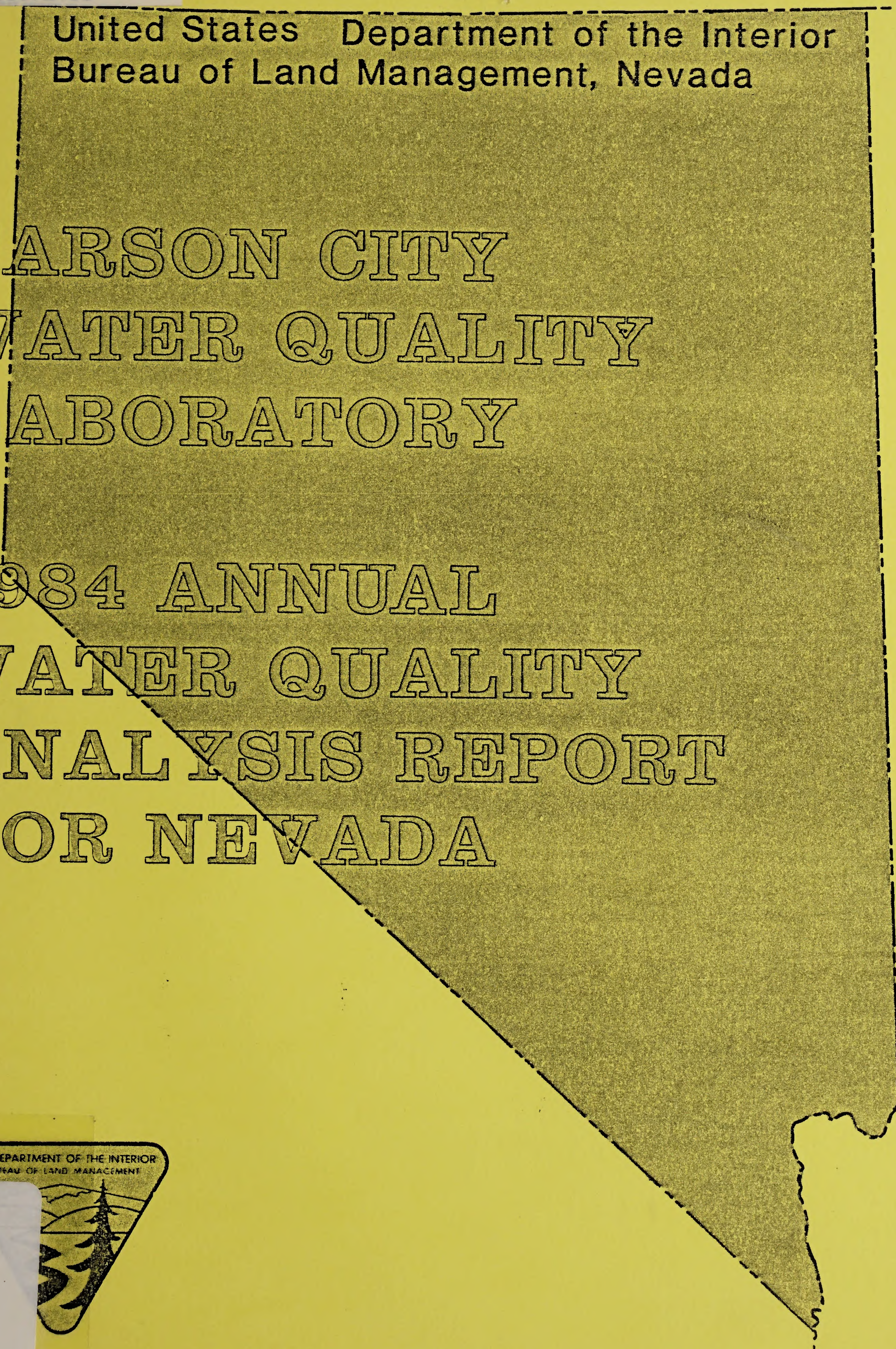
United States Department of the Interior
Bureau of Land Management, Nevada



CARSON CITY WATER QUALITY LABORATORY

1984 ANNUAL WATER QUALITY ANALYSIS REPORT FOR NEVADA

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
CARSON CITY NEVADA WATER QUALITY LABORATORY
1984 ANNUAL WATER QUALITY ANALYSES REPORT FOR NEVADA

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JULY, 1985

NEVADA PLANNING-TECHNICAL

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I would also like to thank Dick Jewell, BLM State Hydrologist, for the assistance he provided in collection and transportation of water samples to the Carson City Office laboratory.

The continued support and encouragement of Thomas Owen, District Manager; Norman Murray, Assistant District Manager, Resources; Mike Phillips, Lahontan Area Manager; and John Matthiessen, Walker Area Manager, all of the Carson City BLM District are also acknowledged.

The support and participation of each Nevada BLM district and the two adjoining California districts in the planning, coordination and collection of water samples is appreciated. The personnel responsible for this effort are:

Elko District	Don Siebert
Winnemucca District	Chris McAuliffe Dennis Tol
Carson City District	M. Bashir Sulahria David M. Schafersman
Ely District	Pete Porfido
Las Vegas District	Mark Van Derpuy Kevin Leary

Battle Mtn. District	Craig Westenburg Mark O'Brien
Susanville District	George Wingate
Bakersfield District	Patty Gradek

BUR OF LAND MANAGEMENT
CARSON CI [illegible] OFFICE

MAY 18 12 33 PM '84

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
Capitol Complex
CARSON CITY, NEVADA 89710
Telephone (702) 885-4670

May 17, 1984

Bashir Sulahria, Hydrologist
Bureau of Land Management
1050 East William Street
Carson City, NV 89701

Greetings:

Interim approval of this analytical facility for the analysis of water and wastewater was granted on 5 April 1983. During this past year, additional analytical practice has been done and a tentatively acceptable Quality Assurance Document has been submitted. It is the purpose of this letter to modify the current status from interim approval to full approval for the listed constituents. This approval is to endure for two (2) years of this date unless revoked for cause.

The Quality Assurance Officer of the Division of Environmental Protection accepts, and recommends to other agencies or persons to accept, analytical data reported by the BLM Carson City Analytical Facility for the following constituents and parameters: temperature, dissolved oxygen, specific conductance, hydronium activity, alkalinity, phosphorus (ortho and total), chloride, turbidity, suspended solids, dissolved solids, nitrate and coliform bacteria.

Respectfully,

Harry van Drielen

Harry van Drielen
Quality Assurance Officer

HvD/nd

SUMMARY

This report contains the 1984 annual water quality analysis results for samples collected in Nevada and two adjoining areas of California. The report includes all analyses which meet the quality assurance standards established by the Carson City Water Quality Laboratory's quality assurance manual. The Nevada Bureau of Land Management watershed program has established a comprehensive water quality monitoring program on a statewide basis to collect water quality information on public lands for several reasons: 1) to acquire base line data; 2) to interpret water quality data for BLM planning documents and management plans; 3) to comply with the State of Nevada's "208" water quality management and implementation plan; and 4) to determine suitability for beneficial uses of water on public lands. The Carson City District Office (CCDO), under a memorandum of understanding, acquired the use of a water laboratory from the State Division of Environmental Protection (DEP). With DEP's assistance the laboratory has been instrumented and calibrated. Sufficient personnel training, as well as, quality assurance documentation, has been obtained to qualify for State certification (page iii).

All six Nevada BLM districts and the Nevada BLM State Office (NSO) along with two California districts -- Susanville and Bakersfield -- participated in the planning, collection, transportation and analysis of the water samples. Sample collection was performed by each participating district, with advice and assistance, from the CCDO laboratory and NSO. Field measurements for flow, temperature, dissolved oxygen, electric

conductivity and pH were taken. The water samples were transported to the CCDO laboratory. They were analyzed within Environmental Protection Agency's holding time requirements and in compliance with the laboratory's quality assurance manual for alkalinity (carbonates and bicarbonates), chlorides, turbidity, nitrate nitrogen, total phosphates, fecal coliform and total coliform bacteria.

The purpose of this report is to consolidate statewide water quality data and provide districts guidelines and criteria to interpret such information. It is hoped that this document will be useful to the districts in the identification and assessment of water quality problems on public lands.

INTRODUCTION

In 1972, when the Clean Water Act (PL 92-500) was passed and subsequently amended in 1977 (PL 95-217), national policy and direction regarding the maintenance and/or enhancement of water quality for the nation's waters was set forth.

The BLM, under the mandates of sections 208 and 313 of the Clean Water Act of 1977, Executive Order No. 12088, and the provisions of the Federal Land Policy and Management Act of 1976 (FLPMA), is required to comply with the State of Nevada's water quality management and implementation plan. Bureau commitment and responsibility is further emphasized by the Memorandum of Understanding (MOU) signed by the BLM Nevada State Director in December, 1980, and the Division of Environmental Protection (DEP) of the Nevada Department of Conservation and Natural Resources. Among other things, the BLM has agreed to: (1) continue to develop pollution control and abatement programs which provide for both environmental protection and reasonable resource uses on BLM-administered lands; (2) wherever appropriate, institute best management practices and employ other necessary plans and permit requirements in the development of management framework plans, allotment management plans, grazing permits, etc., for the abatement and control of nonpoint source pollution from public lands and; (3) develop and institute a "208" water quality monitoring and survey program and, (4) upon request, provide the DEP with any available water qualtiy data gathered by BLM.

Based upon these legislative and administrative mandates, the water quality information is required and is important for the following reasons:

1. To collect base line information on water quality on BLM-administered lands.

2. To collect, analyze and interpret water quality data for BLM planning documents and management plans.

3. To gain some understanding of the quality of water and its suitability for different beneficial uses, e.g., livestock, wildlife, recreation, fisheries, mining, etc., occurring on BLM-administered lands.

4. To comply with the State of Nevada's "208" water quality management and implementation plan which requires pollution assessment, routine monitoring and amelioration and/or abatement of nonpoint source pollution occurring due to Bureau's or Bureau-authorized activities.

WATER LABORATORY

The Carson City District acquired the water laboratory from the Division of Environmental Protection (DEP) of the Nevada Department of Conservation and Natural Resources in 1980.

The laboratory is in the CCDO wareyard and both BLM and DEP have access to the use of laboratory facilities. State certification was obtained in 1983 and has been renewed in 1984 after proper instrumentation, calibration and sufficient personnel training. The laboratory is operated under the strict criteria and guidelines as set forth in the Quality Assurance Document (Nevada Planning - Technical Document No. BLM CCPT40137152) and is a part of the State requirements for certification. Under this certification, the CCDO laboratory is authorized to analyze the following parameters and constituents:

Temperature
Dissolved Oxygen
Specific Conductance
Hydronium Activity
Alkalinity
Phosphorus - Ortho
Phosphorus - Total
Chloride
Turbidity
Suspended Solids
Dissolved Solids
Nitrate
Coliform Bacteria

All six Nevada BLM districts and two California districts participated in the water quality sampling and analysis program. In consultation with each district the 1984 schedule was predetermined to sample three times

to coincide with high, mid-summer, and low flows. The districts were provided with sample bottles, appropriate preservatives, field sheets, necessary instructions and field equipment, in some cases.

Field measurements for flow, temperature, dissolved oxygen, electric conductivity and field pH were taken and recorded on the field sheets. The samples were ice packed and transported to the CCDO laboratory either by air or by road to meet EPA's holding time requirements. Some samples taken for heavy metals were sent to Sierra Environmental Monitoring Inc. in Reno, Nevada for analysis.

METHODOLOGY AND ANALYSES

All the laboratory equipment was checked and tested for accuracy before the samples were received. In order to keep the laboratory records accurate and in order, each sample was serialized, and the district name, date and time of collection, date and time of analysis, elapsed time between sampling time and the analysis, and the name of the analyst were recorded for each analysis. All the analyses were done using the analytical methods which are in accordance with the Standard Methods for the Examination of Water and Wastewater, 14th Edition (Table 1). All the analytical methods used in the field and the laboratory are constrained by certain detection limits. These limits are listed in Table 2.

WATER QUALITY DATA ANALYSIS AND INTERPRETATION

The water quality data, both from the field and the laboratory, have been rounded off to significant reportable numbers and are presented in

Appendix A. All the abbreviations used in this appendix are spelled out in Table 3. Also, the following four sets of water quality standards and criteria are provided for comparison and reference:

(1) Quality standards for classified water (Appendix B).
(2) Water quality criteria for designated beneficial uses (Appendix C).
(3) Primary drinking water standards (Appendix D).
(4) Secondary drinking water standards (Appendix E).

Since nearly all sources sampled are environmental waters, the water quality should be compared with Appendix B and classified into A, B, C or D category. Appendix C provides the suitability criteria for different intended beneficial uses, e.g., agriculture, aquatic, bathing and water contact sports, drinking water supply and wildlife propagation. This information can be and should be used as an indicator to determine the suitability for the existing or intended use. Although none of the sampled waters was drinking water, the Primary Drinking Water Standards (Appendix D) and the Secondary Drinking Water Standards (Appendix E) can be used as a yardstick to compare the quality of water to potable standards.

The comparison of water quality of a source against one and/or all the classification, criteria and standards provided in this report will highlight the constituent(s) which exceed the acceptable and safe standards. This type of comparison can be used to analyze the extent of water quality problems and determine whether or not it is technically and

economically feasible to correct such problems by using mitigation techniques i.e., protection, development, and best management practices (BMPs).

The foregoing standards and criteria are used to analyze and interpret the water quality data for the Carson City district. Other districts can use this as an example to interpret the results of their water quality samples based upon type of water and the present and/or the future beneficial use(s).

In Carson City District, 12 sites were selected which were sampled three times in the summer of 1984. These sampling sites are at six creeks, one reservoir and one hot spring. Two of the sources sampled e.g., Rough Creek and Bodie Creek, are interstate (California-Nevada) waters. Indian Creek reservoir is in California and the rest of the sources are in Nevada. The water quality analyses are given in Appendix A, pages 19 to 22. Presently these waters are being used for livestock, wildlife, wild horses and to some extent by dispersed recreationists e.g., hikers, anglers, hunters, backpackers and sightseers.

State of Nevada's criteria for classified waters are used to develop the following table which shows the classification of waters sampled in Carson City District.

Water Classification Table

Source		First Sampling	Second Sampling	Third Sampling
Name	Location			
Rough Creek	N07E2730CC	C	C	C
Rough Creek	N06E2722AC	C	A	A
Rough Creek	N06E2722CB	C	A	A
Bodie Creek	N05E2701BC	C	C	C
Bodie Creek	N06E2724AA	C	C	A
Bodie Creek	N06E2724BA	C	A	
Big Den Creek	N17E3722CD	A	A	A
Willow Creek	N17E3715DD	A		
Edwards Creek	N19E3832AD	D	C	A
Cherry Creek	N19E3705DA	A	A	A
Lee Hot Spring	N16E2934AC	-- not applicable --		
Indian Creek Reservoir	N10E2004	-- not enough data --		

The water quality analyses indicate that these waters meet the water quality criteria and standards as set forth by the United States Environmental Protection Agency (US EPA) and the Nevada Division of Environment Protection (NV DEP) and are suitable for livestock, wildlife, wild horses and dispersed recreation use.

The quality of Carson City water when compared to the primary and the secondary drinking water standards, is remarkably good. In general, these waters and other such waters occurring on BLM-administered lands are of good quality and even can be used for occasional drinking purposes provided there is no bacteriological contamination or the water has been treated for such contamination. The bacteria likely to be present in the water are fecal coliform, total coliform, and streptococcus. The source of these bacteria could be natural and/or caused by man's activities. The presence of such bacteria cannot be determined by grab samples because the number and type of bacteria will depend upon season, type of use and land management practices. These bacteria may cause stomach disorder or even serious illness. Therefore, caution should be exercised, and the water from BLM springs or creeks should only be used for drinking if of utmost necessary. However, such water can be made potable by boiling, chlorination or other chemical treatments.

Lee Hot Springs was tested for minerals and heavy metals. The spring is exceptionally hot (96°C). This indicates that the source is percolated water which gets heated in the geothermally hot substrata before appearing at the suface. The mineral and the heavy metal data (page 20) show the spring water is practically devoid of hazardous minerals and

metals. The water is of good quality and meets all the State and Federal standards.

Although the water is being used for livestock and wildlife on a limited basis, it has the potential for other uses e.g., recreation, hydroponics and fisheries.

In conclusion, the water sources sampled in Carson City district in 1984 are of generally good quality, meet most of the State and Federal standards, are in compliance with Nevada's "208" water quality management and implementation plan and, if needed, selected waters can be made drinkable for outdoor or dispersed recreation.

TABLE 1

Analytical Methods

Constituent	Procedure
Dissolved Oxygen	Electrometric Hach Model Number 16046
Conductivity	Electrometric Hach Mini Conductivity Meter
Field pH	Electrometric Hach pH Meter Model 17200 or Comparable Instrument
Lab pH	Electrometric Altex 71 Ion Analyzer
Alkalinity Bicarbonate	Potentiometric Titration
Alkalinity Carbonate	Potentiometric Titration
Chloride	Titration
Turbidity	Nephlometric 90° Hach Model Number 16800
Nitrate-N	Colorimetric Brucine
Phosphate-Ortho	Colorimetric Ascorbic Acid
Phosphate-Total	Colorimetric Ascorbic Acid
Coliform Total	Membrane Filtration
Coliform Fecal	Membrane Filtration
Arsenic	Atomic Absorption, Hydrid Generation
Mercury	Atomic Absorption Flameless
Zinc	Atomic Absorption Flame
Manganese	Atomic Absorption Flame
Iron	Atomic Absorption Flame
Copper	Atomic Absorption Flame

TABLE 2

Detectable Limits

Constituent	Detection Limit	
Dissolved Oxygen	0-20	mg/1
Conductivity	0-10000	Mmhos/cm
Field pH	0-14	
Lab pH	0-14	
Alkalinity Bicarbonate	1-1000	mg/1
Alkalinity Carbonate	1-1000	mg/1
Chloride	1-1000	mg/1
Turbidity	0.1-500	ntu
Nitrate-N	0.1-50	mg/1
Phosphate-Ortho	0.1-50	mg/1
Phosphate-Total	0.1-50	mg/1
Coliform-Total	Variable	#/100 ml
Coliform-Fecal	Variable	#/100 ml
Arsenic	0.005 and above	mg/1
Mercury	0.0002 and above	mg/1
Zinc	0.005 and above	mg/1
Manganese	0.04 and above	mg/1
Iron	0.05 and above	mg/1
Copper	0.02 and above	mg/1

TABLE 3

Abbreviations

N19E3833CD	T. 19 N., R. 38 E., Sec. 33 SE¼ of SW¼
gpm	gallons per minute
C°	temperature degree celsius
mg/l	milligrams per liter
Mmhos/cm	micro mohs per centimeter
HCo_3	bicarbonate
Co_3	carbonate
NTU	nephelometric turbidity unit
Nitrate-N	Nitrate nitrogen
O-Phosphate	Ortho-phosphate
T-Phosphate	Total-phosphate
ƒ/100 ml	Count per 100 milliliter
ND	not detectable
TNTC	too numerous to count
<	less than
0	constituent analyzed result was zero
blank	either sample was not taken or constituent was not analyzed

APPENDIX A

WATER QUALITY DATA

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Elko
First Sampling

Year: 1984
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Source Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/l)	Alkalinity (CO3) (Mg/l)	Chlorides (mg/l)	Turbidity (NTU)	Nitrate-N (mg/l)	T-Phosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Tenmile Canyon	N33E5620BB	04-24	1000	11200	9	9.8	310	8.2	8.2	150	0	19	32	0.9	0.2		
Corral Creek	N28E5613AB	04-24	1200	3136	9	11.0	200	8.2	8.3	104	ND	ND	26	1.8	0.5		
Spring Creek	N33E5612CB	04-24	0900	672	12	11.2	350	8.6	8.4	164	ND	19	17	0.1	0.2		
Pearl Creek	N28E5624DA	04-24	1300	3584	10	10.5	340	8.5	8.3	196	ND	ND	33	1.1	0.2		
Dixie Creek	N32E5426CA	04-24	1100	20160	8	12.3	185	8.0	8.0	74	0	11	585	1.6	1.2		
Dorsey Creek	N37E5529DC	04-24	1100	22400	5				7.6	66	0	7	833	1.4	0.4		
Jackstone Creek	N36E5629AB	04-24	0900	22400	5				7.6	46	0	13	110	1.4	1.1		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Elko
Second Sampling

Year: 1984
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Source Name	Source Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/l)	Alkalinity (CO3) (Mg/l)	Chlorides (mg/l)	Turbidity (NTU)	Nitrate-N (mg/l)	T-Phosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Tenmile Canyon	N33E5620BB	06-26	0900	11200	18		340	8.1	8.1	234	0	14	12	1.2	0.1		
Corral Creek	N28E5613AB	06-26	1200	5958	16		200	8.5	8.6	148	2	ND	24	1.2	0.3		
Spring Creek	N33E5612CB	06-26	0900	1747	20		190	9.6	9.5	14	24	25	55	1.3	0.4		
Pearl Creek	N28E5624DA	06-26	1300	8780	14		180	8.2	8.3	148	8	ND	6	1.2	0.4		
Dixie Creek	N32E5426CA	06-26		9721	19		200		8.2	94	ND	17	33	1.5	0.4		
Jackstone Creek	N36E5629AB	06-26	1400	4488	28				8.6	68	2	27	9	0.6	0.4		
Mary's Creek	N32E5105DB	06-26	1000	1795	23				8.1	168	0	11	3	1.5	0.6		
Sherman Creek	N35E5606CD	06-26	1300	1346	28				8.5	62	ND	30	5	0.7	0.6		
B.R. Jane Creek	N31E5106AB	06-26	1100	1616	27				8.5	190	6	110	4	1.2	0.1		
Susie Creek	N33E5306BB	06-26	1200	3590	30				8.6	168	4	22	28	0.7	0.4		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Elko
Third Sampling

Year: 1984
Page 1 of 1

Parameter / Source: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/l)	Alkalinity (CO3) (Mg/l)	Chlorides (mg/l)	Turbidity (NTU)	Nitrate-N (mg/l)	T-Phosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Tenmile Canyon	N33E5620BB	09-18	0900	1344	13		325	8.2	8.3	136	ND	21	53	ND	0.4		
Corral Creek	N28E5613AB	09-18	1200	2240	14		275	8.7	8.7	140	10	5	10	ND	0.2		
Spring Creek	N33E5612CB	09-18	0900	1800	13		250	8.5	8.4	98	ND	24	11	0.4	ND		
Dixie Creek	N32E5426CA	09-18	1000	448	17		350	8.8	8.9	159	14	30	6	0.2	ND		
Jackstone Creek	N36E5629AB	09-18	1200	561	22				9.1	70	6	27	5	ND	0.3		
Mary's Creek	N32E5105DB	09-18	1000	359	14				8.0	212	0	13	2	0.5	0.4		
Sherman Creek	N35E5606CD	09-18	1300	449	22				8.7	86	4	36	2	0.1	0.5		
Susie Creek	N33E5306BB	09-18	1100	4488	19				8.7	142	10	27	11	ND	0.2		
B.R. Jake Creek	N31E5106AB	09-18	1000	224	13				8.6	202	8	92	3	0.6	ND		
Pearl Creek	N28E5624DA	09-18	1200	1792	13		290		8.2	83	164	ND	ND	2	ND		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Carson City
First Sampling

Year: 1984
Page 1 of 2

Source / Parameter: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Rough Creek	N07E2730CC	05-22	1000	8960	14	11.2	320	8.4				10		1.0	0.6	8235	20
Rough Creek	N06E2722AC	05-22	1100	8064	13	12.2	100	7.8	7.8	42	0	ND	49	0.9	0.5	2160	10
Rough Creek	N06E2722CB	05-22	1100	8064	13	12.3	100	7.8	7.9	42	0	ND	48	1.0	0.4		
Bodie Creek	N05E2701BC	05-22	1300	4032	18	11.8	200	7.9	8.2	64	ND	ND	32	0.3	0.5		
Bodie Creek	N06E2724AA	05-22	1300	4032	16	11.0	190	8.2	8.2	66	ND	ND	21	0.3	0.6		
Bodie Creek	N06E2724BA	05-22	1200	3584	18	12.0	160	8.2	8.4	72	ND	6	36	0.8	0.5		
Big Den Creek	N17E3722CD	05-22	1000	1344	9	9.9	87		7.7	44	0	6	24	1.9	0.3	810	1
Willow Creek	N17E3715DD	05-22	1100	1792	8	10.0	110		7.8	40	0	6	9	1.2	0.2		
Edwards Creek	N19E3832AD	05-22	1300	4480	14	8.9	120		7.9	66	0	24	308	1.8	1.7		
Cherry Creek	N19E3705DA	05-22	1300	6720	14	8.3	120		8.0	48	0	17	20	1.9	0.3		
Lee Hot Spring	N16E2934AC	05-22	1500	20	96		2400	7.6	7.7	102	0	710	5	1.7	ND		
Indian Creek Reservoir	N10E2004	05-22	1600													0	2

SIERRA ENVIRONMENTAL MONITORING
WATER QUALITY ANALYSIS RECORD

PROJECT NAME Bureau of Land Management

J.N. 383-734

1050 East William Street Carson City, NV 89701

SAMPLE IDENTIFICATION NO.			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	STATION NO.	Arsenic	Copper	Iron	Magnesium	Manganese
MON DAY YR	0-2400		UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l
5-22-84	14:57	Lee Hot Spr.	0.04	<0.02	<0.02	0.6	0.05
			Mercury	Zinc			
			Units: mg/l	Units: mg/l			
5-22-84	14:57	Lee Hot Spr.	0.001	<0.01			

Lee Hot Springs - Carson District

SAMPLES BY : D. Schatersman - Carson District

ANALYSIS BY: J. Seher APPROVED BY: John Seher

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Carson City
Second Sampling

Year: 1984
Page 1 of 1

Parameter Source Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Rough Creek	N07E2730CC	07-25	1600	1050	28		120	8.6	8.7	166	8	14	29	0.6	0.8	8100	10
Rough Creek	N06E2722AC	07-25	1500	2604	26		76	8.5	8.7	54	2	5	10	1.7	0.3	5940	0
Rough Creek	N06E2722CB	07-25	1400	2337	25		76	8.5	8.5	54	2	ND	8	0.7	0.3	4995	0
Bodie Creek	N05E2701BC	07-25	1300	2096	22		160	8.8	8.7	74	4	7	8	0.7	0.4		
Bodie Creek	N06E2724AA	07-25	1200	2240	19		145	8.4	8.4	80	ND	6	7	1.1	0.4		
Bodie Creek	N06E2724BA	07-25	1300	672	27		240	9.5	9.5	48	30	11	11	0.7	0.3		
Big Den Creek	N17E3722CD	07-25	1100	336	12		102		7.9	36	0	7	8	2.9	0.1	1350	0
Edwards Creek	N19E3832AD	07-25	1200	980	16		280		8.1	64	0	34	13	1.0	0.4		
Cherry Creek	N19E3705DA	07-25	1500	896	18		180		8.1	52	0	20	5	1.2	0.2		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Carson City
Third Sampling

Year: 1984
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Parameter / Source: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
ough Creek	N07E2730CC	09-26	1100	896	8	11.7	440	8.6	8.6	212	8	13	10	0.2	0.8		8
ough Creek	N06E2722AC	09-26	1200	1120	8	13.2	125	8.8	7.2	50	0	ND	8	0.3	0.2		4
ough Creek	N06E2722CB	09-26	1200	1120	10	11.9	140	8.4	8.2	60	0	ND	9	0.2	0.2		
odie Creek	N05E2701BC	09-26	1300	224	12	11.8	220	8.0	8.4	90	ND	5	8	0.5	0.4		
odie Creek	N06E2724BA	09-26	1200	224	13	11.4	180	8.0	7.2	82	0	7	11	0.6	0.3		
ig Den Creek	N17E3722CD	09-26	1100	150	9	8.2	119	7.7	6.8	28	0	ND	6	0.3	0.2		2
dwards Creek	N19E3832AD	09-26	1200	400	13	8.4	280	8.2	8.1	70	0	26	3	0.3	0.3		
herry Creek	N19E3705DA	09-26	1300	1000	15		290	8.2	8.1	56	0	17	3	0.4	0.2		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Winnemucca
First Sampling

Year: 1984
Page 1 of 2

Parameter Source Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HC03) (mg/l)	Alkalinity (C03) (Mg/l)	Chlorides (mg/l)	Turbidity (NTU)	Nitrate-N (mg/l)	T-Phosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Goldrun Creek	N34E4021CC	04-24	1400	10821	10				7.9	70	0	27	46	1.1	0.6		
Sulphur Spring	N35E2935BB	04-24	1400	6	19		1650		7.4	840	0		59				
Black Knob Spr.	N28E3431DB	04-24	1300	6	16		670		7.6	106	0	150	15	1.1	ND		

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Bureau of Land Management
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District Office
Carson City, NV

SIERRA ENVIRONMENTAL MONITORING
WATER QUALITY ANALYSIS RECORD

PROJECT NAME Bureau of Land Management J.N. 383-734

1050 East William Street Carson City, NV 89701

SAMPLE IDENTIFICATION NO.			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	STATION NO.	Cyanide	Mercury			
MON DAY YR	0-2400		UNITS mg/l	UNITS mg/l	UNITS	UNITS	UNITS
4-24-84	14:09	21 CC	∠0.005				
4-24-84	13:45	35 BB	∠0.005	∠0.0005			
4-24-84	13:00	31 DB	∠0.005				
		21 CC	= N34 E40 -	21CC	Gold Run Creek	Winnemucca District	
		35 BB	= N35 E29 -	35BB	Sulfur Springs		
		31 DB	= N28 E34 -	31DB	Black Knob Spring		

SAMPLES BY: BLM Staff - Winnemucca

ANALYSIS BY: J. Seher

APPROVED BY:

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Winnemucca
Second Sampling

Year: 1984
Page 1 of 2

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
NF Little Humbolt River	N42E4328CC	06-12	1600	26880					7.8	50	0	14	64	1.2	0.6	TNTC	0
SF Little Humbolt River	N41E4401CA	06-12	1500	500					7.6	48	0	16	60	1.4	0.5	5260	10
Goldrun Canyon	N34E4021CC	06-12	1500	2200	14			8.4	7.1	102	0	100	52	1.4	0.6	12361	100
Clear Creek	N34E2234BC	06-12	1200	45	11		280		7.9	90	0	37	26	0.4	0.2	13676	270
Sulphur Spring	N35E2935BB	06-12	1400	25	22		1800		7.4	844	0	210	20	0.7	0.2		
Sonoma Creek	N34E2820BD	06-12	1500	6600	15			9.1	7.2	110	0	13	8	0.6	0.1	2630	0
Pollard Creek	N31E4031AB	06-12	1100	3534	11				8.6	136	24	42	7	1.0	ND	3900	30
Willow Creek	N36E2311AD	06-12	1000	610	14		280		8.5	150	26	19	24	0.8	0.5	3682	0
Bill Creek	N44E3234CC	06-12	1200	57200					7.8	64	0	11	355	1.2	2.6	27352	10
Big Creek	N44E3022AD	06-12	1300	11880					7.7	58	0	11	29	1.4	0.3	4734	20
Jackson Creek	N40E3435BA	06-12	1500	8800					8.8	114	16	47	13	1.3	0.1	6838	90
Rocky Canyon	N29E3303AC	06-12	1100	3366	11				8.4	116	10	24	6	0.7	0.1	3700	0

SIERRA ENVIRONMENTAL MONITERING

WATER QUALITY ANALYSIS RECORD

PROJECT NAME U. S. Dept of the Interior, Bureau of Land Management | J.N. 383-734

Winnemucca District

SAMPLE IDENTIFICATION Nº			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE	TIME	STATION Nº	Arsenic	Mercury			
MO DAY YR	0-2400		UNITS mg/l	UNITS mg/l	UNITS	UNITS	UNITS
6 - 12 - 84	15:19	Jackson Creek	< 0.003				
6 - 12 - 84	14:10	Sulfur Spring		0.002			

7·10·84

SAMPLES BY: BLM - Winnemucca District

ANALYSIS BY: J. Seher

APPROVED BY:

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Winnemucca
Third Sampling

Year: 1984
Page 1 of 3

Parameter Source Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
NF Little Humbolt River	N42E4328CC	08-21	1000	600									2		ND	789	2
SF Little Humbolt River	N41E4401CA	08-21	0900	800									6		0.2	4208	22
Goldrun Canyon	N34E4021CC	08-21	1600	400	22		840	8.6					2		0.2	TNTC	18
Clear Creek	N34E2234BC	08-21	1200	50	13								1		ND	4208	6
Sulphur Spring	N35E2935BB	08-21	1400	13	22								1		0.2		
Sonoma Creek	N34E2820BD	08-21	1400	75	25		400	8.9					2		ND	5786	4
Pollard Creek	N31E4031AB	08-21	1500	884									2		0.1	3155	22
Willow Creek	N36E2311AD	08-21	1100	10	13								1		ND	7364	0
Bill Creek	N44E3234CC	08-21	1200	10080	16								15		0.4	12887	20
Big Creek	N44E3022AD	08-21	1300	4032	17								2		0.2	4208	4
Jackson Creek	N40E3435BA	08-21	1600	1792	14								2		0.1	1578	38
Rocky Canyon	N29E3303AC	08-21	1600	850									1		ND	2893	0

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Winnemucca
Third Sampling

Year: 1984
Page 2 of 3

Parameter / Source: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Alder Creek	N44E2815CB	08-21	1200	100800	16								15		0.4	12887	20

SIERRA ENVIRONMENTAL MONITORING
WATER QUALITY ANALYSIS RECORD

PROJECT NAME U. S. Department of the Interior - Bureau of Land Management **J.N.** 383-734

Winnemucca District

SAMPLE IDENTIFICATION NO.			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	STATION NO.	Arsenic	Mercury	Cyanide		
MON DAY YR	0-2400		UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS	UNITS
8-21-84	13:40	Sulfur Springs		< 0.0005	< 0.005		
8-21-84	10:00	NFLH	0.004				
8-21-84	16:00	Jackson Creek	< 0.003				

Sulfur Springs N35 E29 35 BB

NFLH = North Fork Little Humboldt N42 E43 27 BC

Jackson Creek N40 E32 31 BB

SAMPLES BY: BLM - B. Brown

ANALYSIS BY: J. Seher **APPROVED BY:** John Seher

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Ely
First Sampling

Year: 1984
Page 1 of 3

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
North Creek	N10E6427B	06-26	1000	448	18				7.0	12	0	ND	7	0.8	0.1		
Upper Gleason Creek	N16E6212D	06-26	1300	30	25		2100	7.7	7.9	284	0	68	2	3.9	ND		
Lower Gleason Creek	N16E6307C	06-26	1300	30	25		2400	4.5	4.6		0	85	390	5.8	4.1		
Silver Creek	N15NE6926C	06-26	1100	403	12				7.7	222	0	18	2	0.7	0.1		
Weaver Creek	N14E6810D	06-26	1000	2692	12				8.0	64	0	7	9	1.2	0.1		
Pineridge Creek	N13E6826D	06-26	1100	670	17				7.6	18	0	ND	13	0.6	0.1		
Goshute Creek	N25E6312CA	06-26	1000	9960	10		420	8.3	8.4	190	4	ND	5	0.6	ND		
Egan Creek	N23E6214AD	06-26	1100	1120	17		340	8.3	8.5	160	4	11	57	1.3	0.3		
Big Indian Creek	N21E6434A	06-26	1100	670	12		400	8.3	8.4	150	ND	7	12	0.9	0.2		
Duck Creek	N21E6325D	06-26	1200	3360	18		330	8.3	8.6	142	6	ND	55	04	0.4		

SIERRA ENVIRONMENTAL MONITORING
WATER QUALITY ANALYSIS RECORD

PROJECT NAME Bureau of Land Management

J.N. 383-734

1050 East William Street Carson City, NV 89701

ELY DISTRICT

SAMPLE IDENTIFICATION NO.			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	STATION NO.	Arsenic	Chromium	Copper	Iron	Lead
MON DAY YR	0-2400		UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l
4-12-84	15:45	Gleason Creek	0.003	< 0.02	37	18	< 0.05
			Mercury	Selenium	Zinc		
			Units: mg/l	Units: mg/l	Units: mg/l		
4-12-84	15:45	Gleason Creek	< 0.0005	< 0.005	3.3		

SAMPLES BY: BLM - Ely Porfido

ANALYSIS BY: J. Seher

APPROVED BY: Approved By: John Seher

SIERRA ENVIRONMENTAL MONITORING

WATER QUALITY ANALYSIS ~~RECORD~~

PROJECT NAME Bureau of Land Management

J.N. 383-734

1050 East William Street Carson City, NV 89701

SAMPLE IDENTIFICATION NO.			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	STATION NO.	Arsenic	Chromium	Copper	Iron	Lead
MON DAY YR	0-2400						
			UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l
4-12-84	15:45	Gleason Creek	0.003	< 0.02	37	18	< 0.05
			Mercury	Selenium	Zinc		
			Units: mg/l	Units: mg/l	Units: mg/l		
4-12-84	15:45	Gleason Creek	< 0.0005	< 0.005	3.3		

SAMPLES BY: BLM - Ely Porfido

ANALYSIS BY: J. Seher

APPROVED BY:

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Ely
Second Sampling

Year: 1984
Page 1 of 2

Parameter / Source: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/l)	Alkalinity (CO3) (Mg/l)	Chlorides (mg/l)	Turbidity (NTU)	Nitrate-N (mg/l)	T-Phosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
North Creek	N10E6427B	09-18	0900	224	14				7.2	14	0	ND	11	0.1	0.1		
Upper Gleason Creek	N16E6212D	09-18	1200	224	17		2200	7.2	7.7	344	0	86	6	6.5	ND		
Lower Gleason Creek	N16E6307C	09-18	1200	224	21		2600	5.1	5.1	12	0	72	244	5.3	3.5		
Silver Creek	N15NE6926C	09-18	1000	1929	13				8.1	224	0	11	4	0.3	ND		
Weaver Creek	N14E6810D	09-18	0900	1196	10				8.1	108	0	7	10	0.2	0.1		
Pineridge Creek	N13E6826D	09-18	1000	672	12				7.5	36	0	ND	14	0.2	0.1		
Goshute Creek	N25E6312CA	09-18	0900	8960	9		390	7.8	8.4	218	4	ND	4	0.5	ND		
Egan Creek	N23E6214AD	09-18	1000	1344	12		410	7.7	8.4	174	2	9	19	1.1	0.1		
Big Indian Creek	N21E6434A	09-18	1100	672	10		460	7.9	7.1	136	0	11	106	0.4	1.1		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Las Vegas
First Sampling

Year: 1984
Page 1 of 2

Name (Source)	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Cold Creek	S18E5501DA	03-13	1120	1400	9		360		7.7	210	0	6	1	0.8	ND	700	0
Willow Creek	S18E5502AB	03-13		1346	12		410		8.1	218	0	ND	2	0.6	ND	405	0
Red Spring	S21E5906CC	03-13	1410	10	18		440		8.6	168	8	72	8	0.7	ND		
Willow Spring	S20E5833CC	03-13	1500	2	17		260		8.1	260	0	380	77	1.8	0.4		
Pine Creek	S21E5816BC	03-13	1530	224	12		440		8.5	150	4	23	1	0.7	ND		
Muddy River	S15E6602AC	03-13			16		1500		7.9	230	0	ND	1	0.7	ND	300	0
Virgin River	S14E7007BC	03-13	1155		15		3000		8.3	262	1	110	92	1.2	0.7	TNTC	430
Panaca Hot Spr.	S02E6804AB	03-13		448	25		340		7.8	84	0	10	1	1.5	ND		
Meadow Valley Wash	S01E6827CB	03-13		224	10		560		8.1	164	0	ND	1	0.3	ND	800	0
Big Spring	S05E6811CA	03-13		448	16		200		8.2	142	0	17	1		ND	4400	0
Clover Creek	S05E6802DC	03-13		1120	12		355		7.6	202	0	10	1	0.9	ND		
Ash Spring	S06E6106BB	03-13		448	31		460		8.3	268	2	17	6	0.7	ND	18600	30

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Las Vegas
First Sampling

Year: 1984
Page 2 of 2

Parameter / Source: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HC03) (mg/1)	Alkalinity (C03) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Ash Spring Chub	S06E6012DA	03-13		3360	21		530		7.9	74	0	6	3	0.6	0.2	TNTC	0

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Las Vegas
Second Sampling

Year: 1984
Page 1 of 2

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (·C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Cold Creek	S18E5501DA	05-07	0900	13440	9	11.2	470		7.6	238	0		1			0	0
Willow Creek	S18E5502AB	05-07	1100	1034	12	13.5	500		7.8			ND		0.9	ND	1578	0
Red Spring	S21E5906CC	05-07	1300	13	19		470		7.6			8		1.0	ND	200	0
Willow Spring	S20E5833CC	05-07	1400	2	18		370		8.8			7		1.5	ND	24722	0
Pine Creek	S21E5816BC	05-07	1700	192	17	8.5	540		7.9	190	0		1				
Muddy River	S15E6602AC	05-07	1400	14120	21		1600	8.5	8.4	250	10	160	88	1.5	ND	TNTC	1800
Virgin River	S14E7007BC	05-07	1300	363552	20		2600	8.0	8.1	230	0	450	230	2.0	0.1	TNTC	200
Panaca Hot Spr.	S02E6804AB	05-07	1300	448	28		440	7.2	7.9	146	0	23	1	1.6	ND	526	0
Meadow Valley Wash	S01E6827CB	05-07	1300	112	18		680	8.2	8.7	156	18	85	7	1.1	ND		
Big Spring	S05E6811CA	05-07	1100	896	16		260	6.6	7.8	92	0	8	2	1.4	ND		
Clover Creek	S05E6802DC	05-07	1100	1344	12		450	7.5	8.1	158	0	27	1	0.9	ND		
Ash Spring	S06E6106BB	05-07	1500	2240	35		530	7.1	7.5	194	0	13	1	1.0	ND		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Las Vegas
Second Sampling

Year: 1984
Page 2 of 2

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Ash Spring Club	S06E6012DA	05-07	1500	4480	27		580	7.6				14		1.2	0.1	14200	140

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Las Vegas
Third Sampling

Year: 1984
Page 1 of 1

Source: Name	Source: Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Cold Creek	S18E5501DA	07-30	1400	100	9			8.2	7.8	234	0	ND	16	0.4	0.2	2300	6
Willow Creek	S18E5502AB																
Red Spring	S21E5906CC	07-30	1200	5	18		595	8.0	7.8	204	0	7.6	3	0.7	ND	1052	4
Willow Spring	S20E5833CC	07-30	1000	25	16		200	8.0	7.2	66	0	7.2	4	0.7	0.1	263	0
Pine Creek	S21E5816BC	07-30	1100	2688	19		385	8.4	8.1	146	0	ND	1.5	0.8	ND	3156	20
Muddy River	S15E6602AC	07-30	1300	65454	25		1000	7.6	7.8	440	0	70	3000	2.3			
Virgin River	S14E7007BC	07-30	1200	359064	28		3000	7.4	7.8	1300	0	160	31600	0.9			
Panaca Hot Spr.	S02E6804AB	07-30	1200	224	29		470	7.2	7.5	140	0	24	6	1.6	ND	8942	30
Meadow Valley Wash	S01E6827CB	07-30	1200	896	25		925	7.4	8.3	240	2	150	120	1.1			
Big Spring	S05E6811CA	07-30	1400	448	16		280		6.7	60	0	12	1	1.5	0.1		
Ash Spring Chub	S06E6012DA	07-30	0900	5600	27		720		8.1	268	0	20	5	0.9	0.1		
Ash Spring	S06E6106BB	07-30	0900	6496	35		530	7.8	7.6	202	0	12	1	1.1	ND	200	6

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Battle Mountain
First Sampling

Year: 1984
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Parameter Source Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HC03) (mg/1)	Alkalinity (C03) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Big Well	N08E5612DA	04-03	1045	100	19		420	7.8	8.1	172	0	23	1	0.8	ND		
Chimney Spring	N17E5516CA	04-03	1135	15	65		840	6.2	7.1	334	0	11	1	0.2	ND		
Storm Spring.	N06E5411AA	04-03	1214	4	27		1100		7.8	542	0	18	1	0.3	ND		
Abel Spring	N06E5423AC	04-03	1230	10	43		1000	6.3	6.9	556	0	17	1	0.6	ND		
South Six Mile Canyon	N08E5011DA	04-03	1410	1000	15		320	84	8.6	142	2	ND	1	0.1	ND		
Eden Creek	N01E5005CA	04-03	1610	440	11		125	7.8	7.9	52	0	ND	5	ND	0.1		
Cottonwood Creek	N26E4126CB	04-03	1245		15		380		8.2	96	0	24	18	0.7	0.3		
Mill Creek	N29E4426BD	04-03	1520		12		380		8.3	144	ND	12	340	1.7	2.5	14200	10
Fish Creek	N27E4226AB	04-03	1400		14		400		8.2	112	ND	34	93	0.7	1.7		

Bureau of Land Management
RECEIVED
JUL 30 1984
District Office
Carson City, NV

SIERRA ENVIRONMENTAL MONITORING
WATER QUALITY ANALYSIS RECORD

PROJECT NAME Bureau of Land Management - Carson District

I.N. 383-734

1050 East William Street Carson City, NV 89701

SAMPLE IDENTIFICATION NO.			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE MON DAY YR	SAMPLE COLLECTION TIME 0-2400	STATION NO.	Magnesium	Manganese	Mercury	Copper	Iron
			UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l
4-3-84	11:35	2	14	< 0.02	< 0.0005	< 0.02	0.04
4-3-84	12:14	3	26	< 0.02	< 0.0005	< 0.02	0.03
4-2-84	12:30	4	28	< 0.02	0.001	< 0.02	0.14
4-3-84	15:20	8	15	0.30	< 0.0005	< 0.02	3.7

			Zinc		
			Units: mg/l		
4-3-84	11:35	2	< 0.01	Chimney Spring	N17E5516
4-3-84	12:14	3	< 0.01	Storm Spring	N06E5411
4-3-84	12:30	4	< 0.01	Abel Spring	N06E5428
4-3-84	15:20	8	0.02	Mill Creek	N28E4405

SAMPLES BY: BLM - Battle Mountain District

ANALYSIS BY: J. Seher

~~Approved By~~:

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Battle Mountain
Second Sampling

Year: 1984
Page 1 of 2

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Big Well	N08E5612DA	06-04	1500	150	21		350	8.0	8.1	172	0	37	6	0.9	0.3		
Chimney Spring	N17E5516CA	06-04	1400	20	62		750	6.7	7.1	328	0	15	2	0.6	ND		
South Six Mile Canyon	N08E5011DA	06-04	1600	300	15	11.2	280	8.6	8.6	112	8	6	5	0.5	ND		
Mill Creek	N29E4426BD	06-04	1200	5376	10		360		8.2	130	0	18	285	2.5	5.8		
Little Fish Lake	N09E4915CB	06-04	1900		15		1400	8.9	8.9	510	50	900	32	1.3	0.3		
Silver Creek	N21E4313AC	06-04	1600	3584	14		400		7.6	182	0	29	170	1.6	1.6		
Boone Creek	N22E4301AA	06-04	1500	2240	14		500		8.4	252	6	27	240	0.6	1.9		
Hall Creek	N23E4504CD	06-04	1400	1792	14		260		8.1	70	0	23	13	0.9	0.2		
Iowa Creek	N23E4434DC	06-04	1500	3136	12		370		8.3	118	ND	40	86	1.3	0.9		

SIERRA ENVIRONMENTAL MONITERING

WATER QUALITY ANALYSIS RECORD

PROJECT NAME U. S. Dept of the Interior, Bureau of Land Management Battle Mountain District

J.N. 383-734

SAMPLE IDENTIFICATION Nº			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE	TIME	STATION Nº	Copper	Iron	Magnesium	Manganese	Mercury
MO DAY YR	0-2400		UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l
6- 4 - 84	12:15	Mill Creek	0.04	12	21	0.84	< 0.0005
6- 4 - 84	13:52	Chimney Spring	< 0.02	0.05	14	< 0.02	0.0005
			Zinc				
			Units: mg/l				
6 - 4 - 84	12:15	Mill Creek	0.10				
6 - 4 - 84	13:52	Chimney Spring	< 0.01				

7·10·'84

SAMPLES BY: BLM - Battle Mountain District

ANALYSIS BY: J. Seher

APPROVED BY:

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Battle Mountain
Third Sampling

Year: 1984
Page 1 of 2

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Tonkin Spring	N23E4401CD	08-14	1200		15		420		7.8	200	0	6	2	0.5	ND		
Pete Hansen Creek	N23E5009AB	08-14	1200	225	17		380		8.7	178	8	ND	3	0.3	ND		
Vinini Creek	N23E5113BD	08-14	1400	450	22		450		8.8	166	12	27	5	0.2	0.1		
Roberts Creek	N22E5012BD	08-14	1500	900	18		400		8.4	214	ND	8	5	0.1	0.1		
Coils Creek	N22E4916AB	08-14	1500	200	25		230		8.8	178	10	30	10	0.2	0.3		

SIERRA ENVIRONMENTAL MONITORING
WATER QUALITY ANALYSIS RECORD

PROJECT NAME U. S. Dept. of the Interior - Bureau of Land Management
J.N. 383-734

Battle Mountain District

SAMPLE IDENTIFICATION NO.			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER
SAMPLE COLLECTION DATE	SAMPLE COLLECTION TIME	STATION NO.	Copper	Iron	Manganese	Zinc	Magnesium
MON DAY YR	0-2400		UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l	UNITS mg/l
8-14-84	11:50	1	0.02	0.08	0.02	0.01	21
8-14-84	12:40	2	0.02	0.08	0.02	0.01	21

1 - Tonkin Spring

2 - no identification given on sample bottle

SAMPLES BY: BLM - Pete Hansen

ANALYSIS BY: J. Seher

APPROVED BY:

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Susanville
First Sampling

Year: 1984
Page 1 of 1

Source / Parameter: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Ditch Near 139 F. Station	N34E1134BC	03-14	1530	448			84		7.5	34	0	ND	36	0.1	0.2		
Grasshopper Spring	N33E1103BC	03-14	1400	3	10		6	6.1	7.5	42	0	ND	2	1.2	ND		
Grasshopper Creek	N33E1110AC	03-14	1500	2240	5		110	6.2	8.1	40	0	ND	8	0.2	0.2		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Susanville
Second Sampling

Year: 1984
Page 1 of 2

Parameter Source Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	O-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Cottonwood Creek	N39E2235	05-24	1000		9				7.6	80	0	17	34	0.8	0.3		
High Rock Creek	N41E2210	05-24	1630						8.0	50	0	17	23	1.0	0.2		
High Rock Creek	N40E2334	05-24	1400		24				8.2	90	ND	19	17	1.0	ND		
Low Rock Creek	N39E2324	05-24	1130						7.8	82	0	21	34	0.6	0.2		
Barber	N39E1613	05-24	1330		14				7.6	32	0	ND	40	1.2	0.2		
Wall Canyon Creek	N38E1922	05-24	0945		13				8.1	76	0	8	31	0.7	0.7		
Sand Creek	N43E1821	05-22	1600		24				8.4	78	ND	6	30	0.4	0.2		
Sand Creek	N43E1803	05-23	1100		17				7.6	92	0	13	22	0.8	0.2		
Bare	N37E1706	05-23	1515		19				9.2	38	4	ND	21	0.5	0.2		
Emerson	N40E1636	05-23	1230		10				7.4	42	0	ND	61	0.5	0.6		
Willow Creek	N30E1407	05-22	1500		24				9.2	116	38	16	10	1.4	2.2		
Buffalo Creek		05-24	1200		17				8.7	122	6	16	7	0.8	0.6		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Susanville
Second Sampling

Year: 1984
Page 2 of 2

Parameter / Source: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HC03) (mg/1)	Alkalinity (C03) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	O-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Upper Smoke Creek	N32E1705	05-22	1130		19				8.4	70	4	ND	22	0.5	0.6		
Hobo Camp	N30E1231	05-25	0830		11				7.8	32	0	ND	8	0.2	1.8		
Lower Smoke Creek	N31E1826	05-24	1400		23				9.0	106	8	9	17	0.8	2.9		
Fitzlugh Creek Below	N41E1327	05-23							7.5		34	0	ND	0.5	0.4	0.1	
Grasshopper Creek	N33E1110	0525			23				8.5	50	ND	ND	2.0	5.0	0.1		
Parsnip Creek	N33E1922	05-24			21				8.7	98	2	6	3.0	0.9	2.6		
Dry Creek at Fire Station	N38E1308	05-23							8.3	50	ND	ND	0.7	1.1	0.3		
Sheep Valley Creek	N36E0933	05-23			24							ND		1.7	0.2		
	N40E1636	05-15			13				8.4	70	ND	ND	0.4	1.2	0.1		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Susanville
Third Sampling

Year: 1984
Page 1 of 1

Parameter / Source Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	T-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Fizlugh Creek Below	N41E1327	8-27							8.7	56	4	ND	1	1.2	0.1		
	N37E1706	8-15			22				9.9	20	22	ND	1	1.8	0.2		
	N43E1821	8-14							9.2	68	18	8	1	1.6	0.1		
Pine Creek	N42E1335	8-24							7.8	40	0	ND	1	0.7	0.3		
	N39E1613	8-15			14				8.0	34	0	ND	1	1.0	0.2		
Cedar Creek Above	N39E1432	8-27							8.8	48	2	ND	3	1.0	0.5		
	N43E1703	8-14			26				9.3	72	8	10	5	1.5	0.2		
	N40E2334	8-08			33				9.4	46	8	8	1	1.6	0.7		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Bakersfield
First Sampling

Year: 1984
Page 1 of 1

Parameter / Source: Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	O-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Cottonwood Canyon Creek	N03E2708DD	05-01	1100	250	10		110	8.2	8.4	68	ND	ND	6	0.8	0.2		
Coyote Spring	N03E2614BC	05-01	1200	150	10		170	8.0	8.0	170	0	5	4	0.7	0.4		
Bridgeport Canyon Creek	N03E2614BC	05-01	1200	372	11		155	8.1	8.1	158	0	7	3	0.8	ND		
Dog Creek	N04E2535BC	05-01	1300	6720	8	9.6	45	7.9	7.5	42	0	ND	5	0.9	ND		0
Virginia Creek	N04E2535BC	05-01	1400	8960	8	9.4	69	7.7	7.4	30	0	ND	3	0.8	ND		0
L. Mormon M. Creek	N04E2631CD	05-01	1500	896	11		125	7.7	7.8	74	0	ND	15	0.9	0.4		
Clear View Canyon Creek	N04E2536AB	05-01	1500	2688	11		220	8.0	7.6	82	0	5	15	0.9	0.4		
Green Creek	N04E2529DD	05-01	1500		7	9.0	22	7.5	7.1	34	0	ND	2	0.9	ND		0
Hot Spring Canyon Creek	N04E2510BC	05-01	1600	70	12		280	8.3	8.4	128	ND	6	33	0.7	0.6		
Travertine Hot Spring	N05E2534CC	05-01	1600	2	64		1400	6.6	8.2	1412	0	270	1	0.7	1.5		
Clark Creek	N05E2526BB	05-01	1700	224	10	8.5	240	8.3	8.2	162	0	8	3	0.9	0.3		
Aurora Creek	N05E2526	05-01	1700	672	9		140	8.2	7.6	78	0	6	19	1.0	0.9		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Bakersfield
Second Sampling

Year: 1984
Page 1 of 2

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	O-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Cottonwood Canyon Creek	N03E2708DD	07-10	1000	37	13		118	8.2	8.3	68	ND	ND	4	0.5	0.1		
Coyote Spring	N03E2614BC	07-10	1100	8	11		290	8.0	8.2	220	0	8	3	0.4	0.4		
Bridgeport Canyon Creek	N03E2614BC	07-10	1100	12	16		90	7.7	8.2	226	ND	9	9	0.4	0.6		
Dog Creek	N04E2535BC	07-10	1200	13	14		70	7.8	7.8	36	0	ND	4	0.5	ND	6575	50
Virginia Creek	N04E2535BC	07-10	1300	8960	16		60	7.6	7.4	14	0	ND	9	0.6	ND	3419	20
L. Mormon M. Creek	N04E2631CD	07-10	1300	40	25		180	7.8	7.2	86	0	ND	47	0.4	0.7		
Clearview	N04E2536AB	07-10	1300	350	26		400	8.2	8.5	166	2	11	17	0.4	0.8		
Green Creek	N04E2510BC	07-10	1900		16		42	8.2	7.3	24	0	ND	3	0.4	ND	2800	10
Hot Spring Canyon Creek	N04E2510BC	07-10	1800	40	23		280	8.6	8.5	136	6	8	5	0.4	0.2		
Travertine Hot Spring	N05E2534CC	07-10	1800	5	67		4400		6.8	1520	0	250	6	0.4	0.6		
Clark Creek	N05E2526BB	07-10	1700	50	21		200	8.0	7.3	142	0	7	3	0.4	0.5		
Aurora	N05E2534CC	07-10	1700	100	23		220	8.0	7.3	76	0	6	4	0.4	0.5		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Bakersfield
Second Sampling

Year: 1984
Page 2 of 2

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	O-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Bodie Creek	N04E2710BC	07-10	1400	12	23		100	7.9	8.2	84	0	7	8	0.7	0.4		
Rough Creek Trib.	N05E2615DC	07-10	1600		24		100	7.8	8.1	50	0	ND	16	0.4	0.3		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Bakersfield
Third Sampling

Year: 1984

Name (Source)	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	O-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Cottonwood Canyon Creek	N03E2708DD	09-11	1100	42	14			9.0	8.1	64	0	ND	7	0.3	0.2		
Coyote Spring	N03E2614BC	09-11	1100	5	11			9.0	8.2	224	ND	7	3	ND	0.4		
Bridgeport Canyon Creek	N03E2614BC	09-11	1200	7	62			9.0	8.3	232	ND	7	9	ND	0.5		
Dog Creek	N04E2535BC	09-11	1300	603	14			8.7	7.8	38	0	ND	5	ND	ND	2893	10
Virginia Creek	N04E2535BC	09-11	1300	342	16			8.5	7.8	36	0	ND	6	0.6	0.2	10520	14
. Mormon M. Creek	N04E2631CD	09-11	1400	29	19			9.0	8.1	108	0	ND	25	ND	0.4		
Clearview Canyon Creek	N04E2536AB	09-11	1400	746	18			9.0	8.3	90	ND	ND	27	0.7	0.6		
Green Creek	N04E2529DD	09-11	1900		14			8.0	7.2	12	0	ND	3	0.1	ND	4700	2
Hot Spring Canyon Creek	N04E2510BC	09-11	1900	28	17			9.0	8.2	142	0	5	5	ND	0.5		
Travertine Hot Spring	N05E2534CC	09-11	1800	4				9.0	7.7	1408	ND	230	3	1.7	0.6		
Clark Creek	N05E2525BB	09-11	1700	93	16			9.0	8.3	172	ND	5	1	ND	0.5		
Aurora Creek	N05E2534CC	09-11	1700	32	17			8.5	8.2	120	ND	ND	4	ND	0.8		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Bakersfield
Third Sampling

Year: 1984
Page 2 of 2

Parameter Source Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (•C)	Dissolved Oxygen (mg/1)	Elec. Conductivity (u mhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/1)	Alkalinity (CO3) (Mg/1)	Chlorides (mg/1)	Turbidity (NTU)	Nitrate-N (mg/1)	O-Phosphate (mg/1)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Bodie Creek	N04E2710BC	09-11	1400	5	22			8.5	8.0	72	0	ND	8	0.5	0.5		
Rough Creek Trib.	N05E2615DC	09-11	1500	4	17			8.0	8.2	56	ND	ND	21	0.2	0.3		

APPENDIX B

QUALITY STANDARDS FOR CLASSIFIED WATERS

Source: Nevada State Environmental Commission

Water Pollution Control Regulations NAC 445.121 - 445.125

Classification of Waters.

The following stream standards and classifications do not preclude the Commission from establishing standards and classifications for additional public waters nor reclassifying the waters contained herein. The Commission will consider classification of a public water not contained in these tables upon request for a permit to discharge to such water.

Class A Waters. This classification is intended primarily to include waters or portions thereof located in areas of little human habitation; no industrial development or intensive agriculture; and where the watershed is relatively undisturbed by man's activity.

Beneficial uses. Drinking water supply with treatment by disinfection only, suitable for aquatic life habitat, wildlife propagation, agricultural use, recreation, boating and aesthetics.

Quality Standards for Class A Waters:

Item	Specifications
1. Floating solids, sludge deposits, tastes or odor producing substances.	None attributable to man's activities.
2. Sewage, industrial wastes or other wastes.	None.
3. Toxic materials; oils; deleterious substances; colored or other wastes.	None.
4. Settleable solids.	Only amounts attributable to man's activities which will not make the waters unsafe or unsuitable as a drinking water source or which will not be detrimental to aquatic life or for any other beneficial use established for this class.
5. pH.	Range between 6.5 to 8.5.
6. Dissolved oxygen.	Shall not be less than 6.0 milligrams/liter.
7. Temperature.	Shall not exceed 20°C. Allowable temperature increase above natural receiving water temperature - none.
8. Fecal coliform.	The fecal coliform concentration, based on a minimum of 5 samples during any 30-day period shall not exceed a geometric mean of 200 per 100 milliliters, nor shall more than 10% of total samples during any 30-day period exceed 400 per 100 milliliters.
9. Total phosphate.	Total phosphate shall not exceed 0.15 mg/l in any stream at the point where it enters any reservoir or lake, nor 0.075 mg/l in any reservoir or lake, nor 0.30 mg/l in streams and other flowing waters.
10. Total dissolved solids.	Shall not exceed 500 mg/l or one-third above that characteristic of natural conditions (whichever is less).

Class B Waters: This classification includes waters or portions thereof which are located in areas of light or moderate human habitation, little industrial development, light to moderate agricultural development, and where the watershed is only moderately influenced by man's activity.

Beneficial uses: Drinking water supply with treatment by disinfection and filtration only, for agricultural use, aquatic life and wildlife propagation, recreation, industrial supply and esthetics.

Quality Standards for Class B Waters:

Item	Specification
1. Floating solids, settleable solids; sludge deposits.	Only such amounts attributable to man's activities which will not make the waters unsafe or unsuitable as a drinking water source, injurious to fish or wildlife or impair the waters for any other beneficial use established for this class.
2. Sewage, industrial wastes or other wastes.	None which are not effectively treated to the satisfaction of the Department.
3. Odor producing substances.	Only such amounts which will not impair the palatability of drinking water or fish or have a deleterious effect upon fish, wildlife or any beneficial uses established for waters of this class.
4. Toxic materials; oil; deleterious substances; colored or other wastes; or heated or cooled liquids.	Only such amounts as will not render the receiving waters injurious to fish or wildlife, or impair the receiving waters for any beneficial uses established for this class.
5. pH.	Range between 6.5 to 8.5.
6. Dissolved oxygen.	For trout waters not less than 6.0 milligrams/liter; for nontrout waters not less than 5.0 milligrams/liter.
7. Temperature.	Shall not exceed 20°C for trout waters or 24°C for nontrout waters. Allowable temperature increase above natural receiving water temperatures - none.

8. Fecal coliform.	The fecal coliform concentration, based on a minimum of 5 samples during any 30-day period, shall not exceed a geometric mean of 200 per 100 milliliters, nor shall more than 10% of total samples during any 30-day period exceed 400 per 100 milliters.
9. Total phosphates.	Total phosphates shall not exceed 0.3 mg/l
10. Total dissolved solids.	Shall not exceed 500 mg/l or one-third above that characteristic of natural conditions (whichever is less).

Class C Waters: This classification includes water or portions thereof which are located in areas of moderate to urban human habitation, industrial developments present in moderate amounts, intensive agricultural practices, and the watershed considerably altered by man's activity.

Beneficial uses. Domestic water supply following complete treatment, agricultural use, aquatic life, wildlife propagation, recreation, esthetics, and industrial supply.

Quality Standards for Class C Waters:

Item	Specifications
1. Floating solids, settleable solids; sludge deposits.	Only such amounts attributable to the activities of man which will not make the receiving waters injurious to fish or wildlife or impair the waters for any beneficial use established for this class.
2. Sewage, industrial wastes, or other wastes.	None which are not effectively treated to the satisfaction of the Department.
3. Toxic materials; oils; deleterious substances; colored or other wastes; or heated or cooled liquids.	Only such amounts as will not render the receiving waters injurious to fish and wildlife or impair the waters for any beneficial use established for this class.
4. pH.	Range between 6.5 to 8.5.
5. Dissolved oxygen.	For trout waters not less than 6.0 mg/l; for nontrout waters not less than 5.0 mg/l.
6. Temperature	Shall not exceed 20°C for trout waters or 34°C for nontrout waters. Allowable temperature increase above normal receiving water temperature - 3°C.
7. Fecal coliform.	The more stringent of the following apply: The fecal coliform concentration shall not exceed a geometric mean of 1000 per 100 milliliters nor shall more than 20% of total samples exceed 2400 per 100 milliliters. -The annual geometric mean of fecal coliform concentration shall not exceed that characteristic of natural conditions by more than 200 per 100 milliliters nor shall the number of fecal coliform in a single sample exceed that characteristic of natural conditions by more than 400 per 100 milliliters.

	-The fecal coliform concentration, based on a minimum of 5 samples during any 30-day period, shall not exceed a geometric mean of 200 per 100 milliliters nor shall more than 10% of total samples during any 30-day period exceed 400 per 100 milliliters. This is applicable only to those waters used for primary contact recreation.
8. Total phosphates.	Total phosphates shall not exceed 1.0 mg/1
9. Total dissolved solids.	Shall not exceed 500 mg/1 or one-third above that characteristic of natural conditions (whichever is less).

Class D Waters: This classification includes waters or portions thereof located in areas of urban development, highly industrialized or intensively used for agriculture or combination of all the above and where effluent sources include a multiplicity of waste discharges from the highly altered watershed.

Beneficial uses: Boating and esthetics, aquatic life, agricultural use and industrial supply except for food processing purposes.

Quality Standards for Class D Waters:

Item	Specifications
1. Floating solids, settleable solids; sludge deposits.	Only such amounts attributable to the activities of man which will not impair the receiving waters for any beneficial use established for this class.
2. Sewage, industrial wastes or other wastes.	None which are not effectively treated to the satisfaction of the Department.
3. Toxic materials; oils; deleterious substances; colored or other wastes; or heated or cooled liquid.	Only such amounts as will not impair the receiving waters for any beneficial use established for this class.
4. pH.	Range between 6.0 and 9.0.
5. Dissolved oxygen.	Not less than 3.0.

APPENDIX C

STATE OF NEVADA WATER QUALITY CRITERIA FOR DESIGNATED BENEFICIAL USES

Source: Nevada State Environmental Commission

Water Pollution Control Regulations - 1980, NAC 445.126

STATE OF NEVADA WATER QUALITY CRITERIA FOR DESIGNATED BENEFICIAL USES

PARAMETER		AGRICULTURAL USE	AQUATIC LIFE		BATHING & WATER CONTACT SPORTS	DRINKING WATER SUPPLY	WILDLIFE PROPAGATION
			Cold Water	Warm Water			
Temperature C Summer Maximum	<		23[a]	30[a]	15-34[a]		
Winter Maximum	<		14[a]	14[a]			
pH Units Single Value		4.5-9.0[b]	6.5-9.0[b]	6.5-9.0[b]	6.5-8.3[a]	5.0-9.0[b]	7.0-9.2[a]
Dissolved Oxygen Single Value-mg/l	>	Aerobic[b]	5.0[b]	5.0[b]	Aerobic[b]	Aerobic[b]	Aerobic[b]
Chlorides Single Value-mg/l	<						
Phosphates as P Single Value-mg/l	<	TO BE DETERMINED BY BIOASSAY					
Nitrates as N Single Value-mg/l	<	100[a]		90[b]			100[a]
Nitrites as N Single Value-mg/l	<	10[a]	0.05[f]	0.05[f]			10[a]
Un-ionized Ammonia Single Value-mg/l	<		0.02[b]	0.10[f]			
Total Dissolved Solids Single Value-mg/l	<	1000[b]				500[c]	

PARAMETER		AGRICULTURAL USE	AQUATIC LIFE Cold Water	AQUATIC LIFE Warm Water	BATHING & WATER CONTACT SPORTS	DRINKING WATER SUPPLY	WILDLIFE PROPAGATION
Turbidity, Single Value-NTU	<		10d	50d		250e	
Fecal Coliform (MF/100ml) Annual Geometric Mean	<	1000a			200f	2000a	1000a
Alkalinity Single Value-mg/l	>		20b	20b			30-130a
Suspended Solids Single Value-mg/l	<		80a	80a			
Sulfate Single Value-mg/l	<					250b	
Arsenic			0.05f	0.05f		0.05b	
Copper	<	0.02a	0.01f	0.01f		1.0b	0.5b
Iron	<	5.0a	1.0f	1.0f		0.3b	
Manganese	<	.2b	1.0f	1.0f		0.05b	0.1a
Mercury	<	2.0a	.05f	0.05f		5.0b	25.0a
Zinc	<	.00005b	.00005b	.00005b		.002b	.00005b

REFERENCES & FOOTNOTES

a. National Academy of Sciences, Water Quality Criteria (Blue Book), 1972.

b. U.S. Environmental Protection Agency, 1976, Quality Criteria for Water (Red Book). EPA - 440/9-76-023. Office of Water and Hazardous Materials, Washington, D.C.

c. Nevada Division of Health, 1977. Water Supply Regulation, Part I. Water Quality Standards, Monitoring, Record Keeping and Reporting. State Board of Health, Carson City, Nevada.

d. Report of the Commission of Water Quality Criteria (FWCPA) - Green Book, 1968.

e. Water Treatment Plant Design (ASCE and AWWA) 1970.

f. State of Colorado 1978. Colorado Water Quality Control Commission Water Quality Standards, Adopted May 2, 1978; Effective July 20, 1978. Boulder, Colorado.

g. Approved and adopted by the Nevada State Environmental Commission on 8/12/80.

means less than.
means greater than.

(1) Fluoride limits vary from 1.4 mg/l to 2.4 mg/l based on the annual average of the maximum daily air temperature (see Reference c).

APPENDIX D

Primary Drinking Water Standards*

Constituent	Maximum Allowable Level (mg/l)
Arsenic	0.05
Chloride	400
Color	15 color units
Copper	1.0
**Flouride	see following table
Foaming Agents	0.5
Iron	0.6
Magnesium	150
Manganese	0.1
Nitrate	45
pH	6.5 - 8.5
Sulphate	500
Total Dissolved Solids (TDS)	1000
Zinc	5
Coliform Total	0
Coloform Fecal	0
Fecal Streptococcus	0

Source: Chemical Analyses of Municipal Water Supplies of Nevada 1980. State Division of Health, Bureau of Consumer Health Protection Services, Carson City, NV

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*"Primary standard" means a standard which specifies a maximum contaminant level for any constituent found in public water supply which, if exceeded, may adversely affect the health of persons.

**Flouride:

Annual Average of Maximum Daily Air Temperature	Maximum Allowable, Milligrams/Liter
53.7 and below	2.4
53.8 to 58.3	2.2
58.4 to 63.8	2.0
63.9 to 70.6	1.8
70.7 to 79.2	1.6
79.3 to 90.5	1.4

In addition to the above constituents, the following heavy metals are also tested on "Community" water supplies:

Constituent	Maximum Allowable Level (mg/1)
Barium	1.0
Codium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Selenium	0.01
Silver	0.05

The following organic constituents are required to be tested every three years for community drinking water:

Constituent	Maximum Allowable Level (mg/l)
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
2,4-D	0.1
Silver	0.01

APPENDIX E

Sedondary Drinking Water Standards*

Constituent	Maximum Allowable Level (mg/l)
Chloride	250
Color	15 color units
Copper	1
Foaming Agents	0.5
Magnesium	125
Manganese	0.05
Odor	3 threshold odor number
pH	6.5 - 8.5
Sulphate	250
Total Dissolved Solids (TDS)	500
Zinc	5
Coliform Total	0
Coliform Fecal	0
Fecal Streptococcus	0

Source: Public Water Systems - December 1980, State Division of Health Consumer Health Protection Services, Carson City, NV, NAC 445.248

*"Secondary standard" means a standard which specifies a maximum level for constituents found in a public water supply which, if exceeded, may adversely affect the public welfare. These standards apply to constituents which adversely affect the taste, odor, appearance and other aesthetic qualities of water.