species that provide shelter and or food resources for desert tortoises. These species shall include Joshua trees, Mojave yuccas, and Spanish bayonet." THIS STIPULATION WAS NOT PERFORMED ON THE EXISTING PIPELINE CORRIDOR. THE STIPULATION WAS GREATLY WATERED DOWN IN THE COM PLAN (A VIOLATION OF NEPA AS THE COM PLAN IS NOT AVAILABLE FOR PUBLIC REVIEW), BUT EVEN THE MINIMAL REQUIREMENT OF TRANSPLANTING TO THE CONSTRUCTION CORRIDOR OF 100 YUCCAS AND 100 CACTI IN THE STATE OF CALIFORNIA WAS NOT PERFORMED.

CO4-12 p. 4-90. The proof that the vegetation mitigations for the existing pipeline were not met is found in comments on the 2001 field surveys that "In general, yuccas were absent from the previously disturbed right-of-way" and "As with yuccas, cacti and agave were mostly absent from the areas that had been disturbed by the previous pipeline construction. The assurances offered in this DEIS/DEIR for conservation of these species has no credibility from past performance.

CO4-13 p. 4-81. It is stated that "In desert areas, KRGT would salvage and transplant Joshua trees, yucca, cactus, and agave. Prior to construction, these species would be identified, removed, heeled-in, and irrigated in areas outside of the construction right-of-way, and then transplanted back onto the right-of-way as part of restoration activities." This statement can be read, as that on p. R-7, as ALL individuals of those species, or as ONE individual of each species, or as some unspecified number of individuals. Since some stretches of the KR pipeline (e.g., Clark Mtns., Halloran Hills) pass through vegetation communities that contain hundreds of individuals of each of the many yucca and cactus species per mile, the effectiveness of the mitigation cannot be judged without specific information on numbers of plants to be transplanted. In addition, this statement has no special stipulation for California.

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CO4-8 The specific amount of previously disturbed corridor (53 percent) was determined by plotting the existing and proposed rights-of-way on alignment sheets and calculating the acreage. The general statement that the swath of previously undisturbed vegetation that would be cleared varies from 25 to 75 feet is used to summarize the new disturbance for the purposes of the EIS/EIR. The width varies due to site-specific conditions. For example, where the pipeline would be located immediately adjacent to KRGT's existing pipeline, generally only 25 feet of new disturbance would occur. About 75 feet of new disturbance would occur in areas where the proposed pipeline deviates from KRGT's existing pipeline and creates a new right-of-way. The width also varies depending on atypical offsets or where the pipeline is located adjacent to other existing facilities or features. Table C-1 in appendix C provides the location of the Kern River 2003 Expansion Project in relation to adjacent existing rights-of-way and atypical offsets or route deviations.

CO4-9 An environmental compliance inspection and mitigation monitoring program would be implemented for the Kern River 2003 Expansion Project (see section 2.5). In addition to agency representatives periodically inspecting the construction and restoration activities, third-party compliance monitors representing the agencies would provide a continual on-site "agency" presence during construction of this project. Experiences from previous projects, including the existing KRGT pipeline, were considered in developing the inspection and monitoring program for this project. Implementation of this program would ensure that KRGT complies with the requirements placed on the project by the FERC, the CSLC, the BLM, the FS, and other regulating agencies. See also the response to comment CO4-1.

CO4-10 The referenced text does not state that every rock will be turned. This measure is one of several proposed by KRGT to reduce the visual impacts. See also section 4.8.7 and the responses to comments CO4-1 and CO4-9.

CO4-11 KRGT developed this measure in response to comments from the BLM and the CDFG. The BLM will develop its COM Plan based on the site-specific Reclamation Plans and the EIS/EIR. However, regardless of the stipulations in the COM Plan, the FERC and the CSLC would require KRGT to comply with the mitigation measures included in the EIS/EIR. See also the responses to comments CO4-1 and CO4-9.

CO4-12 As discussed in section 4.5.2, KRGT has developed restoration techniques for its Kern River 2003 Expansion Project in consultation with the resource agencies to improve success rates. See also the response to comment CO4-9.

CO4-13 KRGT has agreed to salvage and transplant all yucca, cactus, and agave that have a reasonable probability of success as discussed in section 4.5.2. See also the response to comment CO4-9. The California Reclamation Plan (see appendix V) contains stipulations for California.

CO4-13 (cont'd) | p. 4-81. Salvage of yucca and cacti is further modified by stating that Joshua trees more than 8 feet tall and cholla cactus more than 3 feet tall would not be transplanted.

CO4-14 | p. 4-81, 4-88. It is stated that "In the desert areas, transplanted species would be limited to salvaged Joshua trees, cactus, agave, and yucca," whereas in Nevada "KRGT would also transplant selected woody species, primarily *Coleogyne ramosissima* (black brush), creosote bush, and succulents." The Nevada stretches of the KR pipeline in which the above transplantings are deemed appropriate also are "desert lands," and the Joshua tree, other yucca, cacti communities also have black brush and creosote bush, so why the restriction on transplantations in those communities?

Sincerely,

Howard Wilshire

Dr. Howard Wilshire
Chairman of the Board
3727 Burnside Rd.
Sebastopol, CA 95472

Companies/Organizations 4

CO4-14 The statement "in the desert areas" is a reference to all desert areas crossed by the pipeline. The proposed planting of black brush is a reference to a treatment developed specifically for the Red Rock Canyon National Conservation Area (NCA) and the Humboldt-Toiyabe National Forest, Spring Mountains National Recreation Area (NRA) in Nevada.

W A S A T C H

Clean Air Coalition

April 7, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory commission
888 First Street, NE Room, 1A
Washington DC 20426

Cy Oggins
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825

Re: Docket No. CP01-422-000
Kern River 2003 Expansion Project DEIS

The Wasatch Clean Air Coalition is grateful for this opportunity to comment on this project and thanks Mike Boyle of FERC and the many other persons present at the Salt Lake City hearing on April4, 2002 for the information given and questions answered.

Re: Table 4.11.1-2 Ambient Air Quality Classifications for the Compressor Stations Associated with the Kern River 2003 Expansion Project

CO5-1 This table gives attainment and non-attainment status. Also valuable would be maintenance status and the severity of non-attainment, e.g. extreme, severe, serious, etc. These additional details regarding designation are important information for the company, regulators and citizens to keep in mind as this project goes forward.

CO5-2 In the case of Salt Lake County, we are designated maintenance for ozone and carbon monoxide, in addition to the PM10 and SO2 non attainment noted in the table. The maintenance status is important to evaluate the impacts of the proposed compressor station as without knowing that CO and O3 were problems in our airshed, one could believe the small amount of PM10 and SO2 emissions from natural gas fired compressors make the emissions from these compressors benign.

CO5-3 Also, the discussion of the Salt Lake Compressor Station on pg 4-238 could be expanded to include the requirement for emission offsets and other items covered in the Utah rule and State Implementation Plan. Contact Tad Anderson, Utah Division of Air Quality, 801-536-4456, tanderso@deq.state.ut.us.

Peace,

Kathy Van Dame, Policy Coordinator
Wasatch Clean Air Coalition
1148 East 6600 South # 7
Salt Lake City, Utah 84121
dvd.kvd@juno.com 801-261-5989

Companies/Organizations 5

CO5-1 Table 4.11.1-2 has been revised to better reflect the non-attainment severity and maintenance status of each airshed.

CO5-2 Table 4.11.1-2 has been revised to better reflect the non-attainment severity and maintenance status of each airshed.

CO5-3 Additional text has been added to section 4.11.1.4 stating that emission offsets and other state requirements would be evaluated in the permitting process.

CALIFORNIA OFF ROAD VEHICLE ASSOCIATION, INC.
www.corva.org

April 10, 2002

COPY

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Subject: Kern River 2003 Expansion Project, Kern River Gas Transmission Co. EIS/EIR
Reference Docket No. CP01-422-000

Dear Secretary Salas:

CO6-1 Regarding the above named project; we need the document to provide access and corridors for off highway vehicle (OHV) use, especially as it ties in to existing BLM and USFS properties. There should not be a fragmentation of routes to OHV use, as it is a legitimate form of recreation as authorized by Congress.

Because of the length of the project, it lends itself as a perfect project for long distance off-the-pavement opportunity; such as we have in California's State Motorized Trail System. Such a system should be incorporated into the planning process and coordinated with federal land management agencies.

Staff should sit down with OHV leadership and identify those areas of their main concern and see if we can work around them or do some type of management by trail design to minimize impact that is a concern in this document.

In any case, no OHV opportunity should be lost; on the contrary, it should be included and added so that unauthorized use does not become an issue. When you provide the opportunity, there will be less unauthorized use.

I would like to sit down with you and go over the maps so we can identify exactly where your concerns are. We can sit down with Mark Conley from BLM's Sacramento office and Rick Farrington from the USFS San Francisco regional office.

Sincerely,

Dick Taylor, Central California Field Rep
413 Countryside Drive
Bakersfield, CA 93308, phone 661-327-0216, e-mail dick@corva.org

"Dedicated to protecting our lands for the people, not from the people."

Companies/Organizations 6

CO6-1 As stated in section 4.8.6.2, KRGT would discourage off-highway vehicle (OHV) use on its new or existing rights-of-way due to safety considerations and the need to maintain erosion control, promote continued restoration and revegetation success, and protect biological and cultural resources unless the OHV use is specifically designated or authorized by the landowner or land management agency. On lands where OHV use is specifically designated or authorized, no OHV opportunity would be lost. However, in the Dixie National Forest, the FS would issue a forest order prohibiting the use of OHVs along the right-of-way to facilitate restoration after construction.

California Native Plant Society

April 11, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Stree, N.E., Room 1A
Washington, DC 20426

Cy Oggins
California State Lands Commission
100 Howe Ave., Suite 100 South
Sacramento, CA 95825

RE: Comments on Kern River Gas Pipeline FERC Reference Docket No. CP01-422-000, CA Clearinghouse No. 2001071035, BLM Reference No. CACA43346

Dear Secretary Salas and Mr. Oggins,

The California Native Plant Society (CNPS) is a non-profit organization of more than 10,000 laypersons and professional botanists organized into 32 chapters throughout California. The mission of the California Native Plant Society is to increase the understanding and appreciation of California's native plants and to preserve them in their natural habitat through scientific activities, education, and conservation.

CNPS submits the following general and document specific comments as useful additions/clarifications for the final Environmental Impact Statement/Environmental Impact Report.

General Comments:

CO7-1 | CNPS supports the avoidance of native plants and plant communities and keeping the new construction within existing disturbed areas. We also recognize that this project, in California, is within a designated Energy Production and Utility Corridor (BLM 1980).

Document Specific Comments:

CO7-2 | Page 4-81. With regards to salvaging/transplanting Joshua trees, yuccas, cactus and agave, CNPS recommends that monitoring for transplantation success be required for these species. We support transplantation efforts, however, monitoring is essential to evaluate the success of transplantation. Why waste money on transplantation of species if the rate for transplantation is low? Monitoring will increase the knowledge base of transplantation efforts, and therefore appropriate use of resources can be more effectively directed in the future.

CO7-3 | Page 4-81. In visually sensitive areas, when mitigating visual impacts, plant species need to be selected that not only "complement the adjacent vegetation", but more importantly, are of the same plant community where the visual impact is occurring. Furthermore, at any site where plant material is introduced, CNPS recommends that plant material be of local genetic stock, to preclude "swamping" of local genotypes.

Dedicated to the preservation of California native flora

Companies/Organizations 7

CO7-1 Thank you for your comments.

CO7-2 KRGT proposes to monitor the success of its restoration efforts, including the transplanting of succulents, for 6 years in desert areas (5 years in the non-desert areas of Utah and Wyoming). These requirements are stipulated in KRGT's site-specific Reclamation Plans. Section 4.5.2 has been revised to include additional details of these plans. The California Reclamation Plan has been included as appendix V. See also the response to comment CO4-9.

CO7-3 KRGT has developed the seed mixes included in its California Reclamation Plan in consultation with the BLM and the CDFG. KRGT would utilize local seed companies to provide seed collected locally from the Mojave Desert.

CO7-4 Page 4-82. With regards to the Mojave desert region, CNPS proposes the following objectives that need to be addressed in any success criteria are:

- Sustainability – the vegetation will maintain/ replace itself over time. The vegetation will not be dependent on artificial water, fertilizers or labor (weed removal, etc).
- Resistance to exotics – disturbance often lends itself to exotics getting a "root-hold". A healthy ecosystem will resist invasion in the absence of disturbance.
- Nutrient retention – keeping most nutrients in the cycle & not having them "leak" off-site. In the desert of course this still means that most nutrients are tied up in the plant material, but that sufficient biomass in different age stands and vegetation types (annual/perennial) be present to initiate/maintain nutrient cycling.
- Full complement of biotic interactions – mycorrhizal associations reestablished, soil crusts reestablished, pollinators present, soil movers (ants etc) present.

Natives annuals will be included as part of a successful revegetation process. They are an important biomass constituent in desert, especially in certain years and should be addressed. Re-establishing an annual seed bank is a necessity, for resisting exotics and providing successional abilities during catastrophic events. These could be monitored as a seed bank.

Lastly, in the Manual of California Vegetation (1990), the range in cover of perennial species in the Mojave desert is 5-27%. This very low cover of vegetation virtually needs to be replicated to assure the viability of keeping soils in place and establishing ecological functions. Furthermore, cover and diversity reflecting pre-disturbance conditions by plant community is requisite to mitigate impacts.

CO7-5 Page 4-87, Table 4.5.2-5. CNPS requests that a more appropriate plant palette be included here. The five species included in this table do not correctly reflect the diversity of plants found on the approximately 1800 acres in California.

CO7-6 CNPS also highly discourages the use of hydroseeding as a seeding technique in the Mojave desert, because typically the seeds germinate during hydroseeding and, without additional moisture, die. Therefore hydroseeding can only be used successfully if ongoing watering or precipitation events are guaranteed, and because this guarantee is unlikely for this project, we support other, more natural types of seeding like imprinting, broadcasting or drilling.

CO7-7 Page 4-94. CNPS supports exotic plant species control plans. However, if the weed infestations are to be identified this spring (2002), it is likely that many locations could go undetected, due to lack of rain. Monitoring/treatment of exotic infestations will continue through the construction phase and, as stated, in the subsequent 5-year monitoring period. It is imperative that any exotic-control treatments occur prior to the species maturing/dispersing seed.

CO7-8 Page 4-147. Due to the lack of rainfall in the Mojave this year, CNPS concludes that it is unlikely that the surveys for the desert cymopterus, Barstow woolly sunflower and Mojave monkeyflower will result in any species being identified, although all three species range occur within the project area and potential habitat has been identified on the project site. The desert cymopterus is of particular concern to us, in light of the fact that CNPS has recently submitted a petition to the US Fish and Wildlife service to list the species as endangered. It is a perennial geophyte that simply won't put out leaves

Companies/Organizations 7

CO7-4 KRGT has revised its site-specific Reclamation Plans to include more specific success criteria developed in consultation with the BLM, the FS, and state agencies such as the CDFG. Section 4.5.2.1 has been updated to incorporate these revisions. The California Reclamation Plan has been included as appendix V. Factors considered in the development of the reclamation treatments and the success criteria included sustainability, resistance to exotics, nutrient retention, and the reestablishment of biological crusts. Topsoil segregation is expected to maintain the existing source of annual seed species along the right-of-way. The goal of KRGT's site-specific Reclamation Plans is to promote recovery of the disturbed areas to preconstruction conditions.

CO7-5 The proposed seed mix was developed in consultation with the BLM and the CDFG and was not developed to provide the entire range of species found in this part of California but rather to enhance natural revegetation. Species diversity would be complemented by seed naturally occurring in the preserved topsoil and recruitment from adjacent native vegetation.

CO7-6 Noting the environmental constraints, KRGT would most likely broadcast or imprint seed in desert habitats. However, hydroseeding may be used for site-specific situations where it is considered a viable option.

CO7-7 Section 4.5.4 has been revised to include a recommendation that weed treatment be timed to occur before seed maturity.

CO7-8 KRGT conducted botanical surveys along the Daggett Loop in spring 2002. As suspected, due to the dry conditions, KRGT did not identify any desert cymopterus, Barstow woolly sunflower, or Mojave monkeyflower. However, suitable habitat for the sunflower and cymopterus was identified. Although KRGT does not propose to acquire lands specifically to mitigate for potential impacts on these species, lands acquired for desert tortoise mitigation would also benefit these species because suitable habitat for the desert tortoise overlaps suitable habitat for these plants. Analysis indicates that this strategy provides adequate mitigation for potential impacts on these plants.

CO7-8 (cont'd) during drought years, and will therefore go undetected during surveys. Both the Barstow woolly sunflower and Mojave monkeyflower are annuals that endure drought as seeds. CNPS recommends that in lieu of surveys, the resources are used to acquire suitable habitat where plants are known to occur and deed that property to California Department of Fish and Game.

CO7-9 Page 4-148. CNPS supports distributing seed/propagules of Rusby's desert mallow into adjacent areas with appropriate conditions outside of the identified energy/utility corridor (CDCA 1980). This species, as noted in the document, has already been impacted by previous utility construction activities. Establishment of the species outside of the right-of-way will assure persistence of this species, and reduce the need for listing under the Endangered Species Acts in the future.

CO7-10 Page 4-152. Due to the lack of rainfall in the Mojave this year, CNPS concludes that it is unlikely that the surveys for the small-flowered androstephium will result in the species being identified, although its range occurs within the project area and potential habitat has been identified on the project site. CNPS recommends that in lieu of surveys, the resources are used to acquire suitable habitat and deed that property to California Department of Fish and Game.

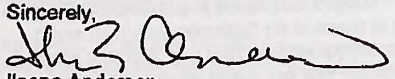
CO7-11 With regards to the scaly cloak fern, CNPS supports the recommendation for funding native plant research, and that funding be directed towards research on the scaly cloak fern, including the option for acquisition of property for conservation in perpetuity.

CO7-12 Page 4-175. How much "grading and/or widening" of access roads is proposed? How many acres, and of what plant communities will be affected by these activities? Are there any plant species/communities of concern in these areas?

CO7-13 One issue, not addressed in the vegetation section and is of great importance to maintaining natural ecological processes, is the maintenance of cryptobiotic crusts. These soil crusts, while not obvious to the untrained eye, provide essential ecological functioning in the desert regions including increasing moisture retention, preventing soil erosion, and providing "safe sites" for seeding recruitment. While they do not occur on all soil types, where they do occur, they need to be retained. Various sources (Belknap 1995, Bethlenfalvy et al. 1984, Doerr et al. 1984, Brotherson et al. 1983, Anderson et al. 1982) provide additional information on salvaging and re-introduction of these important components of desert ecology.

Thank you for the opportunity to submit these comments and we look forward to seeing them addressed in the final Environmental Impact Statement/Environmental Impact Report. If you have any questions please feel free to contact me at (323) 654-5943.

Sincerely,



Ileene Anderson
Southern California Regional Botanist
California Native Plant Society

Companies/Organizations 7

CO7-9 Comment noted.

CO7-10 See the response to comment CO7-8. Similar to the desert cymopterus, Barstow woolly sunflower, and Mojave monkeyflower, mitigation required for impacts on desert tortoise habitat would also benefit the small-flowered androstephium due to overlapping habitat requirements.

CO7-11 Comment noted.

CO7-12 The description and amount of modification for each proposed access road is provided in table D-2 of appendix D. KRGT would use only existing gravel and/or dirt roads to access the construction right-of-way. Road modifications would primarily occur over the existing road width and impacts on vegetation at these locations would be minimal.

CO7-13 Biological soil crusts are addressed in section 4.2.3.1.

Cc: USFWS
BLM, Barstow
CDFG
CNPS State Office

References:
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Sawyer, J.O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society, Sacramento, CA. Pgs. 471.

Companies/Organizations 7

April 15, 2002

RE: KERN RIVER 2003 EXPANSION PROJECT
Docket No. CP01-422-000

Dear Sir/Madam:

Thank you for this opportunity to comment on the Kern River 2003 Pipeline Expansion Project.

CO8-1 **Current Status:** Ten years after construction of the original pipeline a scar approximately 100 feet (some areas up to 150 feet) wide and hundreds of miles long is readily visible across Utah, Nevada, and California, and this scar shows minimal healing. The expansion project clearly needs to be handled in a different fashion than the original pipeline construction.

CO8-2 **Right-of-Way Disturbance:** Because preservation is far easier than restoration it is essential to limit any additional disturbance to no more than 20 feet in addition of the original right of way (ROW) width.

CO8-3 **Reseeding:** Reseeding with appropriate site-specific seeds is essential to having a good chance of successful rehabilitation. It is also essential to save topsoil and redistribute over-disturbed area. It may also be helpful to inoculate the soil with appropriate mycorrhiza species prior to re-seeding efforts.

CO8-4 **Weed Management:** Best available management practices need to be used to avoid spreading and propagating weeds.

CO8-5 **Extra Work Spaces:** Extra work spaces outside the ROW should not be allowed. These extra areas magnify the problem of rehabilitation of the ROW.

CO8-6 **Red Rock Canyon National Conservation Area:** It is essential that there be complete restoration of the ROW through the Red Rock Canyon National Conservation Area.

CO8-7 **Cactus and Yucca:** It is essential that all cacti and yuccas be salvaged and replanted at approximately the original density. It should be noted that for the initial Kern River pipeline project almost none of the cacti and yuccas in the ROW were transplanted.

CO8-8 **Dry Washes:** Disturbance in dry washes should be limited to existing disturbed areas, particularly where large cuts were made up and down the steep sides of the washes such as in Halfway Wash (NV).

CO8-9 **OHV Use:** Every attempt should be made to prevent the ROW from becoming a permanent road for off-highway vehicle use by the public.

Sincerely,

John E. Hiatt
Conservation Chair
Red Rock Audubon Society
8180 Placid Street
Las Vegas, NV 89123

Companies/Organizations 8

CO8-1 KRGT would implement site-specific Reclamation Plans for the Kern River 2003 Expansion Project. These plans are based on the original reclamation plans that were prepared for the construction of KRGT's existing pipeline but include updated technical standards and incorporate modifications/improvements to address comments from various land management agencies about the adequacy of the previous plans. To ensure compliance with the site-specific Reclamation Plans and other mitigation measures, an environmental compliance inspection and mitigation monitoring program would be implemented during construction of the Kern River 2003 Expansion Project (see section 2.5). See also the response to comment CO4-9.

CO8-2 KRGT states in its application that it designed the Kern River 2003 Expansion Project to limit additional disturbance to that necessary to safely install the pipe. Within the Red Rock Canyon NCA and the Spring Mountains NRA, the proposed pipeline would be adjacent to the existing KRGT pipeline using a reduced 20-foot offset. The permanent right-of-way for the new pipeline would be placed exactly within the boundary of the permanent right-of-way for the existing KRGT pipeline. KRGT's design maximizes use of areas previously disturbed by construction of the existing pipeline; however, some additional temporary extra workspaces would be needed for special construction techniques that could extend beyond the previously disturbed area. These areas would be restored in accordance with the requirements for the rest of the construction right-of-way as specified in KRGT's Nevada Reclamation Plan (see the response to comment CO8-6).

CO8-3 Seed mixes are included in the Nevada Reclamation Plan, which was developed in consultation with the BLM and the FS. Seed would be purchased from local commercial sources to address local species adaptations. Topsoil segregation as proposed would preserve the native micorrhiza within the soil. Additionally, a portion of the seed would be pelletized and include macrobiotic components specifically grown in a laboratory for Mojave Desert habitats.

CO8-4 KRGT has included best management practices in the development of its Noxious Weed Plan.

CO8-5 See the response to comment CO8-2.

CO8-6 The Red Rock Canyon NCA is included as a sub-area in KRGT's site-specific Nevada Reclamation Plan. KRGT has developed specific treatments for the Red Rock Canyon NCA in consultation with the BLM (see section 4.5.2.1). These treatments include the complete restoration of the right-of-way through the Red Rock Canyon NCA including portions of the existing right-of-way that would be outside of the proposed right-of-way. See also the response to comment CO8-1.

CO8-7 See the response to comment CO4-13.

CO8-8 See the response to comment CO8-2. In addition, KRGT would restore the bed and banks of all waterbodies to preconstruction conditions as specified in its WWCM Procedures (see appendix F).

CO8-9 Section 4.8.6.2 describes the measures KRGT has used in the planning and design of the project or would use to control unauthorized or undesired OHV use on the pipeline right-of-way.

Desert Tortoise Preserve Committee, Inc.

April 11, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

RE: Docket No. CP01-422-000

Dear Ms. Salas:

The Desert Tortoise Preserve Committee and the Desert-Tortoise Council are publicly supported non-profit organizations working to assure the continued survival and recovery of viable populations of the threatened desert tortoise, *Gopherus agassizii*, throughout its range in the desert-southwest. The proposed Kern River Gas Pipeline will traverse and significantly impact on three separate listed populations of the desert tortoise and their designated habitats. As clearly interested parties we welcome this opportunity to provide informed public comment on the Kern River 2003 Expansion Project Draft Environmental Impact Statement/Environmental Impact Report.

CO9-1 We are particularly concerned that adequate compensation and mitigation be done to offset the inevitable adverse impacts to the desert tortoise and other species such as the California state-listed Mohave ground squirrel that will ensue from this project. In part, our concern reflects the troubled history of the existing pipeline that this project would expand.

During construction of the existing Mojave-Kern Pipeline take of tortoises on the Kern portion of the pipeline was excessive. Twenty-nine tortoises were killed exceeding the allowed mortality limit by 4 tortoises. The total of 38 tortoises that were killed on the combined Kern and Mojave portions of the Mojave-Kern Pipeline accounted for 72% of all tortoises taken in California under the 101 Biological Opinions reviewed by LaRue and Dougherty, 1997.[1] In addition, a

CO9-2 number of the proposed reclamation mitigations were not performed. For example, cacti, yucca and agave from within the original disturbance area were not temporarily transplanted and then transplanted back after construction was completed; nor were measures taken to maintain the integrity of plant root systems by scalping or mowing on the working side of the right-of-way that would have helped retain undisturbed topsoil, aid in moisture retention and potentially provide a seed source.[2] These same measures are proposed again in

4067 Mission Inn Avenue
Riverside
California
92501

(909) 683-3872 Phone
(909) 683-6949 Fax

www.tortoise-tracks.org

[1] LaRue, E. and Dougherty, S., 1997. Federal Biological Opinion Analysis for the Proposed Eagle Mountain Landfill Project. In: *Proceedings of the Desert Tortoise Council Symposia 1997-1998*, pp.52-58.
[2] Wilshire, H., 2002. Comments of Public Employees for Environmental Responsibility (PEER) on the DEIS/DEIR for the Kern River 2003 Expansion Project. April 9, 2002 letter to Magalie R. Salas, FERC.

Companies/Organizations 9

CO9-1 As discussed in section 4.7, KRGT has proposed general and species-specific mitigation measures to offset potential impacts on special status species. This mitigation has been developed in consultation with applicable Federal and state resource agencies and is expected to reduce potential impacts to less than significant levels.

CO9-2 See the response to comment CO4-9. Collocating the pipeline with existing rights-of-way creates less of an impact than the creation of an entirely new right-of-way on previously undisturbed land. Even though the existing right-of-way has been partially revegetated, it is still considered previously disturbed and the acreage presented in table 4.7.2-2 was calculated accordingly. The acreage presented in table 4.7.2-2 represents the expected construction footprint for the proposed project; however, the final mitigation acreage will be based on the actual construction impact. See also the response to comment FA5-29.

Desert Tortoise Preserve Committee, Inc.

CO9-2 (cont'd) this draft EIS (pages 4-80 to 4-81). That the disturbed land estimate in Table 4.7.2-2 may include acreage that should have been reclaimed but was not, begs the question of how accurate is the estimate of disturbed versus undisturbed land within the construction right-of-way. This should be remedied by increasing the acreage considered undisturbed or by increasing the compensation ratio for the so-called disturbed lands.

CO9-3 The proponents plan to construct, operate and maintain a pipeline along a 75- to 80- foot-wide construction right-of-way through 103 miles of habitat designated as critical to the survival and recovery of the desert tortoise. The pipeline will impact the Northeastern Mojave Desert Tortoise Recovery Unit (Beaver Dam Slope CHU, Mormon Mesa Coyote Spring CHU), the Eastern Mojave Desert Tortoise Recovery Unit (Ivanpah CHU) and the West Mojave Desert Tortoise Recovery Unit (Superior-Cronese CHU, Ord-Rodman CHU, Fremont-Kramer CHU).
The proponents estimate that this will result in the loss and degradation of 3,765 acres of habitat. They propose to offset this by providing replacement habitat or equivalent assessed financial contribution. The draft EIS does not make this clear, but because each Recovery Unit constitutes a distinct population if this compensation formula is going to successfully mitigate the impacts then the compensation needs to be proportionately obligated so that impacts to any one Recovery Unit are mitigated in that Recovery Unit.

CO9-4 Further, the proponents state "Protection of the compensation acreage would offset the effects of habitat loss." (page 4-125). However, no mechanism is provided to fully achieve this goal as the proponents only propose paying enhancement or management fees (to California Department of Fish and Game) for the acquired lands in California. Without providing enhancement and management fees for all compensation lands or requiring the withdrawal of all compensation lands from mineral entry and grazing, there is no mechanism to protect the non-CDFG compensation acreage from mining, grazing, and other uses that may occur on public lands and that are incompatible with tortoise recovery.

Appendix R of the draft EIS outlines mitigation measures for impacts on the desert tortoise during construction and maintenance. While many standard provisions are included it is deficient in areas relating to project oversight (measures 1 and 5) and activities outside the project impact area (measure 6). Our concerns about measures 1, 5, 6 and 11 are explained below. If the proponents cannot address these concerns then the Biological Opinion should make up the deficiency.

CO9-5 **Measure 1 (page R-1):** The relationships and authorities of the Field Contact Representative, authorized biologist and biological monitors should be clearly defined. Measure 1 must be amended to include the statement "The FCR shall

4067 Mission Inn Avenue
Riverside
California
92501

(909) 683-3872 Phone
(909) 683-6949 Fax

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Companies/Organizations 9

CO9-3 KRGT would implement mitigation for impacts on desert tortoise habitat as recommended by the applicable agencies. In California, KRGT has proposed to provide monetary compensation to the CDFG (through a third party), which in turn would purchase the required number of acres to fulfill KRGT's mitigation requirements. In Utah and Nevada, KRGT would provide monetary compensation to The Conservation Fund (see the response to comment FA5-29). Although parcels acquired by these entities are expected to be within the Recovery Units in which the impact occurs, requiring such acquisitions could result in missed opportunities to acquire more critical areas in other Recovery Units that could provide additional benefits to the desert tortoise.

CO9-4 KRGT has committed to implement mitigation for impacts on desert tortoise habitat as recommended by the applicable agencies. Fees associated with the proposed mitigation are expected to be on a per-acre basis and are expected to include both the land cost and enhancement and management (endowment) fees. Further, mining, grazing, or other activities on lands under the BLM's control would be considered separate Federal actions that would require separate environmental analysis for the potential impacts on desert tortoise habitat.

CO9-5 The relationship and authorities of the field contact representative, authorized biologist, and biological monitors are discussed in appendix S. Conservation measure number 2 in appendix S states that the field contact representative would have the authority to halt all activities that are in violation of protective stipulations for listed species.

CO9-5 (cont'd) | have authority and responsibility to halt all activities that are in violation of the stipulations."

CO9-6 | **Measure 5 (page R-2):** For the same reason as above, Measure 5 should be amended to include the statement "Authorized Biologists shall have authority and responsibility to halt all activities that are in violation of the stipulations."

CO9-7 | **Measure 6 (page R-2):** Given that the FWS Biological Opinion is restricted to the specific project at hand, then their approval must be sought if "unforeseen circumstances require expansion of the project area". The language in Measure 6 should be reworked to specify "Any work that occurs outside of the right-of-way must be fully mitigated and should proceed only after written approval from BLM and FWS."

CO9-8 | **Measure 11 (page R-3):** The use of the terms "desert tortoise active season (March 1 to October 31)" and "desert tortoise inactive season (November 1 to February 28)" is misleading. While adults may be less active during the winter months, this is not necessarily the case for the smaller and less easily seen juvenile tortoises.[3] Reports filed with FWS by the Fort Irwin National Training Center, located immediately adjacent of a section of the proposed pipeline route, reported that a tortoise was accidentally killed on November 24, 2001 and two additional tortoises were sighted on that same day. If accidental take of tortoises by this project is to be minimized both the written measures and the educational programs must emphasize that tortoises are likely to be encountered at any time during construction.

We look forward to seeing our comments fully addressed in the Environmental Impact Statement and hereby request that we be added to your mailing list to receive copies of the final EIR/EIS. If we can be of any further assistance please free to contact me by telephone at 909 683-3872 or by e-mail at <dtpc@pacbell.net>.

Sincerely,

DESERT TORTOISE PRESERVE COMMITTEE
DESERT TORTOISE COUNCIL

Michael J. Connor

Michael J: Connor, Ph.D.
Executive Director

4067 Mission Inn Avenue
Riverside
California
92501

(909) 683-3872 Phone
(909) 683-6949 Fax

www.tortoise-tracks.org

[3] Wilson, D. S., Morafka, D. J., Tracy. C. R., and Nagy, K. A., 1999. Winter Activity of Juvenile Desert Tortoises (*Gopherus agassizii*) in the Mojave Desert. *Journal of Herpetology*: Vol. 33, No. 3, pp. 496–501.

CO9-6 See the response to comment CO9-5.

CO9-7 See the response to comment FA5-33.

CO9-8 As stated in conservation measure number 3 in appendix S, all KRGT employees and contractor personnel would be required to attend a sensitive resource education program before working on the project. The program would, at a minimum, discuss distribution, general behavior, and ecology of listed species, including desert tortoises and what actions to take (or not to take) when encountering active individual tortoises regardless of the season. See also the response to comment CO4-9 covering the environmental compliance inspection and mitigation monitoring program that would be implemented for this project.

Comments on the Draft EIS/EIR and Responses

NATIVE AMERICAN GROUPS

GREAT LAKES INDIAN FISH & WILDLIFE COMMISSION
P. O. Box 9 • Odanah, WI 54861 • 715/682-6619 • FAX 715/682-9294

• MEMBER TRIBES •

MICHIGAN	WISCONSIN		MINNESOTA
Bay Mills Community	Bad River Band	Red Cliff Band	Fond du Lac Band
Keweenaw Bay Community	Lac Courte Oreilles Band	St. Croix Chippewa	Mille Lacs Band
Lac Vieux Desert Band	Lac du Flambeau Band	Sokaogon Chippewa	

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FEDERAL ENERGY
REGULATORY COMMISSION

February 27, 2002

ORIGINAL

Ms. Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Dear Ms. Salas:

NA1-1 Thank you for your publication of the OEP/DEER/Gas Branch 1, Kern River Gas Transmission Company, FERC Docket No. CP01-422-000, CA Clearinghouse No. 2001071035, BLM Reference No. CACA-43346. However, we would like to be removed from this publication list because we don't do any work in this particular area, and we would like to save you some copy time and paper.

If you have any questions, please call me at (715) 682-6619. Thank you.

Sincerely,

Lynn M. Warren

Lynn M. Warren
Litigation Support Specialist

cc: File

020318 0750.2

DOCKETED

Native Americans 1

NA1-1 Comment noted.

The SHOSHONE-BANNOCK TRIBES

P. O. BOX 306
FORT HALL, IDAHO 83203
PHONE (208) 238-3706
FAX# (208) 237-0797

CULTURAL RESOURCES
HERITAGE TRIBAL OFFICE (HETO)
email: heto@poky.srv.net

April 12, 2002

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02 APR 15 PM 2:59
FEDERAL ENERGY REGULATORY COMMISSION

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N. E., Room 1A
Washington, DC 20426

RE: Reference Docket No. CP01-422-0000

Dear Ms. Salas:

Thank you for accepting these comments to the Kern River 2003 Expansion Project Draft Environmental Impact Statement/Environmental Impact Report.

The Shoshone-Bannock Tribe of Fort Hall, Idaho submit the following comments:

NA2-1 Although cultural resources are very important to the Shoshone-Bannock Tribes, they are not the only important resources. There is no discussion in this document about the trust responsibility of the Federal Government to Native American Tribes. The Shoshone-Bannock Tribes would also like to see language that addresses Native American Treaty Rights. Treaty Rights are very important issues and any action that may infringe on these must be stated clearly and up front. If there are no impacts to treaty rights on Federal or Tribal lands this must also be stated clearly and up-front.

The United States Government has a unique legal relationship with Native American Tribal Governments as set forth in the Constitution of the United States, treaties, statutes, court decisions, Presidential Executive Orders, and Memorandum. This relationship and the Federal Government's responsibilities under this relationship should be spelled out up-front in the document and not hidden in the Cultural Resources Section. As stated in Section 4.10.5 Native American consultation, *Bureau of Land Management California State Office, has been designated the lead agency for conducting and overseeing Native American consultations.* Because the BLM is a Federal Agency, they are required to consult on a government-to-government basis with Native American tribes. Again, these activities should be dealt with up front in the document and not only in the Cultural Resources section.

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FERC DOCKETED

Native Americans 2

NA2-1 The preparers of this document are not aware of Native American Treaty Rights issues or violations that would result from the proposed project. Sections 1.2.3 and 4.10.5 have been revised to update the status of Native American consultations.

NA2-1 (cont'd)

We understand that huge undertaking it must be to consult with each and every Native American group, but because this project is being permitted by the Federal government, and crosses federal lands, consultation must occur. It is the opinion of the Shoshone-Bannock Tribes that the various federal, state and local governmental entities in which consultation was necessary were not sent "initial consultation letters" to begin the consultation process. Although Native American tribes were contacted via "initial consultation letters," this should, at the least, be followed up with telephone conversations to schedule face-to-face consultation, if in fact; the affected tribes and/or federal agency desire true consultation. A letter is not, and cannot be construed as government-to-government consultation.

Although we feel this document is very well written, we request that Tribal Trust Responsibility, Treaty Rights, and government-to-government consultation efforts addressed in Section 1, and not only in the cultural resources section.

Should there be any further questions or concerns, feel free to contact me at (208) 478-3706.

Sincerely,

Diana K. Yupe
Tribal Anthropologist

DY/mt

Cc: Gas Branch 1, Kern River Gas Treatment Company
Cy Oggins, California State Lands Commission
File/BLM-Kern River 2003 Expansion Project

Comments on the Draft EIS/EIR and Responses

INDIVIDUALS

Comments on the Kern River 2003 Expansion Project
(Reference Docket # CP01-422-000)
Submitted by Joanne Hardesty, M.S., P. O. Box 5219, Salton City, CA 92275

IND1-1 After reviewing this document, I support the No Action Alternative. I do not believe that natural gas is the only viable energy available. This document does not consider viable alternative energy sources such as solar and wind power. Rather than destroying more habitat, current clean energy sources should be expanded to meet future needs. Wind energy facilities already exist in the southern California desert. These should be expanded.

I object to the proposed action and other alternatives because they will adversely affect the habitats for numerous federally listed endangered or threatened species. Increased destruction of habitat bordering the pipeline will disturb many of these species and further open the areas to off road vehicles that are already decimating many public lands. As this EIS states, desert vegetation recovers very slowly, if at all, from human disturbance. Further, this project is not the only proposed disturbance for the various ecosystems involved. It is one of many proposed projects whose collective destruction is greater than the sum of the parts.

IND1-2 I am opposed to all habitat destruction that potentially harms wildlife and native vegetation. Specifically, I am disturbed by the large impact the project will have on desert tortoise populations. I have many desert tortoises that are currently in my care, and from personal experience I know that it is very difficult, if not impossible, to collect their eggs, as is proposed for mitigation purposes in this document. So much of the desert tortoise habitat is already gone. It is not acceptable for the proposed project to destroy an additional 1,653 acres of habitat for this species. In addition, many other desert species, such as the desert iguana, are very sensitive to habitat disturbance. Mitigation efforts will not be effective and this EIS does not even propose to develop species-specific mitigation because it is impossible to truly mitigate the tremendous habitat destruction that a project of this magnitude will cause.

IND1-3 I am also opposed to wetland and riparian habitat destruction that would be caused by the project. Over 90% of riparian habitat in the Southwest is already destroyed or disturbed. Remaining wetlands and riparian zones should be strictly protected for wildlife.

Continued reliance on non-renewable resources will one day be the ruin of our country. I oppose the proposed project on the grounds that it is short-sighted and does not truly plan for the future of our nation or the protection of the environment.

Individuals

IND1-1 See the response to comment CO3-8. A discussion of special status species, OHV use, vegetation, and cumulative impacts is presented in sections 4.7, 4.8.6.2, 4.5, and 4.13, respectively.

IND1-2 The species-specific mitigation measures for the desert tortoise presented in section 4.7 and in appendix S provide adequate protection for this special status species. See also the response to comment FA5-29.

IND1-3 KRGT's proposed mitigation measures, as well as site-specific permit conditions, would minimize potential impacts on wetland and riparian habitat crossed by the project and aid in the successful restoration of these areas after construction.

March 7, 2002

Edward Riddle
P.O. Box 111
Hinkley, CA 92347-0111
REF DOC
CP01-422-000

Magalie R. Salas, Secretary
F.E.R.C.
888 First St., NE, Room 1A
Washington, DC 20426

THIS COPY FOR: CY OGGINS

Dear Secretary:

I object to the routing of the proposed pipeline through the Hinkley, California, area, for the following reasons:

1)

IND2-1 Although procedures such as the scoping/hearing of August 1, 2001 in Barstow satisfy the required course of making a venue for public discussion, the spirit of the *intent* for these requirements have not been met. On that hearing date, the result of one ad in a local paper, eight or nine interested individuals showed up, and one citizen, who stood to ask for clarification about what he could comment upon, was told he was out of order, and sat down. Including introductions of government and public officials (who outnumbered the public attendees), and the opening, adjournment and closing of this meeting, the transcript verifies that a total of no more than 7 minutes of meeting time transpired.

The primary reason for those hearings is for public input and concern. They are meant to be a venue and crucible for controversy. The manner in which these meetings have been allowed to occur is a public travesty, where the intent has been transformed into minimizing controversy and input, equally therefore *severely* minimizing impacts in the EIR.

Equally a travesty is the fact that, although no proposal has yet been finalized, the one person at that meeting who attempted input was called 2 days later by pipeline management to begin negotiations to pay him for the portion of his property affected in the right of way taking. This elicits that government and project officials are completely confident and certain that, in spite of all hearing requirements and flying in the face of any and all objections and any possible negative mitigated negative declarations, this project will go through as they please, and are indeed so confident that even obvious errors will not matter.

2)

IND2-2 The California Environmental Quality Act (the CEQA) is being conveniently written off and ignored because, apparently, "bundled" corridors for public utilities allow them to ignore it. The intent of a provision the CEQA is to prevent cumulative impacts of the same projects in the same

Individuals 2

IND2-1 Section 1.3 describes the public review and comment process for the Kern River 2003 Expansion Project. In addition to an advertisement placed in local newspapers along the pipeline route, the August 2, 2001 public scoping meeting for the Kern River 2003 Expansion Project held in Barstow, California was announced in the Notice of Preparation of a Draft EIR and Notice of Public Scoping Meeting (NOP) issued July 2, 2001 by the CSLC. The NOP was sent to 1,465 interested parties, including Federal, state, and local agencies; elected officials; environmental and public interest groups, Native American tribes; California landowners along KRGT's existing pipeline and its proposed and alternative routes; and local libraries and newspapers.

All public scoping meetings associated with the project were recorded and transcribed. The transcripts for the public scoping meetings are part of the public record for the project and are available for viewing on the FERC Internet web site (http://www.ferc.gov). (Using the "RIMS" link, select "Docket #" and follow the instructions (call 202/208-2222 for assistance).) The Agency Staffs were set to open the meeting at 6:00 PM but provided additional time to accommodate late arrivals. The transcript of the August 2, 2001 meeting shows that the meeting began at 6:15 PM and that one person presented comments on the proposed project. The transcript does not indicate that the commenter was told to sit down or that he was out of order. The transcript then indicates that a request was made for any other comments. Because no one else presented comments, the meeting adjourned at 6:24 PM; however, per CSLC policy, the meeting was held open in order to provide meeting attendees the opportunity to make additional comments. No other comments were delivered and the meeting officially ended at 7:01 PM.

IND2-2 The EIS/EIR has been completed in compliance with the California Environmental Quality Act (CEQA). Cumulative impacts associated with the proposed project and other reasonably foreseeable projects are discussed in section 4.13.

Locating new facilities adjacent to existing facilities is generally preferred because disturbance in previously undisturbed areas is minimized. In addition, utility facilities within the California Desert Conservation Area (CDCA), including all pipelines with diameters greater than 12 inches, are required by the CDCA Plan to be located within designated utility corridors. The CDCA Plan (as amended) was proposed pursuant to the Federal Land Policy and Management Act of 1976 and provides guidelines for all BLM management decisions made for approximately 10.6 million acres of public lands within the CDCA. The entire 186.2-mile-long portion of the proposed route in California is located within designated Utility Corridors D and G. As a result, the Kern River 2003 Expansion Project is consistent with the management objectives of the CDCA Plan. The designation of utility corridors is outside the scope of this EIS/EIR. Impacts on desert tortoise are discussed in section 4.7.2.

IND2-2 (cont'd)

place even over a period of time. The 3 pipelines currently existing south of west Hinkley, and the 2 of those which ultimately now continue due eastward, have eliminated roughly a 100 foot wide 8 mile of township from any future development and have killed or eliminated and damaged the habitat of 100s of the Desert Tortoise and other habitat, to the degree that the population of them has been so reduced that the government and companies involved can now claim a minimized population impact. The government is sanctioned with and has the responsibility to protect these animals. Yet a 4th proposed project in that same area would not only additionally scar what used to be a beautiful view of a range of soft rolling hills and take more habitat and Tortoise wildlife and habitat, it would also significantly disable what is now a transit area for these animals. The most recent U. S. Fish and Wildlife studies show that these animals do exist in sufficient numbers in this area for it to be an area of concern, that is, from roughly in a strip from 2 miles west of Valley View to Hinkley Road along the proposed project area.

3)

IND2-3

The safety and health of the public are being ignored. Irrespective of the provisions made which are claimed to the contrary, this is not an area of "desert scrubland" and scattered homes, an attempt to minimize and give the impression that the area is of little public interest or that residents are to be belittled when it comes to a threat to public health and safety, which precisely what this project and the current gaslines do for this area. The explosion of a pipeline going through a rural area of Carlsbad, New Mexico in 2000 is a good example, having killed 12 people in what is *truly* a rural area. These pipelines, and that proposed, border a rural residential area with children, some under foster care, a community with a large number of elderly and infirm poersons, along with livestock and a varied additional population. I gathered immediately from the sequential maps sent to me for this and others areas near here, that not a single dwelling shows on those maps, which have been carefully designed to exclude evidence of rural/ residential existence; anyone looking at them who would be in any position of both official or citizen judgment is led to believe falsely that there is no one out here, and that the pipeline goes through un-inhabited desert land.

Testimony by Robert Chipkevich, Before the Interim Committee on Radioactive and Hazardous Materials, before the New Mexico House of Representatives, on the NTSB Investigation of The Pipeline Accident Near Carlsbad, New Mexico September 25, 2000 (which see), is an excellent example of the compression of the range of hazards and inneficiencies which exist to threaten this area. Pipelines are not sufficiently and efficiently monitored and inspected and patrolled. This was only one pipeline yet here there are no less than 3 with a 4th proposed. Special corrosive studies which include the introduction of Chromium 6 (please be reminded this is where the infamy of "Erin Brokovich" occurred, and be reminded the "plume area" has not only widened in the aquifer but also has now been found in the air and topsoil) have never been done nor have they ever been addressed in the proposal. It is totally unknown as to what other corrosive and toxic substances are being formed when these chemicals combine with current soils along the route here and immediately east and west of this project area. Not a *single* study has been performed. These issues bear *directly* upon the safety and health of the public, which the government is sanctioned to protect. Any accident and/or other effect or result of minimiztions and ignorance and intent to continue this pipeline in this area certainly shall not

IND2-3 The maps referred to were not the basis for determining existing population levels along the pipeline route. Ground and aerial surveys were conducted to identify existing residences along the pipeline route and this Information was used to determine the DOT class location designation for the pipeline. In addition, Title 49 CFR Part 192.609 includes requirements for pipeline companies to implement studies and revisions of the pipeline design when an increase in population density adjacent to the right-of-way indicates a change in class location for the pipeline. Section 4.12.1 provides a description of class locations and the construction and operation requirements for each class designation. The proposed pipeline is a natural gas pipeline and does not contain or involve the use of Chromium 6. A discussion of the safety and reliability of natural gas pipelines is presented in section 4.12.

IND2-3 (cont'd) relieve the government, the FERC, the CSLC, the State of California and the project companies from certain financial and physical and moral and ethical liability, accountability, and responsibility where safety and health are concerned within context of proximate dangers inherent in the proposed route, and other factors.

4)

IND2-4 Irrespective of any official State agency denial, the project through this area continues to cut across known historical roads connecting SanBernardino with Death Valley and Panamint Vally heavy mining areas over 100 miles north, the roads shown on 1871 maps, and which are still in use. This includes both the Old Hinkley (Wagon) Road, and the Old Hillview Truck Road, the northernmost portions of which are now cut by the 3 current pipelines, yet again proposed to be cut with the 4th. Current historical data is defective and ineffective

I therefore submit that, under any applicable State and/or Federal CFR or any other Statute(s), where any person requests it, and I so do here, that a re-review occur: where any historic studies of this area described are sufficiently missing data; where changes can be taken in ways which could affect historic areas in an unanticipated manner; where areas previously undocumented be discovered by a yet to be determined undertaking; where a known property will be affected in an unanticipated manner; where a property that was to be avoided has been, or will be, otherwise affected; where any condition of the undertaking (such as a delay in implementation or implementation over time) may justify reconsideration and/or the current National Register status of properties within the undertakings' Area of Potential Effect. This includes both the current proposal and prior projects in place in this area.

5)

IND2-5 Although solid provisions called for past and proposed gasline burial surfaces of the desert be returned to original quality by re-seeding, replanting and other means, the current rights-of-way remain with obvious and ugly straight-line scarring which can even be seen from *space*. Also in places where the old streambeds, where water runs off and around during rainy periods, are attempting to return to their old courses. Old water courses are now cutting across and through these prior contruction areas where burial of the lines occurred, thereby proving over time that this route has not returned to the contours designed in contruction, but have been totally ruined by the prior projects. In spite of the provisions, indeed the *orders*, specified and promised in prior projects, no care has been given to returning the surface to any rehabilitative effect, and are a total failure. Further west, where different soils and geologies exist, the surface is reasonably returning, yet here no provision was give to the uniqueness and particularity indigenous to the area concerned and addressed in this pleading. Compounding this are 3 roads used for patrols of each current gasline that take an additional portion of the desert and which are 2-3 times the width of the pipelines for which each road is used to patrol, effectively having ruined this unique area 9 times the area reserved for the pipeline *in situ*. And it is proposed to perform this act yet again?

IND2-6 6)

In volume 1 of the Draft EIS/EIR, page 4-128 at 4.7.2.1, it is stated: **"It is not possible to speculate on potential acreage affected or the extent to which any given species would be**

Individuals 2

IND2-4 Cultural resources surveys have been completed for the portion of the pipeline route in California, and reports documenting the results of survey have been provided to the appropriate agencies for review. Hinkley Road and Hillview Road are crossed by the proposed route, but were not identified as significant resources during cultural resources survey. The significance of a cultural resource is not solely determined by its age. Resources must also be associated with events or individuals that have made a significant contribution to United States history; embody a distinctive style or method of construction; and/or provide or have the potential to provide information important in history or prehistory. It was determined that these two roads do not possess the additional requirement to be listed on the National Register of Historic Places. The FERC and the BLM have consulted on the eligibility of the sites included in the California survey reports. The need for additional identification level surveys along areas already surveyed and reviewed by the appropriate agencies has not been established by such consultations.

IND2-5 See the response to comment CO8-1. KRGT proposes to use aerial surveillance to patrol much of its right-of-way, which would minimize the need for ground access. When ground access is required, KRGT would only use existing access roads; no new roads would be created. However, KRGT would have to maintain access to all portions of the permanent right-of-way by four-wheel drive vehicles to conduct emergency and periodic maintenance.

IND2-6 The information presented in the wildlife and special status species sections of the EIS/EIR (sections 4.6.1 and 4.7, respectively) is based on extensive research, agency consultations, and species-specific surveys. Potential impacts associated with the proposed project on wildlife and special status species occurring in the project area are discussed in sections 4.6.1 and 4.7. See also the response to comment CO8-1.

IND2-6 (cont'd)

affected by the other activities in the project area because the Agency Staffs have no control over actual routes, facilities, or project feasibility".....then goes on to state the mitigations available. The *comprehensive* data on this area are non-existent, and therefore the proposal, based upon the studies heretofore performed, render it defective. The rural residential nature of this area has been ignored, because no studies have been performed within it and adjacent to the project area. Not a single resident has been queried or interviewed about witnessing the obvious and other undocumented wildlife in this area. No comprehensive picture has been accumulated in order to look at the whole of it, and therefore no viable understanding of the true effect upon this area has been or can yet be perceived.

For the past year, I have been examining the data as a whole. The Tortoise is not the only species here, although it is prevalent in this Transit area. It cannot now effectively transit over the current 3 pipelines or the roads adjacent to them, nor could it overcome yet a 4th project obstacle. What was habitat alongs the range of hills to the west has been obliterated. This is a potential study and research area for etymology, geology, biology and State and National history. It has been passed by and ignored in these projects because it is a township and a recent infamy in what is thought to be a basically dried up desert area, which is in fact one of the single most richest geological and biologic and historic areas I have ever witnessed. Further projects like this and the gross deficiencies left behind by these prior projects and any proposed mitigation for the current proposal, can only severly damage opportunities for un-interfered-with study and research and rehabilitation and preservation.

7)

IND2-7

On page 4-177 of the same document, in the paragraph just before section 4.8.6, it is stated, **"Caltrans is planning to realign and widen State Route 58 in San Bernardino County to a four-lane expressway from the Kern County line to approximately 7.5 miles east of U.S. Highway 395. Construction of the State Route 58 Project is currently scheduled to start in August 2006."** ..Either Caltrans has misinformed you or withheld information, or the FERC and your office and the CSLC and the State Clearinghouse are misinforming or withholding information from the public with regard to this statement. There is no third possibility.

In August of 2001 I informed Cy Oggins of the CSLC by phone and letter, and included the existence of the Caltrans proposal to widen and realign Hwy 58 through Hinkley (from its current 2-lane right of way to a 4-lane expressway 2000 feet south then 8 miles to connect from 2 miles west of Hinkley to just west of Lenwood Road) scheduled for August 2006. (This is intriguing, since they have not yet issued an EIS/EIR). Caltrans has been withholding information from the public, even from those on the proposed right-of-way, and indeed misinforming the public intentionally, and other public agencies as well. This is no rash statement and I would not so state without proof. The proposed right of way, from the west, would begin 2 miles west of Hinkley, go directly southeast over the range of low hills just 200 feet away from the current pipelines, then turn due east and parallel the pipelines as they trend due east in the same area also, and parallel them for 8 miles. The right of way proposed is 520 feet, and the current pipelines are immediately 100-200 feet south of it. Another index is that the north part of CDOT's proposed R/W abuts directly on the south shoulder of Frontier Road. This not only is a cumulative impact of a severe nature, but yet combined with the Pipeline proposal creates a significant impact upon

IND2-7 The source of the information presented in the EIS/EIR regarding the Caltrans plan to realign and widen State Route 58 is a comment letter dated September 10, 2001 from the Caltrans to the FERC. A map was attached to the letter that showed the extent of the proposed Caltrans project in relation to the proposed Kern River 2003 Expansion Project. The letter also indicated that the State Route 58 Project is in the Environmental Study/Approval Phase and should be completed by January 2003. This letter is available for viewing on the FERC Internet web site (http://www.ferc.gov). (Using the "RIMS" link, select "Docket #" and follow the instructions (call 202/208-2222 for assistance).) The realignment and widening of State Route 58 is also considered in the cumulative impacts analysis in section 4.13.

IND2-7 (cont'd) this entire community as well as ruining and removing over a 1000 feet of rural residential property from public domain, as well as putting industrial strength projects all lumped together in a quiet and peaceful rural residential area which still captures a unique heritage, and which is yet free from the effects of civilization. That is why we chose to live here. Their minimization of effects are in essence consistently fictional, minimized, and fabricated. Since I was very clear in referencing in communicating to Mr. Oggins, and that information is missing from your EIS/EIR, and the current EIS/EIR is by law deemed to be complete, either he or your office or Caltrans is withholding and/or suppressing that information in order to avoid its being known, which might be deemed in the future to be an obstruction of justice, since the public is deprived of a rightful accesss because of an intentional omission. Also, the CSLC is supposed to acting as the lead agency on FERCs behalf. I can provide a copy of my letter to Mr. Oggins as well as a verification of the date and time I communicated with him by phone.

8)

IND2-8 In addition to these incursions, The Fort Irwin National Training Center will be expanding greatly to within very near the north side of Hinkely, and the Mojave Water Agency has put water recharge stations to bring the aquifer up in every community *except* Hinkley, although we are in the same "adjudicated area", and pay the taxes on water use as everyone else. The community continues to experience the fiasco of PG&E having polluted the aquifer in one area, but a remedial program of transforming the toxic chemical to an unharmful version by a certain method has been ordered stopped because there was a flaw in the scientific thinking, and Chromium 6 was inadvertantly released into the atmosphere, and there are now above-ground problems for residents which did not exist before. These are additional valuable factors, not for mitigation, but to serve to substantiate that enormous cumulative (and an unacceptable number of) and varied impacts warrant that this community establish a trend for being avoided, and not allow it be consigned to projects which ruin it and endanger its residents, and mitigate and interfere with it rehabilitation, perhaps to return it to a state in which its older residents recall as a nickname for the town earlier this century: Garden City. It was so green here that one could not see the desert.

9)

IND2-9 It would perhaps seem insulting or complaining to end this letter on what seems a sour note. I have included it a a point because it is germain to the EIS/EIR, and because it is true. Most importantly, it is an encouragement to courage and vision in public service.

For all its length and depth, the draft report minimizes and misses the point in terms of actual interest and benefit. It nearly entirely omits the real actual effect on human beings in communities where this project is proposed to go through. I cannot speak of the other communities, but I do know this one. When the Federal government initiated and enacted regulation of electricity and other utilities, the keystone laws were meant to protect the public from profiteering companies whoise first loyalties reside with stockholders and private interests, and it is within those laws the FERC began. This has seemed to me to completely be reversed, even to the degree that the public health and safety could be threatened, and that rural communities could be ruined, especially where when unique they could be subjects for study, research and rehabilitation. In this way, by avoiding this community by going much further south

IND2-8 The expansion of the Fort Irwin National Training Center is discussed in section 4.8.6.1 and is included in the cumulative impacts analysis in section 4.13. A discussion of the specific impacts of the Fort Irwin National Training Center expansion and the PG&E incident on the community of Hinkley is outside the scope of the proposed project and this EIS/EIR.

IND2-9 The EIS/EIR concludes that KRGT's proposed route is the environmentally preferable project. The factors that were considered in this determination are summarized in section 5.1. In addition, because the proposed route is located within the CDCA, it is required to be located within a designated utility corridor. If the route were moved south, it would be outside of a designated utility corridor and inconsistent with the CDCA Plan. See also the response to comment IND2-2.

IND2-9 (cont'd) through to Lenwood Road, would be a step toward restoring public confidence that our government is protecting the interest of people and ccommunities.

Toward that end, I will be happy to provide infomnation which might be a basis for further consideration.

Sincerely,

Edward Riddle

Dear Sir or Madam,

I have the following comments to make on the Keern River 2003 Expansion Project.

The document falls short in it's task of informing both the public and the permitting agencies of the major benefits and adverse effects of the proposed action and of the major benefits and adverse effects of realistic alternatives by failing to fully describe the adverse effects of the proposed action and by leaving out of the analysis viable and less demaging alternatives. Because of these omissions the document must be judged as containing fatal flaws.

IND3-1 | Arbitrarily limiting the scope of the document to only looking at a natural gas pipeline option for supplying the shortfall in electrical power violates both the spirit and letter of the NEPA law. It is analogous to only looking at a bigger highway and ignoring HOV lanes and buses and light rail in the transportation sector. Such a decision is environmentally unsound.

IND3-2 | The document incorrectly identifies the true "purpose and need" for the project. The true purpose and need is to supply the shortfall in electrical power generation which is occurring in California in a safe, environmentally sensitive and reliable manner.

IND3-3 | Because it looked only at a pipeline option it failed to identify realistic less demaging practical alternative plans that would deliver the same or similar benefits without causing such large and avoidable impacts to the natural environment and cultural sites. By segmenting the project it clearly fails to identify significant environmental impacts associated with the proposed project. It fails to identify the immense long and short term socioeconomic impacts that this project will have on the Intermountain West and especially Utah and the long term energy well being of the nation as a whole. These facts render the FERC and the CSLC staffs conclusion that approval of the proposed project would have limited adverse environmental impact in serious error.

IND3-4 | It may seem trivial to some but one of the big problems is the fact that the energy use is put into "gobbledygook". It is not realistic to expect the ordinary citizen to understand what "802,826Dth/d" is! One goes in vain to the glossary of terms to get a translation. It is noteworthy that in the company prospectus one finds readily understandable terminology for natural gas in terms of billions of cubic feet per day.

The implementation of this project will lead to the following gross environmental impacts; none of which are identified or evaluated in the document:

IND3-5 | Using natural gas to make electricity to heat water and to cook with wastes roughly two thirds of its heat value. The billion dollars that this pipeline would cost and the documented additional billions of dollars to be spent on new power plants would be much better spent laying gas lines and converting electric hot water heaters to gas water heat and electric ranges to gas ranges. This would save the roughly two thirds of the heat value that will be wasted in the cooling towers etc. of the power plants. This would reduce the number of acre feet of water required to operate the power plants. It would reduce the peak power requirements that existing power plants are experiencing now because the largest amount of the peaking requirement goes to hot-water and cooking activities as folks prepare for work in the morning and return in the evening.

If "global warming" is "true" and not a myth then the use of 3 times as much natural gas to make electricity to do this job violates this concern. If it is true that there is a "water crisis" in California and Nevada then the use of two thirds of the heat energy of the natural gas being used for electricity to boil off precious desert water is totally inappropriate.

IND3-6 | There are other issues that are also of great concern. With completion of the pipeline and the associated power plants the well being of ultimately millions of people will hinge on the reliability of this pipeline. If a natural [or in light of the September 11th attack a man made] disaster should cause an interruption of service the impact on the human and built environment would be enormous. For example if the string of powerplants it will serve were to go off line in say August the heat stroke death toll in Las Vegas as building temperatures rose to 100 + degrees Fahrenheit would be catastrophic.

Conventional coal fired power plants and nuclear power plants act independently of one another and have reserves of fuel on hand. In the case of coal fired power plants the working reserves run any

Individuals 3

IND3-1 See the response to comment CO3-8.

IND3-2 The description of the project's purpose and need in section 1.1 states that nearly all of the proposed facilities would serve existing and new power generation markets in California and Nevada. The EIS/EIR concludes that the project can meet this need in a safe, reliable, environmentally sensitive manner by implementing the proposed requirements and mitigation measures identified throughout the document.

IND3-3 See the response to comment CO3-8. Both the FERC and the CSLC applied the applicable procedures to determine the appropriate scope of its environmental review for project-related nonjurisdictional facilities (see section 1.4). Even though several actions related to the Kern River 2003 Expansion Project were determined to be nonjurisdictional for the purposes of this EIS/EIR, each is undergoing its own environmental review (see table 1.4-1). In addition, the environmental effects of the nonjurisdictional facilities associated with the proposed Kern River 2003 Expansion Project are addressed in the cumulative impacts analysis in section 4.13. Socioeconomic impacts are discussed in section 4.9.

IND3-4 A dekatherm is a unit of energy equal to 10 therms (a commercial unit of heat energy). A dekatherm per day (Dth/d) is a standard unit of measurement used to describe the natural gas capacity of a pipeline. The dekatherm is used in the energy industry as a synonym for 1 million British thermal units (Btu) or 1,000 cubic feet (Mcf).

IND3-5 The new power plants identified in table 1.4-1 would operate as combined cycle power plants. Combined cycle power plants combine gas turbines and steam turbines to produce electricity. Natural gas is burned to activate gas turbines that are attached to a generator to produce electricity. Waste heat from this process is used to power steam turbines used to generate additional electricity. Power plants using only steam turbines would burn the gas to heat water, creating steam, which in turn would activate turbines attached to electric generators. The combined cycle power plants use the gas more efficiently with less waste.

IND3-6 Because the Kern River 2003 Expansion Project would loop an existing pipeline, it actually increases the reliability of the natural gas transportation system. In the event of an incident or of a shutdown for maintenance on one of the pipelines, the other pipeline could still transport its volumes of natural gas to the end users in Utah, Nevada, and California.

IND3-6 (cont'd) where from at least a week to generally a month or so of stockpiled fuel and are not subject to this horrendous safety problem which is not addressed in the document. It is important to note that there may not even be enough capacity in the electrical transmission lines to allow other areas to help as they would surely want to do. This is another fatal flaw in the document.

IND3-7 As to safety of the pipeline we are only told that it will be built to minimum current standards and that 80 years or so of historical experience in California with gas lines demonstrates that earthquakes are not a problem. The flaw in that argument is that traditional gas lines of even just 25 years ago were typically smaller than the 36 inch and 42 inch sizes of this project and utilized maximum operating pressures of 600 to 650 psi not the 1200 psi contemplated in the proposed pipeline making this argument flawed.

If one wishes to compare apples and apples instead of apples and oranges a complete safety evaluation of the effects of larger pipes fabricated from higher strength but less ductile materials and using larger diameters must be circulated for comment. What all this means is what it has always meant: it is much safer to transmit electricity over 550 kV power lines than to transmit it through a pipeline. More significantly the towers needed for such a transmission line do not require a raw 100 foot

IND3-8 wide scar to be bulldozed from Wyoming diagonally through Utah into a wilderness area of Las Vegas (Redrock Canyon Area) and through California. It should be noted in passing that there is not enough native plant seed in the State of Utah to replant the disturbed areas as detailed in the document. What this project will do then is tie up what seed there is and render every other project in the state which similarly requires native seed to be stopped. This was not discussed in the document.

IND3-9 Finally the socioeconomic issues must be examined. These are tied to what Californians generally call "sustainability". If the past is prologue then we will see an instant replay of the 1970's experience i.e. when supply shortages were responsible for periodic curtailments of gas deliveries that caused considerable economic hardship to industrial and commercial users, and occasionally even to residential customers. New gas hookups were prohibited because of supply problems. The extreme pessimism regarding the future of natural gas culminated in 1978 with the passage of the Power Plant and Industrial Fuel Use Act, which legally restrained the utilization of natural gas in industrial and electric utility plants.

It has been estimated (See http://hubbert.mines.edu/news/v97n3/mkh-new4.html) that " ... an average of about 13,100 wells would have to be drilled for gas each year for the next 20 years to achieve the EIA reference case. However, the average annual per-well gas output declined by 20 percent over the past dozen years. If it fails by the same percentage over the next 20 years, some 638,000 producing gas wells would be needed, requiring the drilling of about 31,900 wells per-year." Thus the socioeconomic impacts section of this document fails to identify how the huge increased demand that this pipeline and it's associated power plants would inevitably create would effect residential gas prices in Utah, Nevada and California. This is important because as already noted above the highest and best use of natural gas is for domestic heating of homes, hot water needs and cooking. This is because 80% and more of the heat value of the gas is available in such uses whereas only at best 33% is available for use when it goes through a power plant. I am sure you would have had many such comments about this document if it's language had been framed in a way that the ordinary citizen could understand and it had been advertised on television and the true "footprint" and associated impacts had been shown to viewers. A satisfactory and sound solution of California's energy woes is important to all of us in the west. However FERC has a responsibility to see that the seperate States are treated fairly in the process. Just as diversity is good in the stock market diversity of supply is good in power generation and coal and nuclear plants deserve to be realistically considered in California. The negative effects which this "all your eggs in one basket" project will have on energy policy are not acceptable.

Sincerely,
Denis D. Stuhff
2111 West 12974 South
Riverton, Ut. 84065

Individuals 3

IND3-7 Title 49 CFR Part 192.101 includes the minimum requirements for the design of pipe. The design formula for a pipe is determined by using various known factors, including the design pressure, yield strength, outside diameter, and pipe wall thickness. As a result, the diameter of a pipeline is directly tied to the types of materials used to manufacture the pipe and to the method of construction that is used. Pipeline diameter does not affect the yield strength of the pipe. In addition, the grade of steel determines how flexible a pipe would be in the event of earth movement. The proposed project would use an X70 grade steel at fault crossings. This grade of steel has an acceptable yield strength and is sufficiently flexible. It is incorrect to assume that as a pipeline diameter increases, the operational safety decreases.

IND3-8 The availability of seed was a consideration in seed selection for this project. Most of the seed species identified in section 4.5.2.1 are commonly available through commercial sources.

IND3-9 Socioeconomic impacts of the proposed project are discussed in section 4.9. The proposed project is not expected to have a significant impact on natural gas reserves. A July 2001 study of the natural gas resources of the CRM Region (filed with KRGT's application) indicates that the proven natural gas reserves and undiscovered natural gas reserves would be adequate to supply the existing pipelines and other proposed pipeline expansions. This study describes the CRM Region as containing approximately 21 percent of the remaining United States natural gas supply. In addition, the United States natural gas reserves are approximately 50 percent depleted, compared to a depletion of only 16 percent in the CRM Region (depletion refers to the amount of natural gas produced historically, as compared to the total identified supply comprising historic production, remaining reserves, and undiscovered resources). Historically, the CRM Region has been underutilized, and even with the publicly disclosed pipeline expansion projects under consideration, the region will have a gas supply life of 61 years. The power plants that would be supplied with natural gas from this pipeline would not replace existing power plants in the region that include nuclear and coal-fired plants.

April 11, 2002

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1 A
Washington, DC 20426

Dear Ms. Salas:

Reference: Docket No. CP01-422-000; CA Clearinghouse No.2001071035; BLM Reference No. CACA-43346; Draft EIS/EIR Kern River 2003 Expansion Project (Kern River Gas Transmission Company)

I am an affected property owner along the proposed right of way of the Kern River 2003 Expansion Project. I am the owner of a five-acre parcel:

Parcel Number: 0516-271-32
Dagget, CA 92327
Section 22-T9N/R1E SBB&M

After review of the Draft EIS/EIR for the above referenced project, I have the following comments:

IND4-1 I have requested in my letter dated July 31, 2001 that the environmental document address the cumulative impacts of the three existing pipelines, and this fourth pipeline project across my property. The three existing pipelines have caused approximately 50 percent of my property to be unfit for use. A fourth pipeline will result in further devaluation of one of my few possessions of significant value. **The Draft EIS/EIR does not adequately address my concerns in any way. To the contrary, it is claimed that the applicant is somehow exempt from addressing my concerns.**

The document admits the potential for cumulative impacts on page ES-16, *"...there is some potential for cumulative effect on resources such as vegetation and wildlife (including some special status species), land use, recreation, visual resources, socioeconomics, cultural resources, air quality, and noise. For the Kern River 2003 Expansion Project, mitigation has been developed or recommended to minimize, avoid, or compensate for adverse impacts on each of these resources."*

What mitigation measures will *"minimize, avoid, or compensate for adverse impacts"* on my private property rights, and my sensitive economic condition as a low-income senior citizen? After searching the environmental document for specific details for mitigation measures, I can find only two possible alternatives proposed that might apply to my situation (the area is considered habitat for the desert tortoise population):

a) Land purchase for habitat conservation. *"...KRGT would be required to acquire land as part of its mitigation for habitat loss associated with the Kern River 2003 Expansion Project. The specific locations of land involved in such transfers would be negotiated between KRGT, the appropriate land management agency, and the landowner to identify mutually agreeable locations that meet the mitigation requirements for the type of habitat lost as a result of the project."* (Page 4-163)

Individuals 4

IND4-1 The land retained as permanent right-of-way for the pipeline would be allowed to revert to former use; however, tree crops such as orchards and aboveground structures would be prohibited on the permanent right-of-way. The area used for temporary construction right-of-way and temporary extra workspace would be allowed to revert to prior uses following construction with no restrictions. The easement agreement between the company and the landowner typically specifies compensation for the loss of use during construction, loss of nonrenewable or other resources, and allowable uses of the permanent right-of-way after construction. The acquisition of an easement is a negotiable process carried out between KRGT and the landowner and is beyond the scope of this EIS/EIR. The effect that an easement may have on property values is discussed in section 4.9.6.

IND4-1 (cont'd)

b) Easement negotiations or eminent domain. *"Specific details would be finalized between the landowner and KRGT during easement negotiations...If an easement cannot be negotiated with a landowner and the project has been certified by the FERC, the company may use the right of eminent domain..."* (Page 4-164)

The impact of the project on my property values is claimed to be somehow exempt. *"The effect that an easement may have on property values is a damage-related issue and should be negotiated between the parties during the easement acquisition process or would be determined during condemnation proceedings. This negotiation is beyond the scope of this EIS/EIR"* (Page 4-216).

As I have stated previously, the three pipelines across my property have resulted in approximately 50 percent of my property to be unfit for use, a fourth pipeline will result in its further devaluation. Therefore, negotiation of an additional easement to cross my property will not be in my best interests. In my opinion, eminent domain proceedings will result in "taking" of my property. I have made a very reasonable offer to sell the property, which is in line with comparable sales prices for this area. However, I have been told that the applicant is not in the business of owning land.

I ask that the applicant be required to address my concerns as a cumulative effect, and as an environmental justice issue, due to the fact that I am a senior citizen, and part of a low-income population. The applicant could purchase my property for a reasonable price, lay their new pipeline, and retain the undisturbed portion as part of its required mitigation for habitat loss.

I must conclude, the environmental document has not addressed my concerns over the loss of use, and devaluation of my property, as well as the environmental justice issue. Until these concerns are adequately addressed, I request that approval of the project be withheld.

Sincerely,

Jan Bisig

Jan Bisig
400 E. Roberts Lane #74
Bakersfield, CA 93308

Cc: Gas Branch 1
Mr. Cy Oggins, CA State Lands Commission
Mr. Doug Whisenant, Williams Gas Pipeline-West

Comments on the Draft EIS/EIR and Responses

PROJECT APPLICANT

KERN RIVER GAS TRANSMISSION COMPANY

Docket No. CP01-422-000

COMMENTS ON THE
DRAFT ENVIRONMENTAL IMPACT STATEMENT
DRAFT ENVIRONMENTAL IMPACT REPORT

FOR THE

KERN RIVER 2003 EXPANSION PROJECT

March 2002

Applicant

Applicant 1

COMMENTS ON THE
DRAFT ENVIRONMENTAL IMPACT STATEMENT/
DRAFT ENVIRONMENTAL IMPACT REPORT
FOR THE
KERN RIVER 2003 EXPANSION PROJECT

Enclosed please find Kern River Gas Transmission Company's (KRGT) comments on the Draft Environmental Impact Statement/Environmental Impact Report (DEIS/EIR) issued February 2002. Overall, KRGT is pleased with the document and feels the DEIS/DEIR reflects the commitment KRGT and the agencies have made to address and resolve issues and scoping comments received during the course of the project.

At this time KRGT will limit comments to the DEIS/EIR as opposed to waiting to include verbal comments received during the upcoming public meetings or written comments posted on RIMS. KRGT hopes that by providing a timely response on the DEIS/EIR the agencies will be able to distribute their workload more evenly over the comment period. KRGT's comments were prepared under the direction of:

Mr. Micheal G. Dunn
Kern River Gas Transmission Company
Project Director
(801) 584-6762

A1-1 Page ES-5, Paragraph 1, Soil Liquefaction in Salt Lake Valley

Please refer to KRGT's comments to Page 4-21 of the DEIS/EIR.

A1-2 Page ES-5, Paragraph 1, American Lifelines Alliance

A statement in this paragraph addresses design codes: "KRGT has also committed to design all project facilities to meet or exceed the latest edition of the Uniform Building Code or International Building Code and incorporate current seismological engineering standards such as the Guidelines for the Design of Buried Steel Pipe (American Lifelines Alliance, 2001) or other recognized industry standards for seismic-resistant design."

KRGT has not previously committed to incorporating additional engineering standards such as the Guidelines for the Design of Buried Steel Pipe for seismic-resistant design. However, KRGT's design does comply with all applicable Federal, State, and Local requirements, including DOT 192 and, where applicable, the Uniform Building Code and International Building Code. KRGT feels adhering to these requirements are sufficient to address seismic design concerns.

A1-3 Page ES-5, Paragraph 3, California Certified Geologist

KRGT retained Jeffery Keaton, Ph.D. to assist in the design of both the original Mainline and proposed looping. KRGT will continue to retain Dr. Keaton during construction to oversee activities associated with geology, including activities in areas of potentially unstable ground, and attempts to locate traces of Quaternary faults during excavation. Dr. Keaton is a certified engineering geologist in the State of California. KRGT understands this requirement applies only to facilities in California.

A1-4 Page ES-6, Paragraph 2, Topsoil Segregation

Please refer to KRGT's comments to Page 4-38, Paragraph 2.

A1-5 Page ES-8, Paragraph 3, Bingham Creek

Please see KRGT's comment to Page 4-61, Paragraph 2.

A1-6 Page ES-8, Paragraph 7, Vegetation

The Agency Staff concludes that regeneration of desert vegetation to pre-disturbance conditions would take considerably longer than 3 years, to which KRGT concurs based on experience, available literature, and input received from a number of specialists in desert restoration. However, KRGT believes establishing a 3-year period with the significance criteria for the desert region is unrealistically low and does not adequately reflect that restoration is a process extending over a greater period of time. Recent consultation with the BLM has identified a qualitative and quantitative monitoring program to determine revegetation success over a 6-year period. KRGT has incorporated the 6-year provision into the reclamation plans for those portions of the Mojave Desert affected by KRGT. KRGT is requesting the significance criteria be changed to reflect BLM's 6-year monitoring program. These significance criteria are further addressed in KRGT's comments to Page 4-73, Paragraph 2.

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A1-1 See the response to comment A1-25. The change has also been made in the Executive Summary.

A1-2 Uniform Building Code (UBC), International Building Code (IBC), and DOT Title 49 CFR Part 192 requirements pertaining to the seismic design criteria do not necessarily address all seismic design criteria required in California, particularly fault crossings and liquefaction potential zones. In California, the CSLC requires the incorporation of current seismological engineering standards such as the *Guidelines for the Design of Buried Steel Pipe* (American Lifeline Alliance), *Guidelines for the Seismic Design of Oil and Gas Pipeline Systems* (American Society of Civil Engineers), and other recognized industry standards for seismic-resistant design at all fault crossings and liquefaction potential zones in California.

A1-3 The paragraph has been revised.

A1-4 See the response to comment A1-28. The Executive Summary has also been revised.

A1-5 See the response to comment A1-40. The Executive Summary has also been revised.

A1-6 See the response to comment A1-45.

A1-7 | Page ES-9, Paragraph 3, Reclamation Plans for Desert Portion

Agency Staff correctly indicates that KRGT is still in the process of finalizing details of the reclamation plans for the desert portion of the route (NV and CA). Based on recent consultations, review of additional literature and applicable case studies, and further development of BLM's *Draft Restoration Plan for Energy Projects in the Las Vegas Field Office,* KRGT has revised its Nevada and California Reclamation Plans. These revisions include addressing direct seeding of all disturbed areas, and establishing monitoring criteria and schedules. These plans are being provided to the land-management agencies for additional review and comment and input. KRGT expects to submit the revised plans to the FERC and CSLC by the close of the DEIS/EIR comment period.

A1-8 | Page ES-9, Paragraph 4, Noxious Weeds

KRGT is herein submitting a revised Noxious Weed Plan in accordance with the Agency Staff recommendation with the exception of re-surveying the right-of-way. KRGT strongly disagrees with the requirement to perform a thorough field survey for noxious weeds along the entire route prior to construction. KRGT has already completed a noxious weed survey for the project and requests this requirement be deleted from the mitigation measures on Pages 4-96 and 4-97 and condition 22 on Page 5-8. KRGT provides a more detailed justification for our objection in comments to Pages 4-96 and 4-97 below.

A1-9 | Page ES-18, Paragraph 2, Long Term Reduction of Special Concern Vegetation Communities

Please see KRGT's comments to Page 4-90.

A1-10 | Page 1-13, Paragraph 4, Fencing of Non-Linear Rights-of-Way

KRGT understands the requirement to fence non-linear rights-of-way applies to permanent aboveground facilities such as compressor stations, valve sites and launchers/receivers. KRGT does not propose to fence temporary use areas such as ATWS, pipe storage, offloading sites and contractor yards during reclamation.

A1-11 | Page 1-20, Table 1.6-1, USACE Section 404 Permit for Yellow Creek

KRGT notes the crossing of Yellow Creek has been permitted under the Omaha District, Nationwide Permit 12 authorization issued to KRGT on October 15, 2001. KRGT recommends revising Table 1.6-1 to reflect inclusion of the Yellow Creek crossing under general Nationwide 12 Permit authorization.

Applicant 1

A1-7 See the response to comment A1-55. The Executive Summary has also been revised.

A1-8 See the responses to comments A1-58 and A1-59. The Executive Summary has also been revised.

A1-9 See the response to comment A1-56.

A1-10 The paragraph has been revised to indicate that only permanent aboveground facilities would be fenced.

A1-11 The table has been revised.

A1-12 | Page 2-7, Table 2.1.2-2, Receiver at Milepost 96.4

The DEIS/EIR notes this launcher is not co-located with an existing aboveground facility. However, the launcher is co-located with the existing launcher/receiver, and a Mainline valve.

A1-13 | Page 2-7, Table 2.1.2-2, Co-Location of Valves

Please note the non-collocated valve at MP 164.6 has been moved to MP 164.10. The valve location was changed so that the proposed valve would be co-located with a new Mainline to be installed at this MP due to a change in Class location on the Mainline. Leaving the proposed valve at MP 164.6 would result in two stand-alone valves within 0.5 miles of each other (which is not desirable). The new Mainline valve will be installed as part of a separate project under KRGT's blanket certificate and would occur independent of this project. KRGT notes that the Mainline valve installation will occur around the same time as the proposed project and therefore, KRGT is unable to say the proposed valve is co-located with an existing valve and is not requesting a change in the table to that effect.

A1-14 | Page 2-9, Table 2.2-1, Land Requirements

As noted in comments to Appendices C, D, and P KRGT has updated land requirements due to elimination of some wetland variance requests, to reflect the status of landowner negotiations, and to incorporate minor route variations identified subsequent to October 24, 2001. As now proposed, the project will reduce temporary impacts by approximately 40 acres. Operational right-of-way would not be increased. KRGT is providing revised acreage figures for Table 2.2-1 and request the revised figures be used in the FEIS/EIR.

A1-15 | Page 2-16, Paragraph 5, Mainline Valves

Please note that KRGT has increased the standard distance between co-located valves from 25 feet to 40 feet. This change is required due to pipe stress analysis that determined that a 25-foot spacing is too close for standard horizontal crossover piping. In order to alleviate pipe stress, KRGT could either increase the spacing to 40 feet or create additional bends needed to allow for vertical legs. Under the vertical leg option crossover piping would be installed to a depth of 12 feet, rather than the 3 to 4 feet required for horizontal piping. Going deeper into the ground requires additional workspace, which is severely limited due to the presence of the existing facilities, especially where blasting may be required due to rock.

A 40-foot spacing between Mainline valves alleviates the high-stress problems in the crossover piping without necessitating the need to install vertical legs of piping and installing the crossover piping 10 to 12 feet deep. Although the spacing between valves has increased, KRGT will not require additional temporary workspace or additional permanent right-of-way when spacing the valves at a 40-foot separation distance.

KRGT notes that no changes will be made to the separation distance between the Mainline valves at compressor stations because crossover piping is not installed at compressor stations.

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A1-12 The table has been revised.

A1-13 The table has been revised.

A1-14 The table has been revised.

A1-15 Section 2.2.2 has been revised to include this information.

A1-16 Page 2-20 Figure 2.2.2.4/Page 2-21 Figure 2.2.2.5 - Typical Section (Tortoise Fence)
The insets in the figures that specifically address the installation of tortoise fencing indicate a minimum excavation depth of 1 foot. Per the February 26, 2002 meeting with USFWS, KRGT anticipates the final Biological Opinion will reflect a requirement of 6-12 inches of excavation. KRGT recommends Figure 2.2.2.4 be revised to reflect a minimum 6-12" excavation.

A1-17 Page 2-25, Paragraph 4, Burial of Caliche

The fourth paragraph on Page 2-25 includes the following sentence:

"Caliche fragments would be buried in the trench to the top of the existing caliche (greater than 24 inches in depth) profile only or hauled off to an approved landfill."

This sentence implies that if the existing caliche profile is less than 24", KRGT is still limited to burial only 24" and deeper. KRGT believes that caliche burial should be allowed to match the existing soil profile. KRGT requests that the parenthetical statement "greater than 24 inches in depth" be removed.

A1-18 Page 2-26, Paragraph 3, Hydrostatic Testing

KRGT has updated the list of proposed locations for hydrostatic test water withdrawals and discharges. Please refer to KRGT's comments to Pages 4-61 to 4-63, Table 4.3.2-4 and Table P-1 (Appendix P).

A1-19 Page 2-27, Paragraph 3, Use of Pigs

The third paragraph on Page 2-27 states the following:

"After completion of construction and hydrostatic testing, the pipeline would be cleaned and dried using internal inspection tools (pigs) that are propelled through the pipeline with compressed air."

There are multiple types of pigs. Some pigs are internal inspection tools (e.g., smart pigs used for determining corrosion and geometry pigs used for determining pipe damage) and some pigs are simply mechanical devices used for drying (squeegee pigs and desiccant pigs). The pipeline will be dried using desiccant pigs, not internal inspection tools. KRGT suggests the words "internal inspection" be replaced with "mechanical."

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A1-16 Figures 2.2.2-4 and 2.2.2-5 have been revised. See also the response to comment FA5-39.

A1-17 The paragraph has been revised.

A1-18 Comment noted. See the response to comment A1-41.

A1-19 The paragraph has been revised.

A1-20 Page 2-35, Paragraph 2, Compressor Building Dimensions

KRGT notes compressor building sizes at the new compressor stations will be approximately:

Coyote Creek	-	52' W x 91.5' L x 26' Eave
Salt Lake	-	46' W x 160' L x 26' Eave
Dry Lake	-	46' W x 91.5' L x 26' Eave

KRGT requests that building dimension depicted in Figures 2.2.2-1 (Coyote Creek) and 2.2.2-2 (Salt Lake) on Pages 2-17 and 2-18, respectively be revised to reflect the current building dimensions for these two compressor stations. Figure 2.2.2-3 (Dry Lake) is correct and does not require revision.

Also, KRGT notes that access roads and parking areas will be paved with gravel or asphalt pavement.

A1-21 Page 3-16, Paragraph 4, Last Sentence, Red Rock Canyon NCA

The DEIS/EIR states that disturbance associated with the proposed route would occur in areas previously disturbed by construction of the existing KRGT pipeline. KRGT wishes to note that while the corridor is designed to fit within previously disturbed areas some ATWS will result in temporary disturbance outside the area impacted during original construction. These areas will be provided the same level of reclamation treatment described for Red Rock Canyon NCA. KRGT recommends the sentence be changed to read that KRGT will attempt to minimize disturbance to areas previously disturbed by construction of the existing pipeline. This is consistent with other statements regarding Red Rock Canyon NCA.

A1-22 Page 3-27, Table 3.3.6-1, Route Variations

Please see comments to Volume II, Appendix C, Table C-1 for six additional minor route variations that may affect this table.

A1-23 Page 4-14 and 4-15, Paragraph 2, Design Procedure for Fault Mitigation

The second paragraph does not describe the design procedure for fault mitigation correctly. As written, the paragraph indicates that the pipe stresses were calculated first and determined to be within acceptable limits for given seismic events. Afterwards, KRGT decided to incorporate additional measures to limit the stress. In actuality, the process was iterative. Design conditions were assumed (pipe-soil interface reactions, pipe wall thickness, trench width, fill material, etc) and the stresses calculated. The trench dimensions and backfill materials were altered until the stresses were within acceptable limits.

KRGT recommends the paragraph read "Pipe stresses at all seven of these fault crossings were modeled for the estimated earthquake magnitudes shown in table 4.1.4-2 (above). The analysis concludes that the expected pipe stress would be below that necessary to cause a rupture or pipe failure. Assumptions and mitigation measures incorporated into the final design include the following:"

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A1-20 The paragraph and figures have been revised to reflect the current building dimensions of the Coyote Creek and Salt Lake Compressor Stations.

A1-21 The paragraph has been revised.

A1-22 The additional minor route variations would not create additional new right-of-way that is not already identified in table 3.3.7-1 of the final EIS/EIR (table 3.3.6-1 of the draft EIS/EIR) (see the updated table C-1 in appendix C). Therefore, revisions to this table are not required.

A1-23 The paragraph has been revised.

A1-24 Page 4-17, Paragraph 3, Automatic Valve Installation, 5-Mile Mainline Valve Spacing at Fault Crossings in California

KRGT specifically objects to the recommendation to install automatic valves at 5-mile intervals as described on Page 4-17. Design of the KRGT pipeline system has more than adequately addressed the potential impact of fault crossing hazards on the pipeline facilities. KRGT disagrees that a departure from 49 CFR Part 192, Section 192.179 will provide additional public protection. KRGT reiterates that our plan to install heavy wall pipe, specially configured ditch plan and profiles, use select backfill, and automatic valves is more than adequate to ensure potential impacts would be less than significant.

In previous submittals to FERC, BLM and CSLC, KRGT has provided a very detailed independent study regarding valve spacing and public safety. This study was provided in KRGT's response to Question 3 of the November 20, 2001 Data Response and concluded "the risk to the public is independent of valve spacing. Valve placement on gas transmission lines should be determined by operational and maintenance needs and not population density." To KRGT's knowledge, Agency Staff have not provided alternate studies that demonstrate valve spacing achieves the stated purpose of providing maximum feasible protection of the public. Further, KRGT provided data that demonstrates the pipeline is located in remote unpopulated areas and has not been subject to pipeline failure in its 11-year history.

KRGT also wishes to comment on the justification that the spacing provides "maximum feasible protection" as defined in CEQA. KRGT has been unable to locate the definition of this term in the CEQA regulation. The word "Feasible" is defined in CEQA and states "capable of being accomplished in a successful manner within a reasonable time, taking into account economic, environmental, social and technological factors" (Public Resources Code 21061.1). However, Feasible mitigation only has context when "significant environmental impacts" associated with the project are identified. Thus mitigation only arises in the context of a significant environmental impact being identified (granted under CEQA impact on public health and safety is considered an environmental impact.)

One might conclude there could be a significant environmental impact due to the fault crossings absent KRGT's design criteria. However, KRGT has proposed significant mitigation and engineered the system to reduce the likelihood of rupture to the same general level as the rest of the existing pipeline system. This includes automated valves at the fault crossings in question in California. KRGT contends that the potential impact of pipeline failure would be less than significant without the added recommendation by Agency Staffs' 5-mile intervals for valve spacing at the fault crossings.

As stated on Page 4-17, the DEIS/EIR finds that despite the best available engineering standards, the possibility of pipeline failure cannot be fully eliminated. Further, the DEIS/EIR references an American Society of Mechanical Engineers draft document that finds the impact radius for a 36-inch pipeline is 860 feet, and a 42-inch pipeline is 1,000 feet. KRGT assumes the intent of this recommendation is to address impacts that would occur within the impact radius in the event of failure due to a seismic event. However, KRGT has previously demonstrated that valve spacing has

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A1-24 Based on the findings of the Geohazard Assessment conducted in California by KRGT at the request of the CSLC since publication of the draft EIS/EIR, the Agency Staffs have determined that KRGT's design criteria for fault crossings as described in this EIS/EIR would adequately minimize the potential impacts associated with fault crossings, in part due to low population density (DOT Class 1 locations) at the majority of fault crossings. As a result, the Agency Staffs' recommendation for additional isolation valves at fault crossings in California has been removed (see revised section 4.1.4.1).

A1-24 (cont'd)

no bearing on damage due to a rupture if the rupture immediately ignites. Therefore, KRGT must infer Agency Staff intends to address a leak rather than rupture and ignition (catastrophic failure).

If a rupture does not immediately ignite, while the natural gas is escaping there is an opportunity for ignition to occur until the valves close and the section of pipe is blown down. Closer valve spacing would allow the pipeline to reduce pressure to atmospheric levels quicker than DOT mandated valve spacing due to less volume of gas contained in the valve section. The only environmental impact (safety) that can be construed to be mitigated by closer valve spacing is the lessening of the opportunity for the escaping gas to ignite if the rupture does not immediately trigger ignition.

In order to illustrate the impact closer valve spacing has on blow down times, KRGT has calculated blow down times for some representative scenarios in the table included below with this comment. Blow down times due to a rupture are a function of many variables, the most significant is pipe diameter, size of the hole created in the pipe by the rupture, valve spacing, use of automated or manual valves, and the initial pressure in the pipeline at the time of rupture. A full rupture and a rupture half the diameter of the pipeline are used as examples.

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A1-24
(cont'd)

Blow Down Times

Pipe Diameter	Rupture Size open to atmosphere	Valve Spacing	Blow Down Time (g)	Initial Pressure
36"	Entire Pipe	15.4 miles (a)	17.7 minutes	1200 (b)
36"	Entire Pipe	15.4 miles (a)	17.2 minutes	989 (c)
36"	18"	15.4 miles (a)	37.4 minutes	1200 (b)
36"	18"	15.4 miles (a)	35.7 minutes	989 (c)
36"	Entire Pipe	5 miles (d)	12.5 minutes	1200 (b)
36"	Entire Pipe	5 miles (d)	12.4 minutes	989 (c)
36"	18"	5 miles (d)	19 minutes	1200 (b)
36"	18"	5 miles (d)	18.4 minutes	989 (c)
42"	Entire Pipe	16.3 miles (e)	17.9 minutes	1200 (b)
42"	Entire Pipe	16.3 miles (e)	17.4 minutes	965 (f)
42"	21"	16.3 miles (e)	40 minutes	1200 (b)
42"	21"	16.3 miles (e)	37.9 minutes	965 (f)
42"	Entire Pipe	5 miles (d)	12.4 minutes	1200 (b)
42"	Entire Pipe	5 miles (d)	12.3 minutes	965 (f)
42"	21"	5 miles (d)	19.2 minutes	1200 (b)
42"	21"	5 miles (d)	18.6 minutes	965 (f)

a. Automated Valve Spacing as proposed by KRGT in the Calico Faults valve section
b. KRGT Maximum Allowable Operating Pressure (MAOP)
c. Expected typical operating pressure at the Calico Faults
d. Automated Valve Spacing proposed by Agency Staffs in all fault crossing sections
e. Automated Valve Spacing as proposed by KRGT in the Lenwood Fault valve section
f. Expected typical operating pressure at the Lenwood Fault
g. Includes 10 minutes for automated valves to react and close (all gas escapes through ruptured area; if company personnel are present, blow off valves located at Mainline valves would be manually opened to decrease blow down time)

As noted in the table, with a full line break at normal operating pressure on the 36" pipeline at the Calico fault complex, the 5-mile valve spacing would result in a reduction in blow down time of 4.8 minutes. With a full line break at normal operating pressure on the 42" pipeline at the Lenwood fault, the 5-mile valve spacing would result in a reduction in blow down time of 5.1 minutes. KRGT contends that a reduction in blow down time of approximately 5 minutes does not justify the 5-mile valve spacing as recommended in the DEIS/EIR.

The 5-mile spacing interval recommended by Agency Staff would result in additional environmental impact during both construction and operation in comparison to KRGT's proposal for valve spacing and location. This is described below.

The three Calico faults (Calico fault complex) are all located within a one-mile segment of the pipeline between MLV 666 and the Daggett Interconnect with the Mojave Pipeline. This is a Class 1 area. KRGT's proposal includes installing automated valves at MPs 666.5 and 681.9. These new automated valves will be co-located with existing automated valves and therefore, power, communications and access are already available. Under KRGT's proposal automated valves would be installed on both sides of the Calico fault complex, but at a 15.4-mile interval (which is closer than the DOT required spacing of 20 miles) and would not require installation of additional utilities or access roads.

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A1-24 (cont'd)

Under the Agency Staff recommendation, KRGT would be required to install two additional valves. These valves would not be co-located with an existing valve and therefore, would require installation of power, communication and access roads. The Lenwood Fault crossing is located on the Common system 42" pipeline at approximately MP 13.0. KRGT's proposal includes installation of automated valves on both sides of the Lenwood fault at MPs 0.0 and 16.3. These new automated valves would be co-located with existing automated valves and therefore, power, communications and access are already available. Under KRGT's proposal automated valves would be installed on both sides of the Lenwood fault, but at a 16.3-mile interval and would not require installation of additional utilities or access roads. Under the Agency Staff recommendation, KRGT would be required to install one additional valve for the Lenwood Fault. Since the valve at MP 16.3 downstream of the Lenwood Fault crossing is within 5 miles of the fault, only one additional valve would be required upstream of the fault. The valve would not be co-located with an existing valve and therefore, would require installation of power, communication and access roads.

Increased environmental and economic impact will be incurred under the Agency Staff recommendation due to the installation of three incremental Mainline valves that would not be co-located with existing valves and require new access roads and power lines to service the new facilities. Further, the incremental cost to the project is significant. The following table depicts the increased cost and environmental disturbance required for Agency Staffs' proposal:

Incremental Valve Required Due to 5 Mile Spacing	Incremental Disturbance (a)	Incremental Cost (b)
Upstream Calico fault complex	0.75	$360,000
Downstream Calico fault complex	0.75	$360,000
Upstream Lenwood fault	0.2	$480,000
Total	**1.70 acres**	**$1,200,000**

(a) In acres; permanent disturbance due to aboveground valve, access road, power line
(b) Includes material and construction for valves, roads, power line, desert tortoise habitat compensation

In summary, KRGT has designed the proposed pipeline under the direction of a California certified engineering geologist and professional engineer for the express purpose of physically mitigating the potential for failure due to geologic hazards. The mitigation developed more than adequately mitigates the potential impact to less than significant. This is evidenced by 11 years of operational integrity on the existing Mainline.

As noted in Table 4.1.4-3 there are no residences in proximity to the impact radius of 860 feet and 1,000 feet, respectively. The nearest residence is greater than 1,350 feet (on the 36-inch line, 2,500 feet on the 42-inch) and the closest town is approximately 0.5-mile from any fault crossing. Therefore, KRGT contends that fault areas are remote and unpopulated. Further, pipe failure has not been associated with the existing Mainline in its 11 year existence. The DEIS/EIR should then find that even in the unlikely event of a pipe failure at these remote locations, the pipeline would not present a significant threat to public safety.

Implementation of the Agency Staff recommendation will require the conversion of an additional 1.7 acres of land to natural gas transmission and cost the project an

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A1-24 (cont'd) additional estimated 1.2 million dollars. The additional environmental impact and cost will have a net benefit of increasing the blow down time by 4.8 and 5.1 minutes, respectively. No other advantage would be gained by implementation of 5-mile interval valve spacing.

Considering the unlikely event of an earthquake at these faults, the remote nature of each crossing, and KRGT's extensive design mitigation, KRGT contends that the recommendation proposed by Agency Staff has no bearing on increased protection of the public.

Further, in an emergency situation, it is very beneficial to have the new Mainline valves co-located with the valves on the existing pipeline. Personnel are immediately dispatched to the valves in an emergency situation to initiate any necessary actions such as blow down, etc. If the valves are not co-located, it may take longer to dispatch personnel from remote areas to man all of the valves. KRGT respectfully requests that in the FEIS/EIR, Agency Staff withdraw the requirement to install valves at 5-mile intervals.

KRGT also notes that footnote "d" in Table 4.1.4-3 on Page 4-16 is applicable to all of the Mainline valves in the Calico Fault complex and Lenwood Fault since KRGT's original proposal anticipated to automate these valves.

A1-25 Page 4-21, Paragraph 4, Soil Liquefaction in Salt Lake Valley

Paragraph 4 states: "To mitigate the potential risk to the pipeline from soil liquefaction in susceptible areas of the Salt Lake Valley between mileposts (MPs) 124.5 and 156.0 and susceptible areas between MPs 220.0 and 236.0, KRGT would install heavier-walled pipe and use sand backfill. Implementation of this measure would reduce the potential for liquefaction-induced ground failure in these areas to less than significant levels." These statements are consistent with KRGT's response to Question 44 of the FERC's August 15, 2001 *Information Request,* which included a table of mitigation measures. Sand backfill with heavy wall pipe was identified for these two segments as had been recommended in the SHB geotechnical reports (1991) for the design of the original KRGT Mainline for the Salt Lake Valley and Sevier River.

In continued engineering study and consultation with KRGT's geologic specialist, KRGT has reviewed the soil liquefaction design and as-built records from the original pipeline construction. KRGT confirmed that soil shear tests were conducted by AMEC utilizing samples of the same epoxy-coated steel and native soils. The values for the coefficients of friction and adhesion properties were found to be low enough to permit the use of the native silty sands and sandy silts which predominate in the area, instead of importing sand backfill. Therefore, the import of large volumes of backfill is unnecessary to mitigate potential impacts due to soil liquefaction and this was not done for the existing Mainline. Therefore, KRGT does not propose to import sandy backfill for the new loop line.

KRGT notes that importing sand to backfill approximately 45.5 miles of pipeline and disposal of large volumes of native soil displaced during excavation would be cost prohibitive given it is not necessary to mitigate the impact. KRGT has also now similarly concluded that use of heavier wall pipe, except for the West Valley Fault crossing, other locations in accordance with DOT Class 2 and 3 location areas on the

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A1-25 The paragraph has been deleted.

A1-25 (cont'd) Salt Lake Loop (Table 4.12.1-2), and for the Sevier River crossing, is not necessary to provide for additional mitigation for potential soil liquefaction.

Therefore KRGT recommends that paragraph 4 on Page 4-21 be deleted in the FEIS/EIR.

A1-26 Page 4-23, Paragraph 3, Ditch Plug Spacing

The third paragraph states that KRGT's erosion control and restoration practices would include "installation of ditch plugs (trench breakers) at vertical intervals of 100 feet or less for slope gradients of 20 percent or more to prevent the flow of water along the backfill surrounding the pipeline and to reduce the potential for soil movement along the trench." This statement is repeated in Table 5.1-1 (Mitigation Number KRGT 9).

As stated in Response 44 dated August 15, 2001 KRGT notes this spacing only applies to MP 45.4 on the Muddy Creek Loop and MPs 65.0 and 73.0 on the Coyote Creek 1 Loop previously identified as potential landslide areas. Otherwise, KRGT will install slope breakers per KRGT's UECRM Plan or WWCM Procedures (as is stated in the last paragraph of Page 4-22 and the first paragraph of Page 4-23).

A1-27 Pages 4-27, 4-28 and 4-29, Section 4.1.5.1 and Table 4.1.5-1, and Appendix K, Paleontological Resource Mitigation Plan

KRGT has refined its Paleontological Resource Mitigation Plan based on additional agency consultation and Milepost adjustments to accommodate route deviations submitted with these comments. KRGT requests Table 4.1.5-1 be replaced with Table 1 from the revised Paleontological Resource Mitigation Plan. KRGT also requests the revised paleontological plan replace the version currently presented in Volume II, Appendix K.

A1-28 Page 4-38, Paragraph 2, Topsoil Segregation

The DEIS/EIR contains the statement that it is not known whether KRGT has consulted with the private landowners to give them the opportunity to request topsoil segregation, and proposes the condition that:

- **KRGT shall segregate topsoil (using the full right-of-way method or trench plus spoilside method) in all locations where topsoil is present, unless otherwise requested by the landowner.**

KRGT believes the intent of this condition is to assure landowners are aware of their right to request topsoil segregation. KRGT has already committed to topsoil segregation on BLM and FS lands, as well as some private lands. However, KRGT strongly objects to this recommendation being a condition to a Certificate issued by the Commission to KRGT for private and other lands based on the following considerations:

- KRGT has agreed to follow Section V.B of FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan) as incorporated into the UECRM Plan included as Appendix E of the DEIS/EIR as pertains to topsoil segregation. Section

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A1-26 Section 4.1.4.2 has been revised to clarify the locations and spacing of trench breakers.

A1-27 Table 4.1.5-1 has been revised and the revised Paleontological Resource Mitigation Plan has been included as appendix K based on supplemental information filed by KRGT subsequent to these comments on the draft EIS/EIR.

A1-28 KRGT's assumption is correct. The intent of the Agency Staffs' recommendation was to ensure that landowners are aware of their right to request that topsoil segregation be conducted on their property. KRGT has subsequently filed information that it sent a letter to private landowners on April 15, 2002 informing them of their right to request topsoil segregation and committed to complying with each landowner's request. The Agency Staffs have determined that the topsoil provision in KRGT's UECRM Plan would be implemented appropriately. Section 4.2.3.1 has been revised and the recommendation has been deleted.

A1-28 (cont'd)

V.B of the UECRM Plan provides for topsoil segregation on annually cultivated or rotated agricultural land, residential land, non-saturated wetlands (per Section VI.C.2(g) of the WWCM Procedures), and other areas requested by the landowner. These are standard procedures that have been applied to virtually all projects since the FERC Plan has been in use. KRGT does not feel there is regulatory justifications to hold KRGT to a standard higher than other interstate natural gas companies.

- This condition to be appears based in part on the concern that landowners are unaware of their right to request topsoil segregation. However, KRGT notes that during easement negotiations reference was made to the original language in the easement on lands where topsoil separation was applicable and the option to use the same method or a new method was discussed. To date, KRGT has acquired 499 of the 670 total private easements, or about 75% percent. Of this total, 23 landowners, or about 5% of the private easements have specified topsoil segregation as a condition of the easement. This suggests landowners are informed of their right but most do not elect to require topsoil segregation.

- There are approximately 261 miles of privately owned upland, non-agricultural or residential area on the loops where topsoiling had not been proposed unless it were requested by the landowner. To indiscriminately segregate topsoil along this full distance unless the landowner were to request otherwise would require about 475 acres of additional temporary right-of-way and disturbance based on requiring at a minimum an additional 15 feet of work space for this distance.

- Construction costs for this additional topsoiling would be approximately $4.8 million, plus the costs to acquire additional temporary right-of-way or damages, and inconvenience to the landowners in having to unnecessarily amend easement agreements.

- As evidenced by the existing right-of-way, revegetation success patterns cannot be associated with segments where topsoil was not segregated when compared to segments where topsoil was segregated during original construction. Therefore, KRGT contends that topsoil segregation does not necessarily improve revegetation success.

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A1-28 (cont'd)

- Since the proposed looping is generally located 25 feet from the existing pipeline, topsoil segregation may mean in many circumstances KRGT would be segregating soil that was mixed during the original construction as opposed to natural soil horizons since topsoil segregation was not required over much of the original construction. Therefore, KRGT believes there would be little net environmental benefit.

Because of these considerations, KRGT requests this recommended condition be deleted and topsoil requirements reflect Section V.5 of FERC's Plan. KRGT commits to continue advising landowners of their right to request topsoil segregation and that KRGT will honor the landowners' request (for example see Wetland Variance for W11038).

A1-29 Page 4-48, Paragraph 2, Table 4.3.2-2, Perennial and Selected Waterbodies

The DEIS/EIR Table 4.3.2-2 lists the 32 perennial waterbodies and the 9 intermittent waterbodies likely to support fisheries crossed by the pipeline facilities. Per the table footnote "a" and inclusion of intermittent waterbodies Hiway Spring and Meadow Valley Wash, KRGT understands that Table 4.3.2-2 also includes those intermittent waterbodies with specified agency concerns, beneficial uses, or impaired water quality.

A1-30 Pages 4-49 and 4-50, Table 4.3.2-2, Perennial and Selected Waterbodies

As noted in Table 4.3.2-2, KRGT has two proposed crossing methods for waterbodies supporting cold water fisheries or game fish spawning areas. If there is little to no flow at the time of crossing KRGT proposes to utilize the open cut method. However, if flowing, KRGT will use a dry crossing method to further reduce potential impacts to fisheries that may be present in the vicinity of the crossing. Dry crossing methods would include flume or dam and pump. KRGT has continued to consult with appropriate resource agencies to develop crossing methodologies with adequate protective measures for sensitive waterbodies traversed and has proposed the use of flume or dam and pump crossings at the majority of the sensitive crossings.

A1-31 Page 4-50, Table 4.3.2-2, Fishery Classifications, Chalk Creek (MP 264.8) and California Hollow (MP 396.8)

Table 4.3.2-2 states that the Chalk Creek crossed in Millard County at MP 264.8 supports cold water fisheries. While the Chalk Creek crossed at MP 66.8 in Summit County is a Utah Class 3A waterbody protected for cold water species of game fish and other cold water aquatic life, the Chalk Creek crossed at MP 264.8 does not support cold water fisheries. As clarified in the KRGT's *Supplemental Information to Question 11 of the FERC's August 15, 2001 Information Request* submitted to the FERC on October 10, 2001, the southern Chalk Creek is not associated with the Chalk Creek in northern Utah. The Chalk Creek in northern Utah is part of the Weber drainage basin, and the Chalk Creek crossed at MP 264.8 is part of the Escalante Desert – Sevier Lake drainage basin. According to the Utah Administrative Code, Rule R317-13.6, the Sevier River and the stretch of Chalk Creek in Millard County from the U.S. National Forest boundary to its headwaters are protected as Class 2B, 3A, and 4 waters. However, the pipeline crosses Chalk Creek at MP 264.8 beyond the boundary

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A1-29 The paragraph has been revised to clarify that table 4.3.2-2 includes those intermittent waterbodies with specified agency concerns, beneficial uses, or impaired water quality as well as those that support fisheries.

A1-30 Table 4.3.2-2 has been revised to incorporate the latest crossing method proposed by KRGT.

A1-31 Both Chalk Creek and California Hollow have been removed from table 4.3.2-2 and the number of selected intermittent waterbodies crossed by the pipeline facilities has been changed. California Hollow has also been removed from table 4.6.2-1.

A1-31 (cont'd) of the National Forest. While the Utah Administrative Code lists the Sevier River and its tributaries from Sevier Lake to Gunnison Bend Reservoir to U.S. National Forest boundary as 2B, 3C, 4 waters, Chalk Creek is not listed as a protected tributary. Furthermore, based on consultation with the Utah Division of Water Rights – Southern Division, there are no fisheries of concern at the Chalk Creek crossing at MP 264.8 (Ottenbacher July 2001).

Table 4.3.2-2 identifies that California Hollow crossed at MP 396.8 supports non-game fisheries. However, according to the Utah Administrative Code, Rule R317-2, California Hollow is not listed as supporting non-game fisheries or any other beneficial uses. California Hollow is an intermittent tributary of Kane Spring Draw, an intermittent tributary of the Santa Clara River (reach from Gunlock Reservoir to headwaters).

While Utah classifies the Santa Clara River and its tributaries from Gunlock Reservoir to headwaters as Class 1C, 2B, 3A, and 4 waters (R317-2-13, 13.2 Lower Colorado River Basin, a. Virgin River Drainage), California Hollow is not a direct tributary to the Santa Clara River. Based on consultation with the Utah Division of Water Rights – Southern Division, fisheries of special concern (i.e., the Virgin River spinedace) occur in the Moody Wash and Magotsu Creek, both direct tributaries of the Santa Clara River. However, California Hollow was not identified as supporting cold water fisheries or species of concern (Ottenbacher July 2001). Because Kane Spring Draw is not listed as supporting fisheries of special concern and is an intermittent tributary of the Santa Clara River, it is unlikely that its small, intermittent tributaries such as the California Hollow would support non-game fisheries. In addition, the Utah Administrative Code does not protect Santa Clara River tributaries for use as non-game fisheries.

KRGT recommends removing Chalk Creek (MP 264.8) and California Hollow from Table 4.3.2-2 unless there are other identified agency concerns, beneficial uses, and/or impaired water quality from information or other agency comments that had not been available to KRGT. If these waterbodies are removed from the table, KRGT recommends revising the number of selected intermittent waterbodies crossed by the pipeline from 9 to 7; this also affects references made on Page 4-48, Paragraph 2.

A1-32 Page 4-50, Table 4.3.2-2, Footnote "f", Opal Compressor (Meter) Station

Separately, the footnote "f" references the Opal Compressor Station. This should be changed to "Opal Meter Station." There is no compressor station on the Opal Loop.

A1-33 Page 4-56, Paragraph 3, Stone Riprap or Gabions

KRGT notes the reference to utilizing stone riprap or gabions where normal channel velocities exceed 3 fps is consistent with KRGT's Response to Question 48 of the FERC's November 20, 2001 *Information Request.* However, KRGT wishes to clarify that it will give preference to utilizing native materials, contouring, seeding and planting to restore natural stream banks. The use of riprap or gabions will be minimized in accordance with Part V.C (5) of the Commission's *Wetland and Waterbody Construction and Mitigation (WWCM) Procedures,* and as also represented in KRGT's requests for Nationwide Permit 12 authorizations from the COE Omaha, Sacramento, and Los Angeles districts. KRGT requests the DEIS/EIR reflect KRGT's commitment to restoring stream banks to pre-construction conditions using native materials.

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A1-32 The footnote in table 4.3.2-2 has been revised.

A1-33 The paragraph has been revised.

A1-33 (cont'd) | Riprap and gabion would only be used where erosion cannot be controlled with native materials, or erosion control matting combined with revegetation.

A1-34 | Page 4-56, Section 4.3.2.5, Paragraph 1, Major Waterbodies

The DEIS/EIR indicates that KRGT would minimize impacts to the Surplus Canal and Sevier River by completing the in-stream work at these waterbodies within 48 hours in accordance with its WWCM Procedures. KRGT confirms that it will cross waterbodies in accordance with the WWCM Procedures. As described in the WWCM Procedures for *intermediate* waterbodies, KRGT will attempt to complete trenching and backfill work within the waterbody (not including blasting) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible. However, the Surplus Canal and Sevier River are both greater than 100 feet across (water's edge to water's edge) and are classified as major waterbodies by the FERC. Major waterbody crossings will be constructed in accordance with the measures contained in the WWCM Procedures and the site-specific plans submitted for these crossings. The 48-hour crossing criterion applies to intermediate-sized crossings as identified in Part V.B.8. and not major crossings addressed in Part V.B.9 of the WWCM Procedures where a specific time limitation is not specified. In-stream construction disturbance will need to extend beyond a 48-hour period for major waterbody crossings. KRGT will nonetheless limit the period of in-stream disturbance at the Surplus Canal and Sevier River to the minimum necessary to safely complete the crossing, but requests the reference to a 48-hour period be deleted from this paragraph.

A1-35 | Page 4-56, Section 4.3.2.5, Paragraph 3, Sevier River

KRGT has requested a variance from the 50-foot ATWS setback at this crossing due to the presence of wetlands that limit available working area. Additional justification for this request is provided below.

The presence of wetlands on the south bank of the Sevier River limits the area available for use as temporary workspace. It was necessary to reduce the workspace needed in this area to minimize impact to these wetlands (W12003). The limited area (length) that is available for ATWS is squeezed-in between the south high-bank of the river and the wetland. This is particularly acute for the southwest quadrant, where the ATWS can only extend back around 100 feet or so from the south high bank, whereas on the northwest quadrant, where it is unconstrained, the ATWS length is 280 ft. A 50-foot setback would reduce the already limited length on the south bank by another 40 feet, rendering it virtually useless.

The restricted workspace on the south bank places greater significance on the location and size of workspace located on the north bank. It will be necessary to place the majority of excavated material within stockpile areas located on the north bank. A 50-foot setback distance on this bank would place spoil stockpile areas beyond the reach capability of a single mechanical excavator. Additional equipment would be required to relay the spoil material to a suitable stockpile area, and would increase the construction duration and overall area impacted by construction.

The Sevier River crossing is located in a grass/pasture land area and will not require the removal of any woody vegetation. A variance has been requested to Section V.B.2 of FERC's Wetland and Waterbody Construction and Mitigation Procedures (item 2 b,

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A1-34 The paragraph has been revised.

A1-35 The requested approval at the Sevier River crossing has been incorporated into sections 4.3.2.5 and 4.3.2.6.

A1-35 (cont'd) Page 2C-5) proposing a 10-foot setback within non-wooded vegetation areas as opposed to the standard 50-foot setback.

A1-36 Page 4-57, Section 4.3.2.5, Paragraph 6, Bear and Weber River Crossing HDD Plans

KRGT has revised the site-specific plans for the Bear River and Weber River crossings to depict all workspace requirements for the drilling operations, including areas for pipe fabrication and pullbacks. These revised drawings are included with KRGT's comments to the DEIS/EIR.

A1-37 Page 4-58, Paragraph 4, Coldwater Fisheries

The DEIS/EIR states that the Chalk Creek crossed at MP 264.8 on the Elberta Loop has an agency-specified construction window. As described in the comment to Page 4-50, Table 4.3.2-2, Fishery Classifications, the Chalk Creek crossed in southern Utah does not support fisheries. Based on contact with the Utah Fish and Wildlife Service and the Utah Division of Water Rights – Southern Region, there are no agency-specified construction windows for this crossing. Refer to the *Supplemental Information to Question 11 of the FERC's August 15, 2001 Information Request* submitted to the FERC on October 10, 2001 for additional documentation.

A1-38 Page 4-59, Table 4.3.2.7, Paragraph 1, Scouring

KRGT notes that the crossing of Yellow Creek, based on the site-specific plan submitted, has been permitted under the Omaha District, COE's Nationwide Permit 12 authorization issued to KRGT on October 15, 2001.

A1-39 Page 4-60, Section 4.3.2.8, Muddy River Crossing

The text indicates that KRGT proposes to open cut the Muddy River. During the course of communications with the USFWS, concern was raised for the in-stream populations of the Virgin River (Moapa) chub, particularly in light of potential sediment contamination issues. To further minimize potential in-stream impacts to the chub, KRGT has agreed to cross the river using the dry flume construction technique, and install the crossing in an agency-accepted timing window prior to April 1. Therefore, the DEIS should be modified to reflect the revised crossing methodology and the window changed from February 1 to April 1.

In addition, the DEIS/EIR states that KRGT will complete the crossing in 48 hours or less. KRGT requests the language be changed to be consistent with FERC's Procedures and KRGT's WWCM Procedures which state that KRGT will attempt to complete trench and backfill work within the waterbody (not including any required blasting) within 48 hours, unless site-specific conditions make completion within 48 hours infeasible.

A1-40 Page 4-61, Paragraph 2, Bingham Creek

KRGT has provided documentation in previous submittals that demonstrate Bingham Creek is no longer contaminated. However, in the event KRGT cannot obtain verification from UDEQ the creek will be bored in compliance with this mitigation measure. See also under Page 5-8, Mitigation Measure 20, Bingham Creek.

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A1-36 KRGT's site-specific crossing plans do not depict wetlands. A review of the alignment sheets for these areas indicates that the workspaces for the pipe fabrication and stringout may be in wetlands. Section 4.3.2.6 has been revised to include a recommendation that KRGT file revised site-specific HDD crossing plans for the Bear and Weber Rivers that show all workspace requirements for the drilling operations and the wetlands that would be affected by each workspace. If surveys indicate no wetlands are present, the recommendation requires KRGT to file the survey documentation that supports the finding.

A1-37 The paragraph has been revised.

A1-38 Although the Agency Staffs acknowledge that the proposed crossing location of Yellow Creek falls within the COE, Omaha District, the Wyoming Regulatory Office located in Cheyenne was the issuing office of the authorization to complete the Yellow Creek crossing. Section 4.3.2.8 (section 4.3.2.7 of the draft EIS/EIR) has been revised to include the actual office name.

A1-39 Section 4.3.2.9 (section 4.3.2.8 of the draft EIS/EIR) has been revised.

A1-40 Section 4.3.2.9 (section 4.3.2.8 of the draft EIS/EIR) has been revised to include KRGT's commitment to use the bore method to cross Bingham Creek unless KRGT provides documentation from the UDEQ that elevated levels of metals no longer exist at the Bingham Creek crossing location.

A1-41 | Pages 4-61 to 4-63, (Section 4.3.2.9), Table 4.3.2-4, and Table P-1 (Appendix P), Hydrostatic Test Water Source and Discharge Locations

KRGT has conducted additional evaluations since submitting its preliminary hydrostatic test water withdrawal and discharge locations in Tables 2.2-3 and 2.2-4 of Resource Report 2 of the August 1 Filing. Changes in source information include adding Hams Fork, North Las Vegas Water District and Mojave Water Agency as potential sources. A source for The Goodsprings Loop is California is still under review.

Discharge information was revised to reflect refinement in test section lengths, and the ability to cascade water between test segments while still allowing discharge within the same basin from which the water was withdrawn.

Revised tables depicting hydrostatic test water withdrawal and discharge locations are included with KRGT's comments to assist Agency Staff in updating Table 4.3.2-4 and replacing Appendix P. These revisions otherwise would not materially change the analysis and conclusions presented in Section 4.3.2.9.

A1-42 | Page 4-62, Table 4.3.2-4, Hydrostatic Test Water Sources

KRGT has revised the list of hydrostatic test water sources in an effort to locate both the withdrawal and discharge locations within the same basin. KRGT requests Table 4.3.2-4 be revised to reflect updated source location and further requests authorization to use the sites as currently proposed, and for which permits or approvals are being requested from the respective states.

A1-43 | Page 4-66, Paragraph 3, Pipeline Facilities

The DEIS/EIR notes the project would cross 63 individual wetlands for a total distance of about 3.7 miles. While the total distance is accurate based on the data submitted by KRGT, the project actually crosses 66 individual wetlands. Table 4.4.1-1 of the DEIS/EIR does not include three wetlands within the proposed right-of-way on the Opal Loop in Lincoln County, Wyoming (W12026, W12027, and W12028), which are anticipated to be bored with the crossing of the Union Pacific railroad and would not be disturbed.

In addition to these comments on the distances crossed or numbers of wetlands identified in Table 4.4.1-1, KRGT recently determined that the Coyote Creek Loop2 crosses portions of six wetlands that were inadvertently omitted from preliminary construction alignment sheets and wetland tables in previous submittals. These wetlands are located in Salt Lake County between MP 127.34 and 131.12 near the Surplus Canal. The wetlands are characteristic of the other emergent wetlands identified on the Coyote Creek 2 Loop as characterized in Section 4.4.1 of the DEIS/EIR, with similar conclusions on impacts and identification of the mitigation measures that would be implemented. These individual wetlands that should have been included with KRGT's Table 2.2-1 are identified below:

Inclusion of these wetlands results in an additional disturbance of 17.23 acres of emergent wetlands during construction, of which 10.26 acres would be in the

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A1-41 Section 4.3.2.10 (section 4.3.2.9 of the draft EIS/EIR) and table P-1 in appendix P have been revised to include this information and additional information KRGT filed regarding the source of hydrostatic test water for the Goodsprings Loop subsequent to these comments on the draft EIS/EIR.

A1-42 Table 4.2.3-4 has been revised to reflect updated source data provided in these comments on the draft EIS/EIR and the additional information KRGT subsequently filed regarding the source of hydrostatic test water for the Goodsprings Loop. As stated in section 4.3.2.10 (section 4.3.2.9 of the draft EIS/EIR), hydrostatic test water withdrawals and discharges must be conducted in accordance with National Pollutant Discharge Elimination System permits and other requirements. Only after the applicable permits are obtained may KRGT withdraw water from the proposed sources or discharge water to the proposed locations.

A1-43 Section 4.4.1 and table 4.4.1-1 have been revised to include these wetlands and the additional wetlands identified in supplemental information filed by KRGT subsequent to these comments on the draft EIS/EIR.

A1-43 (cont'd)

operations right-of-way, bringing the total construction disturbance for the project to 50.87 acres and the total acreage within the operations right-of-way to 30.05 acres. The total acreage is slightly over-estimated, however, based on the reduced number of width variances requested for wetland crossings, as described in the comments below to Page 4-71, Table 4.4.4-1.

KRGT will further map these wetlands on the preliminary alignment sheets (Drawing Number F-AS-60.1, sheets 32, 33, and 34), submit these alignment sheets, and address any additional variance requests for additional temporary right-of-way requirements beyond the standard 75 feet in the WWCM Procedures to the FERC. These updates will be provided to the FERC by the close of the DEIS/EIR comment period.

KRGT recommends these additional wetlands between MP 127.34 and 131.12 be included in Table 4.4.1-1 and the Agency Staffs' analysis in Sections 4.4.1 (Utah) and 4.4.3 of the FEIS/EIR.

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Insert for Table 4.4.1-1, Additional Wetlands Crossed by the 2003 Kern River Expansion Project

Pipeline Loop	State	County	Wetland ID	NWI Code	Beginning MP	Ending MP	Length Traversed (miles)	Length Traversed (feet)	Acreage Impacted During Construction	Acreage Impacted by Operations ROW
COYOTE CREEK 2	UT	SALT LAKE	SL-45b	PEM	127.34	127.90	0.535	2824.80	4.97	3.28
COYOTE CREEK 2	UT	SALT LAKE	SL-45b	PEM	127.94	128.01	0.072	380.16	0.88	0.44
COYOTE CREEK 2	UT	SALT LAKE	SL-45b	PEM	128.05	128.16	0.114	601.92	1.05	0.69
COYOTE CREEK 2	UT	SALT LAKE	SL-45a	PEM	128.56	128.80	0.260	1320.00	2.30	1.52
COYOTE CREEK 2	UT	SALT LAKE	SL-44b	PEM	128.89	128.89	0.004	21.12	0.04	0.02
COYOTE CREEK 2	UT	SALT LAKE	SL-46a	PEM	128.90	129.21[1]	0.010	52.80	0.12	0.08
COYOTE CREEK 2	UT	SALT LAKE	SL-42	PEM	129.68	129.75	0.080	422.40	1.14	0.57
COYOTE CREEK 2	UT	SALT LAKE	SL-40b	PEM	129.83	129.92	0.045	237.60	0.83	0.27
COYOTE CREEK 2	UT	SALT LAKE	SL-39c	PEM	130.06	130.40	0.34	1795.20	3.90	2.12
COYOTE CREEK 2	UT	SALT LAKE	SL-39b	PEM	130.41	130.47	0.060	316.80	0.89	0.38
COYOTE CREEK 2	UT	SALT LAKE	SL-39a	PEM	130.58	130.65	0.071	374.88	0.61	0.43
COYOTE CREEK 2	UT	SALT LAKE	SL-37c	PEM	131.12	131.20	0.050	264.00	0.26	0.18
COYOTE CREEK 2	UT	SALT LAKE	SL-37d	PEM	131.20	131.21	0.022	116.16	0.22	0.14
COYOTE CREEK 2	UT	SALT LAKE	SL-37d	PEM	131.25	131.27	0.017	89.76	0.15	0.10
COYOTE CREEK 2	UT	SALT LAKE	SL-37c	PEM	131.28	131.29	0.010	52.80	0.09	0.06

[1] Note equation at MP 128.91 BK/MP 129.20 Ahead accounts for difference in linear distance.

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A1-44 Page 4-71, Table 4.4.4-1, Wetland Variance Requests

KRGT has revisited the requested wetland variances for the construction corridor and ATWS. KRGT has determined that a variance is needed for 13 crossings and has eliminated the variance request for 12 crossings. The remaining two were previously approved. In addition, KRGT will require a variance to locate ATWS within wetlands at three locations as described below. Additional justification for requested crossing and ATWS variances is provided below.

Opal Loop Wetlands W12030 – KRGT previously requested a 90-foot wide construction right-of-way through this wetland. However, upon further engineering study KRGT has determined that in addition to the 90-foot wide right-of-way, KRGT will need 10 feet of ATWS through the wetland.

The right-of-way from MP 0.70 to MP 1.39 is located in Hams Fork Creek floodplain. Subsurface soil consists primarily of alluvial rock, gravel, and sand, with subsurface water. The non-cohesive nature of this soil makes it very unstable and will complicate installation of the pipe. The pipe will require either concrete coating or concrete set-on weights through this area for buoyancy control. The ditch will require additional depth due to the buoyancy control measures, and due to the unstable soils, this will create a wider ditch to achieve pipe installation.

Difficulty in moving sections of concrete coated pipe will require additional equipment and create additional safety concerns. Having to make tie-in welds through this flood plain area will create additional challenges as the ditch line will be filled with water, which will have to be pumped out and discharged in order to install a separate section of pipe through this area. Due to the extreme amount of subsurface water throughout this floodplain, water removal from the ditch to achieve tie-in welds will be difficult and costly. Push pull techniques are not feasible due to proximity to Hams Fork Creek.

Muddy Creek Loop Wetland W11038 - This wetland/pasture land is located between side-sloping hills on the incoming as well as outgoing sides. Having to assemble the pipe section for the wetland on either side of the wetland would require considerable ATWS in these upland areas due to the amount of side-cut necessary to achieve right-of-way workspace. This would also apply for any topsoil storage area located outside the wetland. Difficulty in moving a 500-foot section of pipe from either of these upland areas will require additional equipment and create additional safety concerns.

Moving the topsoil from the wetland/pasture land to an upland location will create concerns for the landowner who has stipulated full right-of-way topsoil segregation as a condition of the easement agreement. This wetland is saturated and ditch excavation will result in a ditch filled with water when excavation occurs. Having to de-water this entire length of wetland ditch in order to complete tie-in welds would also create additional concerns. Therefore, KRGT requests a 90-foot construction right-of-way to make this crossing.

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A1-44 Section 4.4.4 has been revised to include these requests and the additional requests identified in supplemental information filed by KRGT subsequent to these comments on the draft EIS/EIR.

A1-44 (cont'd)

Muddy Creek Loop Wetland W11026 - The corridor table through this wetland calls for 60 feet of workspace on the spoil side and 60 feet of workspace on the working side for a total right-of-way width of 120 feet. The variance table should be changed as follows:

From MP 42.96 to MP 43.05, total right-of-way width should be 105 feet for a distance of 475 feet. From MP 43.05 to MP 43.09, a total distance of 200 feet, the right-of-way should have a total width of 105 feet and have 70 feet of ATWS to bore under Interstate 80. Therefore, KRGT requests a variance for the 105-foot wide right-of-way (reduced from 120) for wetland W11026 and 200' x 70' wide ATWS, located at MP 43.05 (W11026) to make the bore of Interstate 80.

This wetland is bordered by the I-80 bore on the south side and a side sloping hill on the north side (coming in side). Having to assemble pipe sections for the wetland and I-80 bore in this upland area would require considerable ATWS in this upland area due to the amount of side-cut necessary to achieve right-of-way work space. This would also apply for any topsoil storage area located outside the wetland. Difficulty in moving the wetland crossing and road bore sections of pipe from this upland area will require additional equipment and create additional safety concerns.

The I-80 bore cannot be effectively accomplished from the south side where no wetland is located, due to the sloping hill that begins immediately at the service road right-of-way. To attempt to bore I-80 from this side would require the grading/excavation and removal of hundreds of cubic yards of soils in order to grade down the hillside for a straight bore approach.

Muddy Creek Loop Wetlands W11029, W11030, W11030B, W11031, W11032, W 11033, W11034 and W11035 – These wetlands are located in the Bear River floodplain. The total length of this floodplain is approximately 8,450 feet. Of this distance, approximately 5,970 feet (71%) is located within wetland areas. Right-of-way through this entire distance is pastureland with standing water present as well as subsurface water through portions of the right-if-way due to the presence of irrigation canals. Due to the separated nature of the wetlands with minimal sections of upland located between the wetland areas, it would be difficult to assemble the wetland crossing sections in these short areas of upland. The last wetland (W11035) exceeds 4,000 feet in length and is bordered on the south by State Highway 150. There is no adjacent upland area long enough to assemble this wetland section.

Due to the saturated nature of this pasture/wetland, it is expected that widening of the ditch will occur in order to achieve required depth of cover over the pipe. Without adequate room to store/stockpile topsoil, maintaining segregation of this topsoil from sub-soils would be extremely difficult. Therefore, KRGT believes that a 90-foot wide construction right-of-way is warranted.

In addition, KRGT will need a variance to locate a 60' x 150' ATWS at MP 49.0 (W11035) in order to make the bore of State Highway 150. The bore of this highway and assembly of the highway crossing section must occur from this side as the South side of the highway crossing is rocky hillside with an irrigation ditch present.

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A1-44 (cont'd)

Salt Lake Loop Wetland W11002 – The right-of-way through this wetland is normally saturated and/or covered with standing water. Ponds located just west of the right-of-way create additional subsurface water potential and problem. Due to the nature of soils and amount of water present and expected, the ditch will require additional width to achieve required depth of cover. Additional spoils from ditch excavation would not allow room for topsoil excavation and segregation from sub-soils.

The north side approach to this wetland is bordered by a paved city street (South Street). Any attempt to assemble the wetland crossing section in this upland area would create additional workspace difficulties due to the required bore of this road and the ATWS already designated for this road bore crossing.
The southwest side/exit to this wetland is bordered by a RCRA (Resource Conservation Recovery Act) Cap over a previous landfill. This landfill cap borders the west edge of the right-of-way working side. No additional ATWS is available in this area for a distance in excess of 2,000 feet. Therefore, KRGT requests FERC authorize a 90-foot construction right-of-way through this wetland.

Elberta Loop Wetland W14005 - KRGT request a variance of105 feet consistent with the variance approved for W14006 since these wetlands present the same issues during construction.

A1-45

Page 4-73, Paragraph 2, Significance Criteria for Regeneration

The DEIS/EIR indicates adverse impacts on vegetation would be considered significant and would require additional mitigation, in areas where natural or enhanced regeneration could not restore the impacted vegetation to its pre-construction condition within 3 years. Given the climatic and edaphic conditions, and plant communities encountered in the Mojave Desert Region, KGRT does not believe that 3 years is sufficient for natural or enhanced regeneration to restore vegetation. This is supported by KRGT's review of available literature, consultation with desert restoration specialists and experience with similar types of project disturbances. In addition, the statement conflicts with information on natural desert regeneration as provided in Section 4.5.2.1, Page 4-78, paragraph 4, where it is indicated that regeneration of creosote and woodland in the desert may take 50 years or more.

KRGT has reviewed additional literature, consulted with specialists in desert restoration, and continued consultation with BLM Las Vegas and Barstow natural resource specialists. Recent qualitative and quantitative parameters have been developed to more realistically and objectively assess and determine revegetation success as identified in BLM Las Vegas District's *Draft Restoration Success Standards and Monitoring Plan* which supplements its *Draft Restoration Plan for Energy Projects in the Las Vegas Field Office (February 2001).* These criteria provide for a 6-year monitoring period with quantitative success criteria identified for the sixth year based on comparisons of cover, density and species richness in relation to undisturbed, representative reference plots. KRGT has incorporated these criteria into our revised Nevada and California Reclamation Plans and provided these Plans to BLM for additional review. KRGT expects to submit final plans to FERC and CSLC prior to the end of the comment period on the DEIS/EIR.

The revegetation success criteria KRGT proposes provide for achieving 60 percent or greater cover, density and species richness on sample plots within the restored right-

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A1-45 The 3-year time frame in the significance criteria is a guideline to determine whether an impact on vegetation would be significant without mitigation. Because vegetation in most of the project area would not return to its preconstruction condition within 3 years without mitigation, mitigation measures would be required.

A1-45 (cont'd) of-way compared to established undisturbed reference areas. The exception is that an 80 percent criterion is proposed for the Red Rock Canyon National Conservation Area and Spring Mountain National Recreation areas between MPs 552.0 and 558.3 of the Dry Lake 2 Loop. At these levels, restoration would be determined successful for the longer-term regeneration process barring any new disturbance beyond KRGT's control.

KRGT requests that the significance criteria presented on Paragraph 2 of Page 4–73 be revised or qualified to reflect a 6-year period for regeneration in the desert portions based on the above criteria.

A1-46 Page 4-80, Paragraph 1, Salvage of Perennial Shrubs

The text indicates that, as part of KRGT's third strategy to minimize and mitigate impacts on vegetation, salvage of perennial shrubs will be conducted. As described in KRGT's current revision of the Nevada Reclamation Plan, KRGT proposes to salvage perennial shrubs within the Red Rock Canyon National Conservation Area, Spring Mountain National Recreation Area (Humboldt-Toiyabe National Forest), and the Dry Lake Compressor Station. KRGT also notes that woody plant materials including willow cuttings will be utilized in the Dixie National Forest and other woody plant material will be propagated for use in revegetation of riparian areas in Wyoming and Utah as identified in the reclamation plans. KRGT will salvage and use shrubs or appropriate local commercial sources of shrubs for additional visual mitigation in portions of the Bear River Valley (MPs 46.9 to 50.3) and Scipio Pass (MPs 244.0 to 248.0) as indicated in the comments to Pages 4-197 and 4-205. These are the only locations where shrub salvage is proposed. KRGT requests the DEIS/EIR be clarified to reflect KRGT's proposal.

A1-47 Page 4-80, Paragraph 2 (1st bullet), Transplants

Please refer to the comments to Page 4-80, Paragraph 1 above.

A1-48 Page 4-81, Paragraph (3rd bullet), Salvage and Transplanting of Succulents

The text indicates that in desert areas, KRGT would salvage and transplant Joshua trees, yucca, cactus, and agave, as provided for in the reclamation plans. KRGT notes this procedure applies to salvaging and transplanting suitable individuals. This procedure may exclude some button cacti or agave less than 6 inches in height that may be too small to feasibly salvage and transplant. In addition, individual Joshua trees larger than 6 to 8 feet or cholla cactus greater than 3 feet in height may be too large to salvage and transplant. In the case of these larger Joshua trees, KRGT would utilize them as vertical mulch.

Applicant 1

A1-46 Section 4.5.2.1 has been revised.

A1-47 See the response to comment A1-46.

A1-48 Section 4.5.2.1 has been revised to reflect this clarification.

A1-49 Page 4-84, Paragraph 1, and Pages 4-85 and 4-86, Table 4.5.2 – 3, Utah Seed Mixes

KRGT has revised the Utah Reclamation Plan based on recent comments and meetings with BLM. The Plan has been modified to incorporate a seeding recommendation for the extreme southern portion of Utah within the Mojave Desert, including Desert Tortoise Critical Habitat Areas beginning at approximately MP 418.5 of the Veyo Loop. Seeded species and application rates were based on a seed mix for restoration of the Mojave Desert shrubland recommended by the BLM, Las Vegas Field Office (see attached table below). Seed would be acquired through commercial seed vendors utilizing local sources from this region of southern Utah and Nevada. Below is the planned seed mix which is recommended for incorporation into Table 4.5.2–3.

KRGT also has received additional comments from the BLM, Cedar City Field Office requesting modifications to the Reclamation Plan seeding mixture and rates within sagebrush and pinyon-juniper woodland and desert scrub and blackbush scrub communities in Beaver and Iron counties. KRGT revised the Utah Reclamation Plan to include the seed species and application rates in Beaver and Iron Counties. The revised seed mixes are provided below and recommended for incorporation into Table 4.5.2-3.

Applicant 1

A1-49 Section 4.5.2.1 and table 4.5.2-3 have been revised to incorporate the revisions to the Utah Reclamation Plan.

A1-49 (cont'd)

Mixture UT8 Reclamation Species List for Mojave Desert

Common Name and Species	Seed Application Rate (pounds/acre/PLS)[a]
Galleta grass (*Hilaria rigida* or *jamesii*)	3.0[1]
Indian ricegrass (*Oryzopsis hymenoides*)	3.0[1]
Desert globemallow (*Sphaeralcea ambigua*)	1.5[1]
White bursage (*Ambrosia dumosa*)	3.0[1]
Creosote (*Larrea tridentata*)	1.0[1]
Nevada ephedra (*Ephedra nevadensis*)	2.0[1]
Four-wing saltbush (*Atriplex canescens*)	2.0[1]

[a] Seeding rate is listed as pounds per acre of pure live seed (PLS). Seeding rate is doubled if hydroseeded or broadcast. The seed mix may be modified based on site-specific conditions, identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability. An alternative seeding rate may be applied in areas deemed appropriate by BLM or the landowner.

[1] Native

Applicant

1

A1-49 (cont'd)

Mixture UT1 (for Beaver and Iron Counties) Reclamation Species List for Sagebrush Scrub and Pinyon-Juniper Woodland Communities

Common Species Name	Seed Application Rate (pounds/acre/PLS)[a]
Crested wheatgrass – Ephraim	1.0[2]
Sandberg bluegrass	0.5[1]
Sand dropseed	0.25[1]
Galleta grass	1.0[1]
Indian ricegrass–Nezpar	2.0[1]
Bluebunch wheatgrass	1.0[1]
Alfalfa-Ladak	1.0[2]
Small burnet	1.0[2]
Yellow sweetclover	0.25[2]
Lewis flax	1.0[1]
Gooseberryleaf globemallow	1.0[1]
Palmer penstemon	1.0[1]
Antelope bitterbrush	1.0[1]
Four-wing saltbush	1.0[1]
Wyoming or Hobble Creek sagebrush	0.5[1]

[a] Seeding rate is listed as pounds per acre of pure live seed (PLS). Seeding rate is doubled if hydroseeded or broadcast. The seed mix may be modified based on site-specific conditions, identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability and cost. An alternative seeding rate may be applied in areas deemed appropriate by BLM or the landowner. As requested by the BLM, seeds will be treated with "Germ-N-8" to enhance germination, root development, and seedling vigor.

[1] Native

[2] Non-Native

Applicant 1

A1-49 (cont'd)

Mixture UT4 (for Beaver and Iron Counties) Reclamation List for Desert Scrub and Blackbush Scrub Communities

Common Species Name	Seed Application Rate (pounds/acre/PLS)[a]
Crested wheatgrass	1.0[2]
Indian ricegrass–Nezpar	2.0[1]
Bottlebrush squirreltail	2.0[1]
Sand dropseed	0.25[1]
Lewis flax	1.0[1]
Gooseberry leaf globemallow	1.0[1]
Palmer penstemon	1.0[1]
Forage kochia	0.5[2]
Four-wing saltbush	2.0[1]
Winterfat	1.0[1]

[a] Seeding rate is listed as pounds per acre of PLS. Seeding rate is doubled if hydroseeded or broadcast. The seed mix may be modified based on site-specific conditions, identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability and cost. An alternative seeding rate may be applied in areas deemed appropriate by BLM or the landowner. As requested by the BLM, seeds will be treated with "Germ-N-8" to enhance germination, root development, and seedling vigor.

[1] Native

[2] Non-Native

The Utah Reclamation Plan has been revised to incorporate these additions or revisions to the planting mixes and is also being submitted with KRGT's comments to the DEIS/EIR.

A1-50 Page 4-87, Table 4.5.2-4, Planting Prescribed for the Dixie National Forest

Based on comments from USFS in a letter through Ms. Mary Wagner, Forest Supervisor dated November 27, 2001 (and as referenced in KRGT's response to Question 85 (j) of the FERC's November 20, 2001 *Information Request*), KRGT has modified the proposed seed mix and rates for the Dixie National Forest as follows: include the species "sandberg bluegrass" to the mix at rate of 1 lb/acre and decrease the application rate of "pubescent wheatgrass var. Luna" from 4 to 3 lbs/acre. KRGT recommends Table 4.5.2-4 be revised to include these changes to the Dixie National Forest Seed Mix.

The USFS also recommended some other modifications to the Reclamation Plan including slope class for use and type of mulch, and stream restoration that KRGT has incorporated into the Reclamation Plan. The revised Dixie National Forest Reclamation Plan is included with KRGT's comments to the DEIS/EIR.

Applicant 1

A1-50 Section 4.5.2.1 and table 4.5.2-4 have been revised to incorporate the revisions to the Dixie National Forest Reclamation Plan.

A1-51 Page 4-87, Paragraph 1, Nevada Reclamation

The text indicates that KRGT would segregate topsoil to a depth of 4 to 6 inches except where soils have a high content of cobble, rocks, or boulders. This statement is accurate in general for BLM, USFS and other non-agricultural or residential lands as requested by the landowner but recommends adding: "over the trench and spoil storage areas and other portions of the right-of-way to be excavated or graded below the surface on BLM, USFS and other private lands as requested by the landowner". To preserve root systems and minimize disturbance KRGT does not propose full-width topsoil segregation across the portions of the construction right-of-way in Nevada that would otherwise not be graded or excavated.

Based on recent comments and meetings with the BLM, Las Vegas Field Office, KRGT has amended the Reclamation Plan for the Nevada portion of the pipeline to include seeding in all disturbed areas in the Mojave Desert, Desert Tortoise Critical Habitat, and the Red Rock Canyon National Conservation Area and Spring Mountain National Recreation Area (Humboldt-Toiyabe National Forest). For the Red Rock Canyon National Conservation and Spring Mountain National Recreation Area, seeding will additionally include the remaining portion of the existing, undisturbed right-of-way. The seeding mixtures and application rates currently proposed are provided below, and are subject to further review and approval by BLM.

Mixture NV1 Reclamation Species List for Mojave Desert and Desert Tortoise Critical Habitat

Common Name and Species	Seed Application Rate (pounds/acre/PLS)[a]
Galleta grass (*Hilaria rigida* or *jamesii*)	3.0[1]
Indian ricegrass (*Oryzopsis hymenoides*)	3.0[1]
Desert globemallow (*Sphaeralcea ambigua*)	1.5[1]
White bursage (*Ambrosia dumosa*)	3.0[1]
Creosote (*Larrea tridentata*)	1.0[1]
Nevada ephedra (*Ephedra nevadensis*)	2.0[1]
Four-wing saltbush (*Atriplex canescens*)	2.0[1]

[a] Seeding rate is listed as pounds per acre of pure live seed (PLS). Seeding rate is doubled if hydroseeded or broadcast. The seed mix may be modified based on site-specific conditions, identification of additional useful species for rapid site stabilization, species success in past revegetation efforts, and seed availability. An alternative seeding rate may be applied in areas deemed appropriate by BLM or the landowner.

[1] Native

Applicant 1

A1-51 Section 4.5.2.1 and table 4.5.2-5 have been revised to incorporate the revisions to the Nevada Reclamation Plan.

A1-51 (cont'd)

Mixture NV2 Reclamation Species List for Red Rock Canyon National Conservation Area and Spring Mountain National Recreation Area

Common Name and Species	Seed Application Rate (pounds/acre/PLS)[a]
Indian ricegrass (*Oryzopsis hymenoides*)	3.0[1]
Desert globemallow (*Sphaeralcea ambigua*)	0.5[1]
Four-wing saltbush (*Atriplex canescens*)	2.0[1]
Desert needlegrass	1.5[1]
Blackbrush (local variety)	5.0[1]

[a] Seeding rate is listed as pounds per acre of pure live seed (PLS). Seeding rate is doubled if hydroseeded or broadcast. An alternative seeding rate may be applied in areas deemed appropriate by BLM.

[1] Native

KRGT has submitted the revised Nevada Reclamation Plan to BLM for additional review and approval, and expects to submit the final revised Plan by the close of the comment period for the DEIS/EIR.

A1-52

Page 4-88, Paragraph 1 (4th bullet), Permeon™ Treatment and Reshaping Boulders

The text indicates that KRGT will treat the north-facing slope (MP 556.6) in the vicinity of Wilson Tank and the area between MPs 557.3 and 558.2 with Permeon ™ to reduce visual contrast. The statement should read "...and the areas at MP 557.3 and MP 558.2." These sites were identified during a field trip with BLM representatives on November 8, 2001 as further described in KRGT's response to Question 64 of the FERC's November 20, 2001 *Information Request*. These two milepost references were for exposed, large rock berms from the original construction at these two distinct locations, rather than the entire 0.9-mile distance between these two referenced mileposts. It should also be noted that visual treatment in lieu of Permeon™ may also include rearranging these rock berms to more natural patterns with the facing surfaces being the darker colored, naturally appearing (desert varnished) surfaces as summarized under the 5th bullet of this paragraph. In general, Permeon ™ would only be applied selectively at specific locations based on field determinations made with BLM or USFS representatives at the time of cleanup and restoration to assess actual visual contrasts of exposed rock.

A1-53

Page 4-88, Paragraph 7, Nevada Reclamation Monitoring Period

Based on recent comments and meetings with BLM, Las Vegas Field Office, KRGT has agreed to monitor the construction right-of-way within the Mojave Desert, Desert Tortoise Critical Habitat and Red Rock Canyon National Conservation Area and Spring Mountain National Recreation Area (Humboldt-Toiyabe National Forest) for a period of 6 years (Please refer to comments to Page 4-73, Paragraph 2 above).

Applicant 1

A1-52 The paragraph has been revised.

A1-53 The paragraph has been revised.

A1-54 Page 4-89, Paragraph 2, Funding for Offsite Compensation

The DEIS/EIR indicates that KRGT would provide funding for offsite compensation to mitigate for impacts to sensitive species and habitat and implies that the mitigation could occur separate from the desert tortoise mitigation, which will require funding for significant land acquisition. The agreement reached with CDFG determined that if sensitive plant populations located on the right-of-way cannot be mitigated, the third party responsible for implementation of desert tortoise mitigation would look to acquire lands that would also provide suitable habitat for the species of concern. The DEIS/EIR should be modified to clearly identify that KRGT does not intend to provide funding to acquire additional lands beyond that already required for desert tortoise mitigation.

A1-55 Page 4-89, Paragraph 4, Summary, Final Reclamation Plans

Other than previously provided herein, KRGT has received no further or more recent comments from the BLM and USFS on its reclamation plans for Wyoming, Utah, and the Dixie National Forest. These plans are considered final at this time and are being submitted with these comments.

As described in the comments to Pages ES-9 and 4-73 above, the Nevada and California Reclamation Plans are being submitted to BLM and CSLC for further review and input. KRGT expects to finalize the Nevada and California Reclamation Plans and submit them to the FERC by the close of the comment period on the DEIS/EIR.

A1-56 Pages 4-90 and 4-91, Paragraph 6, Yucca, Cactus and Agave Salvage

KRGT has incorporated the salvage and replanting of yucca, cactus and agave into the project Reclamation Plans at the direction of agency personnel in Nevada and California. During early project coordination, KRGT expressed concern that the effort would require commitment of significant financial resources without yielding commensurate environmental benefit. However, KRGT understands that salvage and transplant of these species will be a condition of project approval. Therefore, KRGT will salvage and replant these species where they occur within the construction right-of-way, including areas of extra temporary workspace, and the new Dry Lake Compressor Station site.

KRGT believes that significant efforts have been taken to minimize impacts on this component of the ecosystem and that the level of significance should be put into perspective. While impacts are considered significant due to the defined criteria set forth, KRGT has avoided and minimized impacts to the extent possible through utilization of existing rights-of-way (which are largely devoid of these species) and through localized route variations and corridor reductions. Therefore, KRGT believes the DEIS/EIR should acknowledge the avoidance and minimization of impacts inherent in the proposed action.

KRGT also believes the DEIS/EIR does not take into account the offsets provided by KRGT through the desert tortoise mitigation program. As proposed, KRGT would provide offsets at ratios of 1:1, 3:1 and 5:1 based on habitat classification. These offsets include re-mitigating at 1:1 and 3:1 the existing permanent and temporarily

Applicant 1

A1-54 The paragraph has been revised.

A1-55 Section 4.5.2.1 has been revised to acknowledge that the Wyoming, Utah, and Dixie National Forest Reclamation Plans have been finalized. Subsequent to its comments on the draft EIS/EIR, KRGT filed its final Reclamation Plans for Nevada and California. Section 4.5.2.1 has also been revised to incorporate this information.

A1-56 The Agency Staffs have reviewed KRGT's proposed treatments for yucca, cactus, and agave communities as outlined in its final site-specific Reclamation Plans. Section 4.5.3 has been revised to state that KRGT has increased the number of succulents to be salvaged, incorporated additional treatments to improve the transplanting success rates, and adopted the BLM's *Draft Restoration Success Standards and Monitoring Plan* subsequent to the draft EIS/EIR. However, based on the low survival rate of these communities after the previous construction and the uncertainty of the success of KRGT's proposed transplantation efforts for these species, a long-term reduction in special concern vegetation communities could occur. Therefore, the potential impact on these species could be significant. Approval of the project would be subject to a Statement of Overriding Considerations under the CEQA due to this significant unavoidable impact that could remain after mitigation is applied.

The Statement of Overriding Considerations would be prepared by the CSLC staff and presented to the CSLC Commissioners at the public meeting that would be held to consider certification of the final EIS/EIR. The CEQA Guidelines Section 15093 requires the CSLC to balance, as applicable, the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental risks when determining whether to approve the project. If the specific economic, legal, social, technological, or other benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered "acceptable."

A1-56 (cont'd) disturbed right-of-way previously mitigated through offsite land purchases during the original construction. In other words, KRGT is providing duplicate mitigation for its existing right-of-way and any overlap of previously disturbed temporary construction right-of-way.

As noted in the DEIS/EIR, yucca, cactus and agave have not successfully re-colonized the existing right-of-way and initial salvage and replanting efforts were ineffective. Spring 2001 field surveys confirmed they are largely absent from the existing right-of-way. Therefore, the offsets required for desert tortoise for the existing right-of-way will directly benefit the preservation of these species without impacting these communities since they are generally not present on the existing right-of-way. Those located in areas of new disturbance are being salvaged and transplanted as directed by Agency Staff.

Therefore, KRGT requests the agencies consider that salvage of these succulent plants, along with the offsets provided for portions of the right-of-way where the communities are not impacted will mitigate the impact to less than significant. Alternately, KRGT feels the FEIS/EIR should recognize that while the impacts to these succulent plants are considered significant, the Agency Staff do not feel that they are outweighed by the overall benefits provided by the project. Subsequently, CSLC as Lead Agency for CEQA review should provide a preliminary conclusion of its intent to issue a Statement of Overriding Consideration to approve the project. KRGT requests the text of the FEIS/EIR conclude that KRGT has designed the project to avoid and minimize impacts to the extent feasible by maximizing existing rights-of-way on which these resources are largely absent, and will salvage and re-plant these species in accordance with agency guidelines where present. In addition, the compensation proposed for desert tortoise mitigation provides additional mitigation regardless of whether project activities impact these communities. Since CSLC is the lead agency for CEQA, KRGT feels a conclusion should be drawn indicating that a Statement of Overriding Considerations is merited and should be issued with the FEIS/EIR for this project.

A1-57 Page 4-93, Table 4.5.4 –1, Noxious Weed Locations

The Utah County Public Works Department recently provided a map of their county noting known infestations of noxious weeds within Utah County. The map also shows the alignment of the existing KRGT Mainline through Utah County. Those areas of known noxious weed locations are as follows:

Applicant 1

A1-57 Table 4.5.4-1 has been revised.

A1-57 (cont'd)

Salt Lake Loop; MP187.5-187.6; Scotch Thistle, Musk Thistle; Density=NA
Salt Lake Loop; MP188.1-188.3; Scotch Thistle, Squarrose Knapweed; Density=NA
Salt Lake Loop; MP188.8; Scotch Thistle; Density=NA
Elberta Loop; MP191.6; Squarrose Knapweed; Density=NA {Note: This location coincides with the crossing of U.S. Highway 6, west of Goshen, Utah}
Elberta Loop; MP198.8; Musk Thistle; Density=NA
Elberta Loop; MP199.1; Squarrose Knapweed; Density=NA
Elberta Loop; MP202.4-202.6; Scotch Thistle, Musk Thistle; Density=NA
Elberta Loop; MP204.0-204.1; Squarrose Knapweed; Density=NA
Elberta Loop; MP204.2; Musk Thistle; Density=NA

For completeness, KRGT recommends that these additional locations of noxious weeds identified in Utah County be added to Table 4.5.4-1.

A1-58

Page 4-96, Paragraph 3, Noxious Weed "Known" Occurrences

KRGT disagrees with the general assumption that there is a potential for data gaps in the identification of areas of noxious weed infestations along the right-of-way because KRGT relied on a variety of sources in addition to field surveys. It was through this approach of supplementing field survey results with all other available information sources that KRGT developed the most complete list of areas with known noxious weed infestations.

KRGT chose not to rely solely on field surveys because of the large seasonal variation with respect to germination of the noxious weeds with respect to the time of the field surveys in 2001. For example, on the Opal, Muddy Creek and Coyote Creek 2 loops in Wyoming and Northern Utah, noxious weeds such as Canadian Thistle and Halogeton do not typically begin germination until the middle of summer. These may not have been recorded during the spring/summer 2001 botanical surveys for sensitive plant species, since surveys were largely done along portions of these loops prior to early-to-mid July, when infestations within the survey corridor may not have been readily apparent.

In addition to having performed field surveys (as the Agency Staff identifies on Page 4-92, Paragraph 3), KRGT took the following steps in an effort to best ensure that all areas of known infestation were included in the inventory:

- Contacted each of the Williams and Mojave district offices along the route in order to determine their institutional knowledge of areas of known infestation by the personnel who maintain the pipeline system, and also respond to landowner requests for noxious weed control.
- Contacted each of the Federal land management agencies along the right-of-way to obtain their inventories of known infestations on the areas they manage as they correspond to the pipeline right-of-way; and
- Contacted each of the County's weed control offices to obtain their inventories of known infestations as it corresponds to the pipeline right-of-way.

Applicant

1

A1-58 The paragraph has been revised to include additional information on how KRGT obtained information on areas of noxious weed infestations and information from KRGT's revised Noxious Weed Plan. Subsequent to its comments on the draft EIS/EIR, KRGT filed supplemental information providing the specific milepost ranges where data gaps in noxious weed data occur. Section 4.5.4 has been revised to acknowledge that KRGT would perform noxious weed surveys before construction in these locations.

A1-58 (cont'd) Information obtained from these additional contacts and these additional measures were included in the Noxious Weed Plan, a revision of which is being provided with KRGT's comments.

A1-59 Page 4-96, Paragraph 3 (1st bullet, parts a, b and c), Staff Recommended Measures for Noxious Weed Surveys and Treatment

Part a, Noxious Weed Surveys

While the Agency Staff recommended that KRGT perform a thorough field survey for noxious weeds along the entire pipeline route prior to construction to identify existing noxious weed infestations by milepost and density, KRGT disagrees with this measure for the following reasons:

- KRGT has already identified existing noxious weed infestations by milepost through field surveys supplemented by a review of available information sources.
- The Agency Staffs' recommendation was based upon the assumption that there is a potential for data gaps in the identification of areas of known noxious weed infestation along the right-of-way. KRGT's believes this assumption is incorrect as explained in the previous comment. In addition to having performed field surveys (as noted on Page 4-92, paragraph 3), KRGT took additional steps to ensure that areas of known infestation were not overlooked.
- A duplicate pre-construction survey for noxious weeds would provide no additional information regarding the occurrence of noxious weed infestations in portions of Wyoming and most of Utah. As described in the previous comment, germination of Canadian Thistle and Halogeton will have just started about the same time as right-of-way clearing, precluding effective pre-construction surveys for existing noxious weed populations in northeastern Utah and Wyoming.

KRGT also notes that pre-construction botanical and wildlife surveys will be performed throughout the project area during Spring 2002. At the same time that these surveys are being performed, KRGT will instruct the survey teams to observe and document existing noxious weed infestations by milepost and density, using the density parameters provided in Table 4.5.4-1 of the DEIS/EIR. However, KRGT does not propose to repeat separate, project wide pre-construction surveys for noxious weeds.

Part b. Noxious Weed Treatment

KRGT agrees with the Agency Staffs' recommendation that KRGT implement treatment of those areas in accordance with the Noxious Weed Plan, with the following clarifications:

Applicant 1

A1-59 a. This portion of the Agency Staffs' recommendation has been deleted (see the response to comment A1-58).

b. The Agency Staffs acknowledge that there are weed species that are not considered feasible for control due to their widespread distribution. Eradication of these species may not be achievable; however, section 4.5.4 has been revised to recommend that all species deemed noxious by Federal, state, and/or county weed control agencies be treated to the extent that they do not present a significant hindrance to reclamation efforts or a threat to non-infested areas adjacent to the right-of-way.

c. This portion of the Agency Staffs' recommendation has been deleted.

A1-59 (cont'd)

1. Those areas that are currently identified in Table 4.5.4-1, with the recommended additions for Utah County provided with the comments to Page 4-93, Table 4.5.4.-1 (above), and the results of Spring 2002 pre-construction surveys for sensitive species and wildlife;

2. Those areas do not include Cheatgrass (*Bromus tectorum*) and other grass species (*Schismus spp.*). As specified in KRGT's Noxious Weed Plan, "KRGT, the Bureau of Land Management (BLM), and other agencies recognize that there are species, such as Cheatgrass (*Bromus tectorum*) and other grass species (*Schismus spp.*), that because of their widespread distribution, are not considered feasible for general control. In addition, KRGT's objective is to prevent the spread of noxious weeds, and treat selected areas along the right-of-way where target species are problematic and form a significant portion of the vegetation community in comparison to adjacent undisturbed areas. Repeated control measures on the right-of-way are generally not considered feasible where those species are already established and abundant in adjacent areas."

3. KRGT would implement the treatment methods specified in KRGT's Noxious Weed Plan as they are substantially in agreement with the treatment methods identified on Page 4-95 of the DEIS/EIR, and that mechanical treatment would not occur unless done in conjunction with re-seeding in accordance with the monitoring and success criteria identified in the reclamation plans.

Part c. (Page 4-97) Mechanical Treatments

1) KRGT agrees with the Agency Staff recommendation that KRGT avoid mechanical treatments for noxious weed control such as discing that would disturb the soil surface within native habitats. KRGT has revised the Noxious Weed Plan to address this recommended measure.

A1-60

<u>Pages 4-101 and 4-104, Paragraphs 5 and 8, Placement of Trench Plugs at 1-Mile Intervals</u>

As presented in KRGT Data Request Response 15, dated August 15, 2001 KRGT proposes to utilize trench plugs at 1-mile intervals in areas of high wildlife populations, or as necessary to protect desert tortoise (Page 4-127, Paragraph 2). The need for trench plugs at 1-mile or closer intervals would be determined by the Environmental Inspector and FERC/BLM/CSLC third-party monitor during construction as necessary to protect wildlife, sensitive species and cattle. The exception would be at defined wildlife and cattle trails, where plugs and ramps would be installed regardless of spacing. In all cases the trench would be monitored on a regular basis and prior to backfilling to ensure any entrapped animals are removed. KRGT notes that if wildlife entrapment is not occurring, trench plugs and escape ramps every mile would not provide additional environmental protection.

Applicant 1

A1-60 The Agency Staffs believe that, in general, trench plugs should be installed at maximum 1-mile intervals along the trench as well as at well-defined livestock and wildlife trails intersected by the trench. During construction, KRGT may request modifications to this measure by justifying each modification relative to site-specific conditions and providing an explanation of how each modification provides an equal or greater level of environmental protection than the original measure. KRGT must receive approval from the FERC and the CSLC (in California) before implementing a modification. See also the response to comment SA4-1.

A1-61 Page 4-124, Paragraph 2, Funding to the CDFG

The DEIS/EIR indicates that KRGT would provide funding that includes both an enhancement and management fee to the CDFG to offset desert tortoise impacts. KRGT will be satisfying desert tortoise mitigation in one of two ways, based on whether the lands impacted are public or private. For all public land impacts, KRGT will contribute funding directly into recognized accounts set up by the BLM. Amounts contributed will be based specifically on the acreage impacted, and the total acreage disturbed in the East Mojave versus the West Mojave Desert regions.

For private lands in California, CDFG is the primary agency responsible for the implementation of mitigation. However, KRGT understands the CFDG does not have specific funding mechanisms set up to receive mitigation payments. Therefore, project proponents are offered the opportunity to acquire lands and donate them to CDFG or some management unit, or the project proponent can work directly with a third party (like the Desert Tortoise Preserve Committee) who will receive the mitigation funding and acquire desert tortoise habitat. In these situations, the amount contributed to the third party includes not only the expected cost of the land, but also an enhancement fee and management fee. KRGT is electing to utilize a third party rather than acquire the land. The last bulleted finding is applicable only to the desert tortoise mitigation required to offset impacts on private land. KRGT recommends revising to add the words "provide funding to a third party to be utilized by the CDFG to manage acquired private lands in California."

A1-62 Page 4-127; Paragraph 5 (Third Bullet) "Bird-be Gone" Pipeline Markers

KRGT agrees to fit all pipeline marker signs with bird-be-gone, or similar bird repellant devices on the new loop line in all areas of suitable desert tortoise habitat.

A1-63 Page 4-128 Virgin River (Moapa) Roundtail Chub.

The DEIS/EIR indicates an Agency Staff recommendation of February 1 through July 31 as a restricted (blackout) window for construction of the Muddy River crossing. KRGT has consulted with the agencies on this window and provides the following documentation from both the NDOW and the USFWS that indicate construction would be allowed up to April 1.

On July 18, 2001, Mr. Jim Heinrick (Nevada Department of Wildlife) was contacted, indicating that a window from the 1st of April through the first week of July be adhered to. This contact report was submitted with Resource Report 3 of KRGT's August 1 filing.

KRGT has had ongoing communications with the USFWS to address concerns raised about the Muddy River, specifically in reference to the population of the chub within the Muddy River. On January 28, 2002 KRGT conducted a meeting at the Muddy River with the USFWS fisheries biologist to address concerns that the agency may have had regarding the crossing and proposed methodologies. At that time USFWS agreed that a dry - flume crossing would address their concerns and that the blackout window would not necessarily need to begin on February 1. Subsequent to that meeting, the USFWS provided comments to KRGT specifically on Proposed Mitigation

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A1-61 The paragraph has been revised.

A1-62 The paragraph has been revised.

A1-63 Section 4.7.2 has been revised to reflect KRGT's commitment to cross the Muddy River using the flume method before April 1.

A1-63 (cont'd) Measures for the Kern River Gas Pipeline Expansion Project, Nevada Segment (USFWS letter dated February 22, 2002). This letter was in response to a letter outlining specific mitigation measures proposed for Nevada species of Concern. Specifically in their reply, USFWS requests that KRGT complete the crossing of the Muddy River by April 1 to avoid the spawning period for the chub. A copy of the USFWS letter is submitted with KRGT's comments.

Therefore, based on the concurrence of both the NDOW and the USFWS, KRGT requests the elimination of this Staff recommendation, or modification to April 1.

A1-64 Page 4-136 - Table 4.7.3-2, Burrowing Owl Mitigation Measures

Based on recent comments from the resource agencies, KRGT has modified its proposal regarding burrowing owl mitigation in Wyoming and Utah. The primary change revolves around extending the period of concern from July 1 until July 31, and modifying how owl burrows will be treated.

Construction in Wyoming and Utah within suitable burrowing owl habitat is now scheduled from late July/early August to November 1, 2002 (as opposed to a June 1 start date), and would therefore potentially overlap with the last two weeks of the burrowing owl breeding and nesting season. Construction would not directly impact the mating season, although it may overlap with nesting activities. Activities associated with pipeline construction may actually enhance and/or create high quality burrowing owl habitat. The temporary clearing of the construction right-of-way and the initial periods of revegetation development allow for various grass and forb species used as forage by potential prey species to revegetate the area. Also trenching and back-filling activities may provide the soil structure appropriate for burrow excavation.

KRGT has developed the following procedures through an iterative process that initiated with mitigation proposals forwarded to the applicable agencies. The initial proposal was forwarded to the agencies for review in early January. In response to agency comments that the measures were not entirely satisfactory, a multi-agency conference call was held on January 22, 2002 to determine the most appropriate conservation strategies for the burrowing owl. Following the conference and subsequent conversations with Jim Parrish, the mitigation methods detailed below were developed. KRGT believes that these measures adequately address all concerns raised by the resource agencies and are sufficient to offset any potential impacts to the burrowing owl in Utah and Wyoming.

- Pre-construction Surveys. Surveys for burrowing owls will be conducted in the spring of 2002 only in those portions of the right-of-way where construction may be initiated prior to July 31. Multiple surveys will be conducted in these areas to ensure that all owls potentially returning to nest on the right-of-way are identified. Surveys in Wyoming will be conducted in early to mid-April, depending on the severity of this year's winter. These dates are based on conversations with the UDWR (Parrish, February 14, 2001) and the BLM (Phinney, January 16, 2002).

- Passive Relocation. For portions of the right-of-way where construction may occur prior to July 31, KRGT will "passively relocate" burrowing owls during pre-construction surveys to prevent them from nesting on the right-of-way during construction. Passive relocation will consist of hazing any individuals off the right-of-way, covering the existing burrows, and thereby dissuading the owls from

Applicant 1

A1-64 Section 4.7.3 has been revised to reflect additional mitigation measures for the burrowing owl provided by KRGT in supplemental information filed after its comments on the draft EIS/EIR.

A1-64 (cont'd)

returning to the right-of-way. Prior to covering burrows, the survey biologists will confirm that no owls (adults, juveniles, or eggs) are located in the burrow using fiber optic scopes. Burrows will be covered using exterior plywood or fill dirt to temporarily seal the entrance. These measures should sufficiently dissuade owls from returning to the right-of-way so that no burrowing owls will nest on the right-of-way. KRGT recognizes that burrowing owls may try to re-colonize the right-of-way following passive relocation. To minimize this, KRGT will conduct follow-up surveys of the right-of-way to further diminish the potential for nesting. Where construction will occur after July 31, KRGT will not have to relocate burrowing owls. At that time, nesting and young owls will be able to vacate the right-of-way ahead of construction (Parrish, December 4, 2001). In the event that an established nest (eggs or juveniles present) is encountered on the right-of-way, KRGT will not attempt to relocate the nest as no takes are permitted subsequent to egg-laying and prior to fledging.

- Construction of Artificial Burrows off right-of-way In the event that suitable existing burrows are not available off the construction right-of-way, KRGT will construct artificial burrows to which the owls will be relocated, following the *Burrowing Owl Nest Box Construction and Installation Procedures* provided by the UDWR (Parrish, December 4, 2001). The new burrow will be constructed within 20 to 50 meters (65 to 165 feet) of the existing/previous burrow to facilitate relocation (Grandison, December 3, 2001, and Parrish, December 4, 2001). Upon their return, the owls will find the new nest and relocate themselves.

- Pre-construction Survey Summary. Following completion of the pre-construction surveys, KRGT will submit a report to the appropriate state and federal agencies detailing the number of active burrowing owls found, their apparent health, and treatment.

- Right-of-way Flushing. In areas where construction will be taking place after July 31, 2002, any burrowing owls identified by the environmental inspector will be flushed off the right-of-way ahead of the construction equipment.

A1-65 Page 4-145, Paragraph 6, Drawings for Moody Wash and Mogatsu Creek

KRGT is providing these drawings as part of the comments to the DEIS/EIR.

A1-66 Page 4-146, Paragraph 3, Yellow Two-tone Beardtongue

KRGT proposes to modify the approach to address mitigation for the Yellow Two-tone beardtongue. KRGT recently received comment from the USFWS regarding concerns of hybridization of this species with Palmer's Beardtongue, particularly in the vicinity of the Red Rock Canyon National Conservation Area in Nevada. In a letter dated February 22, 2002 the USFWS has recommended that KRGT not collect seed in areas where hybridization is of concern. Therefore, based on the USFWS recommendation KRGT will not propose seed collection and redistribution in areas where hybridization is of concern. Additionally, KRGT will conduct additional spring 2002 surveys to identify and assess the extent of potential hybridization elsewhere along the right-of-way, particularly on the Dry Lake Loop 2 in Nevada. Only in areas where the populations do not exhibit any signs of hybridization will KRGT implement seed collection and redistribution following construction.

Applicant 1

A1-65 The paragraph has been revised.

A1-66 The paragraph has been revised. See also the response to comment FA5-63.

A1-67 Page 4-147, Paragraphs 1 and 2, Desert Cymopterus, Barstow Wooly Sunflower and Mojave Monkey Flower

The DEIS/EIR indicates that if any of these three species are found, in a response to a recommendation of the CDFG, KRGT would acquire and deed to CDFG property containing suitable habitat for these species. KRGT has not committed to obtaining additional property beyond that required under the Desert tortoise compensation funding. Rather, the intent of the discussions was that if any of these plants are found, the third party responsible for implementing the desert tortoise mitigation funding would incorporate suitable habitats, and if feasible, known populations of these species, into the overall desert tortoise habitat acquisition strategy for the project.

A1-68 Page 4-170, Paragraph 2, Completion of Construction within 7 Days Where Active Pivot Irrigation is Used.

As a point of clarification it is KRGT's intent to negotiate the deactivation of all pivot irrigation systems in use immediately prior to construction. KRGT would compensate the landowner for damages and lost production as appropriate and include the agreement as a special right-of-way stipulation in the construction contract. For those landowners that do not agree to deactivate their systems KRGT would negotiate an appropriate schedule but cannot commit to a maximum of 7 days as a general provision. KRGT requests the 7-day provision be changed to a time line negotiated with the respective landowner or special conditions of the easement.

A1-69 Page 4-171, Paragraph 6, Residence at Milepost 153.89

The workspace has been relocated so that a minimum distance of 29 feet now separates the edge of the workspace and the residence. Attached is a revised site-specific drawing (Drawing H-153.89, Rev A).

A1-70 Page 4-196, Paragraph 4 (2nd bullet), Visual Mitigation

KRGT recognizes that feathering and tapering are effective landscaping techniques to reduce the visual effects of viewsheds of linear rights-of-way, timber harvesting etc., especially within forested viewsheds, and KRGT's original (1991) reclamation plans or Resource Report 8 of the August 1 Filing made reference to feathering. However, KRGT in its Response to Question 85 (g) of the FERC's November 20, 2001 *Information Request* further clarified that it did not propose feathering of the construction right-of-way or ATWS by conducting additional clearing beyond the construction right-of-way or ATWS limits (Appendix C of DEIS/EIR) for the purpose of creating more irregular or tapered boundaries along the construction corridor. In addition, the construction right-of-way widths were designed to overlap the existing KRGT right-of-way wherever possible with a standard 25-foot offset for the new pipeline loops, and the working widths identified to minimize new disturbance while providing the reasonable minimum work space needed for safe and efficient construction. This design would not generally permit creating irregular boundaries by further limiting clearing (or feathering inward) or use of the designated construction right-of-way.

Applicant 1

A1-67 The paragraph has been revised.

A1-68 The paragraph has been revised.

A1-69 The paragraph has been revised.

A1-70 The paragraph has been revised.

A1-70 (cont'd) As noted KRGT does not propose to feather the right-of-way in clearing. However, KRGT is proposing special vegetation plantings at designated visually sensitive areas; replanting of the cacti, yucca and agave in the desert portions, and the re-arrangement of surface rock or rock faces into more natural patterns toward the edges of the right-of-way during restoration. These procedures would help create a more irregular boundary while minimizing the amount of disturbance.

KRGT recommends that the second bulleted item identifying that the right-of-way would be feathered and tapered during clearing be deleted, although the restoration treatments would attempt to accomplish similar long-term goals of reducing the prominence of the right-of-way in the viewsheds of sensitive areas.

A1-71 Page 4-197, Paragraph 4, Painting of Pipeline Markers

The U.S. Department of Transportation sponsored the formation of the Common Ground Alliance Best Practices. This organization recommends that utilities adhere to American Public Works Association color coding for buried utilities. The color coding scheme calls for yellow markers for natural gas, oil, steam, petroleum or other gaseous materials. The KRGT pipeline currently has yellow markers and we recommend the use of similar markers for the loop line. Also, DOT 192.707 requires KRGT to install markers wherever necessary to identify the location of the pipeline to reduce the possibility of damage. KRGT feels the color and location of markers are key elements of the public safety program and would be diminished by painting the markers a background color or locating them where they are not visible.

A1-72 Page 4-223, Section 4.10.4, Paragraph 4, View Shed Analysis

The DEIS/EIR references one historic-period site of seven that underwent a viewshed analysis and which was recommended to be bored. Our review of the records has determined that there are two historic-period sites of seven that underwent viewshed analysis and boring recommended. The two sites are the historic Evanston City Ditch and a historic wooden water line that is also associated with the town of Evanston. The alternative to boring these sites is to prepare an appropriate level of archival documentation. A final decision as to which mitigation alternative to use has not yet been made.

A1-73 Page 4-224, Paragraphs 1 and 4 (Utah), Number of Recorded Sites

The number of sites referenced do not match the total number of sites listed by the cultural resources contractor and contained within a recently prepared table of recommended National Register of Historic Places eligibility determinations. Copies of this table have been submitted to the lead BLM office and to the FERC. The sites listed in this table may affect the number of sites referenced for each of the states mentioned in the DEIS/EIR. KRGT recommends the information from the table submitted to BLM and FERC be incorporated into the FEIS/EIR.

A1-74 Page 4-225, Paragraph 2 (California), The Hay Road

Recent discussions with the California BLM state archaeologist have revealed that the site identified as "the Hay Road" was mislabeled. The site number is actually CA-SBR-

Applicant

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A1-71 The paragraph has been revised.

A1-72 The paragraph has been revised.

A1-73 The paragraph has been revised.

A1-74 The paragraph has been revised.

A1-74 (cont'd) | 3069H and was transposed from the county number (CA-SBR-2043). The site is not listed on the National Register of Historic Places.

A1-75 | Page 4-225, Section 4.10.5 (Native American Consultations), Paragraph 2

Table 4.10.5-1 (Page 4-226) lists the Native American groups that have been contacted and summarizes concerns they have raised. The latest information referenced wes received in September of last year. Numerous consultations with Netive Americans have occurred since then; a summary of those efforts is attached.

A1-76 | Page 4-228, Section 4.10.6 (Impacts and Mitigation), Paragraph 2

The DEIS/EIR states that KRGT hes completed cultural resource surveys in California; however, inventory in the remaining states is not complete. Pleese note that several additional surveys have been completed. In Wyoming, an addendum report covering eccess roads, off-right-of-way facilities and route deviations has been filed with the State Historic Preservation Office (SHPO), Wyoming BLM and the FERC. Therefore, the only surveys remaining in Wyoming are inventories of exisfing two-track access roads not requiring blading. The inventory for two-track roads was requested by Wyoming BLM during report review. A similar addendum report was filed with the SHPO, BLM and FERC for project facilities in Utah. Utah surveys to be completed include the reevaluation of sites on land denied access (referenced on Page 4-224 of the DEIS). This report and one for the reevaluation of sites on land denied access will be filed with the appropriate agencies. All Nevada facilities, including access road modifications, contractor and pipe storage yards and the Dry Lake Compressor Station power line heve been surveyed for cultural resources and the reports filed with the SHPOs, BLM and the FERC.

A1-77 | Page 4-253, Paragraph 6, Noise Surveys

KRGT agrees to conduct noise surveys at Salt Lake and Daggett no later than 60 days after placing the facilities in service in accordance with the specifications of the Agency Staff recommendation.

A1-78 | Page 4-258, Teble 4.12.1-2

Teble 4.12.1-2 lists the existing Class 2 and Class 3 portions of the various loops. Errors were found in the tables originally submitted by KRGT to the FERC in the original filing. A corrected table (Table 11.2-1 Existing Cless Locetion) is included with these comments. Changes from the original table are in bold.

A1-79 | Page 4-260, Paragraph 2, Gas Control

The KRGT Mainline is operated by gas control in Salt Lake City. The common line is operated by El Paso Natural Gas Company from Colorado Springs, Colorado.

A1-80 | Page 4-260, Paregraph 3, Rate of Change Alarms

The following sentence is incorrect: "Computer-monitored "rate of change" alarms based upon rapid changes in flow rates would be installed on MLV's in populated

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A1-75 Section 4.10.5 has been revised.

A1-76 Section 4.10.6 has been revised.

A1-77 The paragraph has been revised.

A1-78 Sections 4.1.4.1 and 4.12.1 and table 4.12.1-2 have been revised to include the correct class locations.

A1-79 The paragraph has been revised.

A1-80 Section 4.12.1 has been revised to clarify the way the MLVs function.

A1-80 (cont'd) areas. KRGT would equip the MLVs located upstream and downstream of faults with actuators."

None of the automated valves on the KRGT system close using a rate of drop sensor. Instead, the automated valves close on low pressure; the valves are currently set to close at a minimum pressure of 650 psig.

On the Mojave Common system, none of the valves close on "rate of change." Instead, these valves are also automated to close on low pressure. Valve GOV 305 at MP 16.3 closes at a pressure of 650 psig; valve GOV 315 at MP 82.0 closes at a pressure of 575 psig.

Valves that will be installed on the loop line will match the existing Mainline valves on automation and operation (i.e., where existing valves are automated, loop line valves will be automated).

A1-81 Page 4-261, Paragraph 6, Submittal of a Revised Operations and Maintenance Plan Prior to Placing Pipeline Facilities Into Service in California

KRGT employs a comprehensive pipeline Risk Management Program (RMP). The complete risk management process including risk assessment, risk control, decision support, and performance monitoring are described in the risk management written plan. Implementation of the plan provides the basis for addressing significant threats to the operation of the KRGT pipeline systems.

The KRGT RMP uses a performance based relative risk ranking assessment model for the following two primary purposes. First, to organize data and information to help prioritize and plan integrity management activities. Second, to determine which inspection, prevention and/or mitigation activities will be performed and when. The risk assessment model currently uses the *Integrity Assessment Program* (IAP) software. The IAP Risk Model is integrated into KRGT's GIS database in order to effectively utilize information on physical pipeline attributes.

In evaluating the risk to a newly constructed pipeline, the greatest threat to pipeline integrity is pipeline damage during construction. The risk of potential corrosion problems is basically nonexistent. This is why hydrostatic testing is the primary method used to evaluate the initial integrity of the pipeline. Hydrostatic testing the pipeline to pressures beyond what the pipeline will bear during normal operation will identify the existence of any significant pipeline weaknesses.

KRGT Construction Standards provide specific methods for the prevention of initial damage to the pipeline during the construction process. The following is a general description of some of the activities that are designed to ensure the prevention of damage during construction and an overall quality installation:

- During pipe manufacturing the pipe is sent to a coating plant where fusion bond epoxy (FBE) is applied to each pipeline section. This will ensure a strong chip resistant coating to prevent exposure of the metal to a potentially corrosive environment.

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A1-81 After further review of the overall quality of installation, KRGT's proposed measures to ensure the prevention of damage during construction, and the proposed post-installation pipeline inspection by an internal geometry inspection pig and hydrostatic testing, the Agency Staffs concur with KRGT's position that initial smart pigging of the pipeline would not add significantly to the enhancement of the public and environmental safety, except by providing baseline data for comparison with future inspection data. However, the proactive method of future periodic inspections of the pipeline would enhance public safety. Sections 4.1.4.1 and 4.12.1 and mitigation measures KRGT173 and ARM11 in table 5.1-1 have been modified to state that KRGT shall internally inspect the pipeline on a periodic basis with a high resolution tool, at a minimum of one inspection every 10 years, or sooner if the evidence suggests that significant corrosion or defects exist or if any new Federal or state regulations require more frequent or comparable inspections. Within 3 months following the promulgation of any new Federal or state regulations, KRGT would update the plans and submit revised copies to the CSLC and the FERC.

The fifth bullet of KRGT's comment (concerning the cathodic protection (CP) system description) needs clarification. "Sacrificial anodes" implies a galvanic CP system. The CP system on the pipeline is an impressed current CP system in which alternating current power is transformed and rectified into direct current, which in turn is impressed on a "groundbed" of, typically, graphite anodes. The anode bed is connected to the positive (+) side of the rectifier, while the pipeline is connected to the negative (-) side to complete the circuit. A better term for the "groundbed" anodes, which are relatively inert, is impressed current anodes instead of "sacrificial anodes."

A1-81 (cont'd)

- The pipeline sections are welded together at the construction site with 100% of the girth welds receiving a radiographic or ultrasonic inspection by a certified technician. A certified welding inspector also performs a visual inspection of each weld. This ensures that the weld has no defects that will affect the integrity of the pipeline.
- The welded pipeline joints are coated at the construction site resulting in the pipeline being 100% coated.
- Before the pipeline is buried, the pipeline coating is inspected with a device called a "jeep" that is a rubber conductive detector of metal through the coating. The jeeping is performed over the entire surface area of the pipeline to detect any anomalies or imperfections in the pipeline coating.
- Ideally if the pipeline is 100% coated it is not susceptible to rust or corrosion. As an additional integrity measure, a cathodic protection system is installed throughout the length of the pipeline. Sacrificial anodes or "ground beds" are installed at strategic locations along the pipeline, along with rectifiers that induce a very low current in order to direct the natural underground corrosive environment toward the sacrificial anodes and thereby protecting any existing or future pipeline metal exposure from the corrosive environment. Also, cathodic protection (CP) test leads are attached to the pipe at strategic locations throughout the length of the pipeline system in order to periodically measure the effectiveness of the CP system and make adjustments when necessary.
- When the pipe is buried, the pipeline is covered with soft dirt or other appropriate fill material to protect the integrity of the coating during backfill.
- Finally, before the operation of the pipeline begins, an internal geometry inspection pig will be run throughout the length of the line in order to detect any possible pipe deformation that could have occurred during the construction process. Any pipe deformations detected will be addressed as determined by KRGT construction procedures.

The above risk mitigation activities are performed to address the most significant risk factor during the installation process, which is construction related damage. Smart pigging and other integrity confirmation methods will eventually be performed when the system integrity studies warrant the need to perform those specific inspection activities. KRGT will hydrostatically test the new pipeline to confirm the mechanical integrity prior to initial operation.

In addition, the pending DOT Natural Gas Transmission Integrity Management Rule will provide the specific requirements for integrity testing to be performed in High Consequence Areas.

In summary, KRGT's RMP provides an effective means to prioritize company resources toward areas of highest risk to the public, environment, and business. KRGT does not believe the initial smart pigging of the pipeline provides any benefit, and only increases the cost of construction. As a responsible operator of an interstate natural gas pipeline, KRGT will comply with the pending DOT Natural Gas Transmission Integrity Management Rule once it is adopted as a final rule. KRGT is concerned that committing

Applicant 1

A1-81 (cont'd) to smart pigging the new pipeline within ten years may not be a prudent expenditure of capital funds, and sets a precedent for the states to dictate pipeline safety rules for interstate natural gas transmission when it is clearly a Federal Government responsibility. Therefore, KRGT requests this recommendation be eliminated from the FEIS/EIR.

A1-82 Page 5-3, Section 5.3, Environmentally Preferable Route

When the original pipeline was constructed, the pipeline route between MPs 16.9 and 17.8 on the Daggett Loop conformed to the boundary of an existing crop irrigation system. However, this land is no longer farmed. The deviation from the existing route as proposed by KRGT results in a route that is 0.2 miles (approximately) shorter in length. KRGT has reached verbal agreement with the landowner and expects to execute an easement for the route as proposed. KRGT requests that the proposed route (RDR S0-05) be approved unless KRGT is unable to execute an easement with the landowner.

A1-83 Page 5-3, Section 5.4, Significant Unavoidable Impacts to Yucca, Cactus and Agave

As noted in our response to Pages 4-90 and 4-91 KRGT believes that this issue should be found to have been mitigated to less than significant. Alternately, a statement should be added to reflect that the currently proposed project has been designed to avoid and minimize impacts to the yucca, cactus and agave to the extent possible. Further, these plant communities are directly benefited by desert tortoise offsets. Since CSLC is a lead agency under CEQA, a conclusion should be drawn indicating that a Statement of Overriding Considerations is merited and should be issued for this project.

A1-84 Page 5-5, Mitigation Measure 6, Filing Profiles

KRGT agrees to submit all created typical and site-specific profile drawings as noted by CSLC in this condition. However, KRGT wishes to clarify that profiles of the entire pipeline are not proposed, as they are simply not needed. KRGT will submit all profiles created as part of the design which typically includes road crossings, railroad crossings, and waterbody crossings where these crossings warrant a profile. For areas that do not require a profile the contractor will be informed of the proper burial depth, including right-of-way easement stipulations, in the contract documents.

A1-85 Page 5-6, Mitigation Measure 8, Environmental Inspection

KRGT agrees to provide two EIs per each spread greater than 40 miles in length as recommended in this mitigation measure. However, KRGT requests that BLM and CSLC consolidate their third-party monitoring programs under the FERC third party monitoring process and select a single contractor to act on behalf of all three agencies.

A1-86 Page 5-7, Mitigation Measure 13, Automated Valves

KRGT respectfully disagrees with this condition. Please see our detailed response to Page 4-17.

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A1-82 Subsequent to these comments on the draft EIS/EIR, KRGT filed information signifying that the landowner prefers KRGT's proposed route (*i.e.*, has voluntarily signed an easement agreement for the proposed route). The EIS/EIR concludes that KRGT's proposed route is the environmentally preferable project.

A1-83 See the response to comment A1-56.

A1-84 Clarification noted. The mitigation measure has been modified accordingly.

A1-85 Sections 2.5 and 5.6 have been revised. A single contractor has been selected to conduct third-party compliance monitoring on behalf of the FERC and the BLM from Wyoming to the California border. The conduct of the third-party compliance monitoring in California has not yet been determined.

A1-86 See the response to comment A1-24.

A1-87 | Page 5-7, Mitigation Measure 14, California Certified Geologist

KRGT has already agreed to retain Jeffery Keaton, Ph.D. during construction to oversee activities associated with geology, including activities in areas of potentially unstable ground, and attempts to locate traces of Quaternary faults during excavation. Dr. Keaton is a certified engineering geologist in the State of California. KRGT understands this requirement applies only to facilities in California.

A1-88 | Page 5-7, Mitigation Measure 15, Paleontological Permits

KRGT agrees to provide copies of paleontological permits required for California to the CSLC prior to initiating construction in California.

A1-89 | Page 5-7, Mitigation Measure 16, Paleontological Monitoring Reports

KRGT agrees to provide copies of paleontological monitoring reports to CSLC, FERC, BLM and other appropriate Federal land management agencies within 90 days of construction completion.

A1-90 | Page 5-7, Mitigation Measure 17, Topsoil Segregation

KRGT respectfully disagrees with this condition. Please see our detailed response to Page 4-38.

A1-91 | Page 5-8, Mitigation Measure 18, Sevier River Crossing

See KRGT's comment to Page 4-56, Paragraph 3, Sevier River Crossing.

A1-92 | Page 5-8, Mitigation Measure 19, HDD of Bear and Weber Rivers

KRGT has prepared site-specific drawings for each crossing illustrating the requested information. These oversized drawings are attached to this submittal. KRGT requests written approval from the Director of OEP to install the pipeline as depicted in the site-specific drawings.

A1-93 | Page 5-8, Mitigation Measure 20, Bingham Creek

KRGT has provided documentation in previous submittals that demonstrate Bingham Creek is no longer contaminated. However, in the event KRGT cannot obtain verification from UDEQ the creek will be bored in compliance with this mitigation measure.

A1-94 | Page 5-8, Mitigation Measure 21, Reclamation Plans

KRGT is submitting final plans for Wyoming, Utah and Dixie National Forest with these comments. Revised plans for Nevada and California have been submitted to the appropriate BLM and state offices for final review. KRGT anticipates filing the final Nevada and California plans before the close of the comment period on the DEIS/EIR.

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A1-87 The mitigation measure has been deleted. See the response to comment A1-3.

A1-88 Sections 4.1.5.1 and 5.6 have been revised.

A1-89 Sections 4.1.5.1 and 5.6 have been revised.

A1-90 See the response to comment A1-28. Section 5.6 has been revised.

A1-91 See the response to comment A1-35. Section 5.6 has been revised.

A1-92 See the response to comment A1-36. Section 5.6 has been revised.

A1-93 See the response to comment A1-40. Section 5.6 has been revised.

A1-94 See the response to comment A1-55. Section 5.6 has been revised.

A1-95 Page 5-8, Mitigation Measure 22, Noxious Weed Plan

KRGT has included a revised Noxious Weed Plan with these comments. However, KRGT has demonstrated knowledge of existing populations and does not propose to re-survey the right-of-way prior to construction. Therefore, KRGT requests that part b of this condition be deleted, based upon the comments provided on the subject of pre-construction surveys provided with the comments to Pages 4-96 and 4-97.

A1-96 Page 5-8, Condition 23, "Bird-be Gone" Pipeline Markers

KRGT agrees to fit all pipeline marker signs with bird-be-gone, or similar bird repellant devices on the new loop line in all areas of suitable desert tortoise habitat.

A1-97 Page 5-8, Mitigation Measure 24, Muddy River Crossing

Please see KRGT's comment to Page 4-128 above.

A1-98 Page 5-8, Mitigation Measure 25, Moody Wash and Mogatsu Creek

The requested drawings are provided with these comments.

A1-99 Page 5-9, Mitigation Measure 28, Revised Residential Construction Plan

KRGT has revised the construction corridor to maintain at least 25 feet from the residence at MP 153.89. A revised construction drawing is included with these responses.

A1-100 Page 5-10, Mitigation Measure 30, Noise Surveys

KRGT has agreed to complete the requested noise surveys.

A1-101 Page 5-10, Mitigation Measure 31, Revised O & M Plan

KRGT respectfully disagrees with this condition. Please see our detailed response to Page 4-261.

A1-102 Page 5-10, Mitigation Measure 32, Submittal to CSLC

KRGT has agreed to provide the requested information but notes that only those profiles required for construction will be provided. KRGT does not propose to create profiles for the entire pipeline.

A1-103 Page 5-14, Table 5.1-1, KRGT6, Sealed Drawings

The last sentence of this measure states the following: "All engineered structures would be designed, signed, and sealed by registered professionals."

KRGT interprets this to mean all buildings and similar structures. Other than to meet the demands of the California State Lands Commission stated in mitigation measure 6 (Page 5-15), KRGT does not intend to have all alignment sheets, pipe fabrication

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A1-95 See the response to comment A1-59. Section 5.6 has been revised.

A1-96 See the response to comment A1-62. Section 5.6 has been revised.

A1-97 See the response to comment A1-63. Section 5.6 has been revised.

A1-98 See the response to comment A1-65. Section 5.6 has been revised.

A1-99 See the response to comment A1-69. Section 5.6 has been revised.

A1-100 See the response to comment A1-77. Section 5.6 has been revised.

A1-101 See the response to comment A1-81. Section 5.6 has been revised.

A1-102 Section 5.6 has been revised.

A1-103 This response appears to address mitigation measure KRGT5 not KRGT6 in table 5.1-1 of the draft EIS/EIR. In California, the CSLC requires all engineered structures, including pipeline alignment sheets, buildings and other structures, profile drawings wherever necessary, and other appurtenances and associated facilities in California, to be designed, signed, and sealed by California-registered professionals certified to perform such activities in the jurisdiction where the facilities would be located.

A1-103 (cont'd) drawings, and similar documents signed and sealed by registered professionals. KRGT will have all building designs signed and sealed by registered professionals.

A1-104 Pages 5-17 and 5-18, Table 5.1-1, Topsoil Segregation

KRGT recommends this condition be deleted and the standard FERC requirement included in Part V.5 of he UECRM Plan be adopted instead as further addressed in KRGT's comments to Page 4-38, Paragraph 2.

A1-105 Page 5-22, Table 5.1-1, KRGT 19, Mitigation Column, Paragraph 1

KRGT requests the requirement to segregate topsoil on all lands where topsoil is present, "unless otherwise requested by the landowner" be deleted from this mitigation measure. KRGT proposed to adopt the standard FERC Guidelines of the UERCM Plan as further explained in its comments to Page 4-38, Paragraph 2, Topsoil Segregation.

A1-106 Page 5-32, Table 5.1-1, Mitigation Measure 43, Muddy River

Please refer to KRGT's comments to Page 4-60 above. KRGT now proposes to dry flume the Muddy River to provide a higher degree of protection in minimizing the re-suspension of potentially contaminated sediments based on recent consultation and concurrence from the USFWS.

A1-107 Page 5-38, Table 5.1-1, KRGT 48, Mitigation Column, Paragraph 2

KRGT notes that the salvage and transplant of larger Joshua trees and cholla cactus, or button cacti or agave less than 6 inches in height may not be feasible. KRGT recommends that these exception to be included.

Please also refer to KRGT's comments to Page 4-81, Paragraph (3rd bullet), Salvage and Transplanting of Succulents.

A1-108 Pages 5-40 and 5-41, Table 5.1-1, KRGT 48, Mitigation Column (12th bullet), Paragraph 2, Desert Reclamation

The text indicates that success of large-scale desert reclamation efforts is largely dependent on favorable climatic conditions that cannot be significantly or partially manipulated at this scale. For this reason, for the southern portions where the pipeline facilities would be located within the Mojave Desert, including southern Utah, all of Nevada, and California, there is varying opinion regarding acceptable success criteria for the revegetation of similar type of projects.

However, BLM has adopted qualitative and quantitative monitoring criteria to determine revegetation success in the desert portion recently developed by the BLM, Las Vegas Office for the Mojave Desert. KRGT is continuing to consult with the BLM to develop monitoring plans and performance criteria for the Project. This is further described in KRGT's comments to Page 4-73, Paragraph 2, Significance Criteria for Regeneration; Page 4-84, Paragraph 1; and Pages 4-85 and 4-86, Table 4.5.2-3.

Applicant 1

A1-104 See the response to comment A1-58. Table 5.1-1 has been revised.

A1-105 See the response to comment A1-58. Table 5.1-1 has been revised.

A1-106 See the response to comment A1-39. Table 5.1-1 has been revised.

A1-107 See the response to comment A1-48. Table 5.1-1 has been revised.

A1-108 See the responses to comments A1-45 and A1-49. Table 5.1-1 has been revised.

A1-109 Pages 5-41 and 5-42, Table 5.1-1, KRGT 50, Mitigation Column, Paragraph 1 and 2, Utah Reclamation Plan

The text indicates that seeding would be conducted throughout Utah with the exception of the extreme southern portion of the route within the Mojave Desert. Seeding is not considered effective for large-scale treatments within desert habitats and therefore is generally not proposed within the desert areas of the state. Whereas KRGT does not disagree with this comment, as the consensus on the practical effectiveness of direct seeding varies, KRGT has adopted recommendations of BLM and included the Mojave Desert Portion of Utah for direct seeding. KRGT recommends Mitigation Measure 50 be revised to reflect these Plan revisions. Please also refer to KRGT's comments to Page 4-84, Paragraph 1, and Pages 4-85 and 4-86, Table 4.5.2-3, Utah Seed Mixes.

A1-110 Pages 5-43 and 5-44, Table 5.1-1, KRGT 52, Mitigation Column, Paragraphs 1 and 2, Nevada Reclamation Plan

The text indicates that seeding generally would not be conducted within the Mojave Desert in Nevada, except in Desert Tortoise Critical Habitat where 20 percent of the desert tortoise critical habitat and all of the Red Rock Canyon National Conservation and Spring Mountain National Recreation areas. KRGT has more recently revised its Nevada Reclamation Plan, which has been submitted to BLM for additional review, and recommends Mitigation Measure Number 52 be revised accordingly to include direct seeding of all desert critical habitat and other multiple use areas. KRGT anticipates completing the final Nevada Reclamation Plan from this additional agency review and filing it by the close of the DEIS/EIR comment period.

A1-111 Page 5-44, Table 5.1-1, KRGT 52, Mitigation Column, Permeon™ and Rearranging Boulders

The text indicates that KRGT will treat the north-facing slope (MP 556.6) in the vicinity of Wilson Tank and the area between MPs 557.3 and 558.2 with Permeon™ to reduce visual contrast. As described KRGT's comments to Page 4-88, Paragraph 1 (Permeon™Treatment and Rearranging Boulders), the statement should read that the rocks at MPs 557.3 and 558.2 would be treated with Permeon™.

A1-112 Page 5-45, Table 5.1-1, KRGT 52, Mitigation Column, Revegetation Monitoring

The text indicates that KRGT will monitor the construction right-of-way within the Red Rock Canyon NCA for a period of 7 years to determine revegetation success. KRGT has adopted a 6-year revegetation monitoring period as described in KRGT's comments to Page 4-73, Paragraph 2, Significance Criteria for Revegetation, and recommends this change be noted.

A1-113 Pages 5-45 and 5-46, Table 5.1-1, KRGT 53, Mitigation Column, Paragraph 1; and ARM 10, Mitigation Column, California Reclamation Plan

The California Reclamation Plan has been revised and will be submitted to the BLM and CSLC for additional review. The revisions include direct seeding of all desert tortoise critical habitat and other newly disturbed areas, and a revegetation monitoring program with qualitative and quantitative criteria, similar to that developed for Nevada.

Applicant 1

A1-109 See the response to comment A1-49. Table 5.1-1 has been revised.

A1-110 See the response to comment A1-51. Table 5.1-1 has been revised.

A1-111 See the response to comment A1-52. Table 5.1-1 has been revised.

A1-112 See the responses to comments A1-45 and A1-53. Table 5.1-1 has been revised.

A1-113 See the response to comment A1-55. Table 5.1-1 has been revised.

A1-113 (cont'd) KRGT expects to be able to complete the final California Reclamation Plan with this additional agency review and input and file this Plan by the close of the DEIS/EIR comment period. Please also refer to KRGT's comments to Page ES-9, Paragraph 3, Reclamation Plans for the Desert Portion.

A1-114 Pages 5-51 and 5-52, ARM 11, Noxious Weeds

Please refer to KRGT's comments to Pages 4-96, 4-97 and 5-8, Condition Number 22.

A1-115 Page 5-69, KRGT 93, Burrowing Owl Mitigation

Please see KRGT's comment to Page 4-136 above.

A1-116 Page 5-95, Table 5.1-1, KRGT 150, Mitigation Column, Visual Impact Mitigation

As described in KRGT's comments to 1 4-196, Paragraph 4, Visual Mitigation, KRGT does not plan to feather or taper the construction right-of-way during right-of-way preparation for the purpose of creating irregular boundaries to blend in with surrounding areas, and recommends feathering and tapering be deleted from this mitigation measure for these purposes. However KRGT does plan to arrange the special plantings, along with exposed boulders or rock faces, etc. in clusters or more natural patterns along the outer portions of the right-of-way to achieve similar objectives.

A1-117 Volume II, Appendix C, Table C-1

KRGT has identified six additional route deviations and/or non-standard parallel offsets since the October 24, 2001 submittal of scope changes. KRGT requests these route variations be included in Appendix C, Table C-1, and Table 3.3.6-1 as appropriate, and further request approval to construct the facilities as proposed. KRGT is providing a table with these comments that describe the new minor route variations. Preliminary alignment sheets depicting each route deviation are included with this response.

A1-118 Volume II, Appendix D, Table D-1

KRGT has made minor adjustments to the ATWS table submitted October 24, 2001 to reflect changes in wetland variance requests, accommodate needed route variations and adjust or correct mileposting. A revised ATWS table is included with these comments. KRGT requests the revised ATWS table be included in the FEIS/EIR and further request approval to construct the facilities as proposed.

A1-119 Volume II, Appendix D, Table D-3

KRGT has modified the list of pipe storage, offloading sites and contractor yards from the list submitted on October 24, 2001. These modifications were required to reflect the status of landowner negotiations, and railroad operators regarding the ability of certain sections of track to accommodate pipe hauling. A revised table is included with these comments. KRGT requests the revised table be included in the FEIS/EIR and further request approval to use the sites on the revised table. Site location maps for those facilities not previously submitted are included with these comments.

Applicant 1

A1-114 See the responses to comments A1-58, A1-59, and A1-95. Table 5.1-1 has been revised.

A1-115 See the response to comment A1-64. Table 5.1-1 has been revised.

A1-116 See the response to comment A1-70. Table 5.1-1 has been revised.

A1-117 Table C-1 in appendix C has been revised.

A1-118 Table D-1 in appendix D has been revised.

A1-119 Table D-3 in appendix D has been revised.

A1-120 Volume II, Appendix K, Paleontological Resource Mitigation Plan

KRGT requests the plan currently in Appendix K be replaced with the revised plan that incorporates additional agency comment.

A1-121 Volume II, Appendix P, Table P-1

KRGT has modified the location of hydrostatic test water discharge sites to ensure discharge occurs within the same basin from which the water is withdrawn. A revised table is included with these comments. KRGT requests the revised table be included in the FEIS/EIR and further request approval to use the sites on the revised table.

Applicant

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A1-120 See the response to comment A1-27.

A1-121 Table P-1 in appendix P has been revised.

Appellant

Abstract

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Federal Energy Regulatory Commission
Washington, DC 20426

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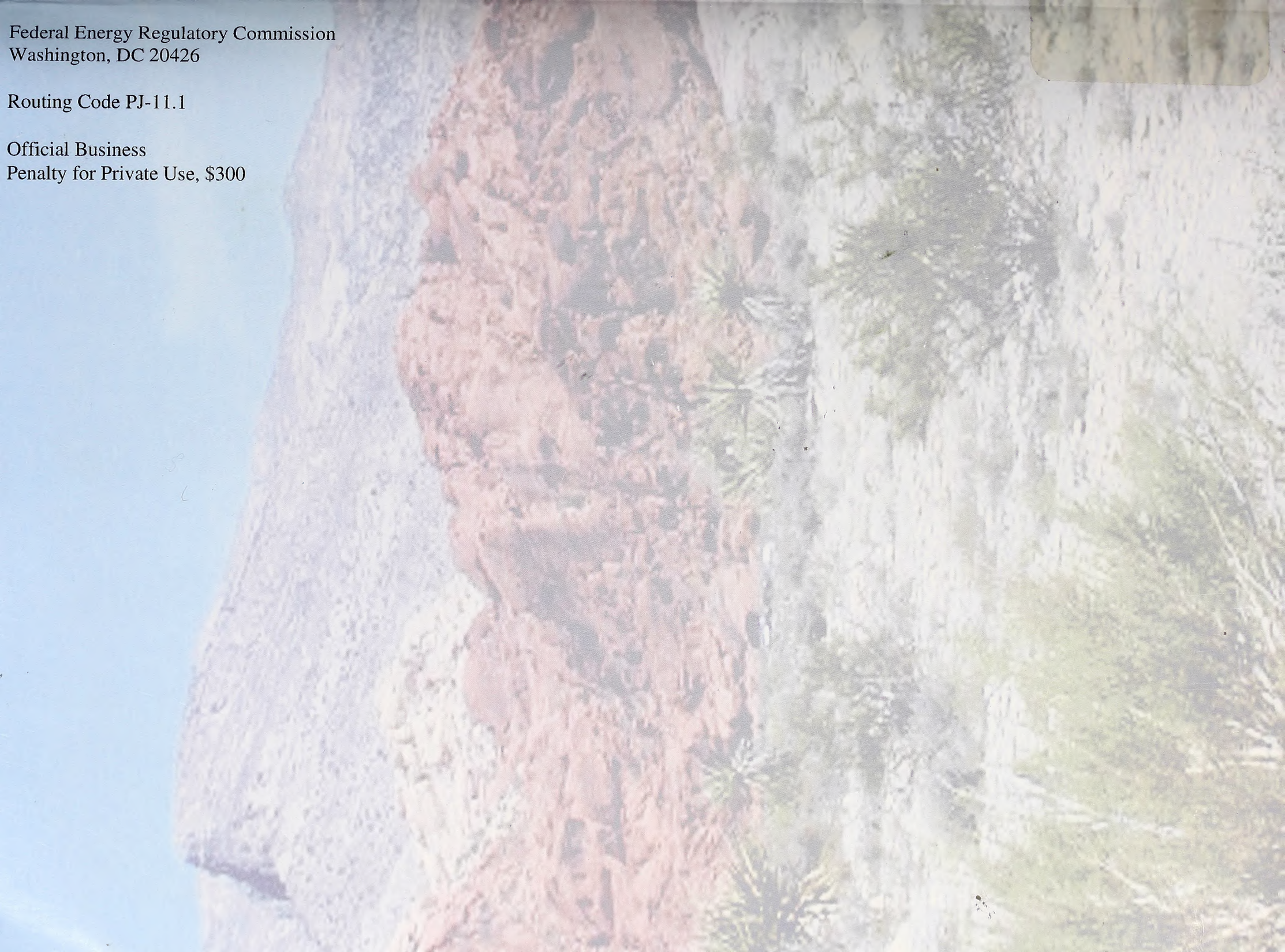
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