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CARSON CITY
WATER QUALITY
LABORATORY

1984 ANNUAL
WATER QUALITY
ANALYSIS REPORT
FOR NEVADA

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT



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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

CARSON CITY NEVADA WATER QUALITY LABORATORY

1984 ANNUAL WATER QUALITY ANALYSES REPORT FOR NEVADA

Report Prepared By:

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Staff Hydrologist

District Manager

JULY, 1985

NEVADA PLANNING-TECHNICAL

DOCUMENT NO. BLM CC PT 85 018 7240

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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
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STATE OF NEVADA
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MAY 17 1984

Telephone (702) 462-4433

Beatrix DeFuria, Hydrologist
Bureau of Land Management
1000 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 in effect for two (2) years of this date unless advised otherwise.

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, hydrogen activity, alkalinity, phosphorus (ortho and total), chlorine, turbidity, suspended solids, dissolved solids, nitrate and coliform bacteria.

Respectfully,

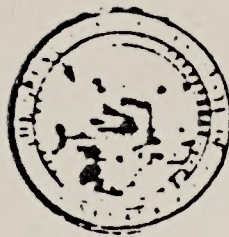
Harry van Dusen
Quality Assurance Officer

Y2372

John W. ...
George ...
Henry ...

George ...
George ...
George ...

BUREAU OF LAND MANAGEMENT
CARSON CITY OFFICE



MAY 18 12 33 PM '84

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DIVISION OF ENVIRONMENTAL PROTECTION

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May 17, 1984

Telephone (702) 885-4670

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
Quality Assurance Officer

HvD/nd



May 18 12 24 PM '54

STATE OF MICHIGAN
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION
LANSING, MICHIGAN
LANSING OFFICE 482-1234

May 11, 1954

Beatty L. ...
Director of Land Management
1000 East ...
Lansing, Michigan

The following report of the analytical facility for the analysis of water and wastewater was prepared on April 1954. During this past year, additional gas liquid partitioning facilities have been installed at the facility. The report is in the process of being revised to reflect the current status of the facility. A full report will be prepared for the future. The report is in the process of being revised to reflect the current status of the facility.

The Quality Assurance Officer of the Division of Environmental Protection requests and requests to other agencies in regard to access, analytical data reported by the Michigan City Analytical Facility for the following analysis: metals and organics, inorganic, organic, water quality parameters, hydrolysis activity, stability, chemical oxygen demand, total solids, total suspended solids, oil and grease, nitrate and nitrite nitrogen.

Respectfully,
Henry ...
Quality Assurance Officer

HW:ms

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.

conductivity and by water content. The direct samples were investigated in
 the OGD laboratory. They were analyzed within 24 hours of collection
 using the following methods and in conjunction with the
 laboratory's existing procedures for the analysis of (1) samples and
 (2) samples, including, but not limited to, the following:
 localities and soil collection methods.

The purpose of this report is to describe the procedures used during the
 the analysis of the samples and to provide a record of the results.
 It is hoped that this document will be useful to the
 laboratory in the event of future and subsequent of such data as
 as action items.

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 quality data gathered by BLM.

INTRODUCTION

In 1972, when the Clean Water Act (92 Stat. 1063) was passed and subsequently amended in 1977 (95 Stat. 1057), national policy and direction regarding the maintenance and improvement of water quality for the nation's waters was set forth.

The Act, under the authority of section 101 and 102 of the Clean Water Act of 1977, Executive Order No. 12088, and the provisions of the Federal Land Policy and Management Act of 1976 (94 Stat.), is required to comply with the intent of the Act's water quality management and implementation plan. Federal commitment and responsibility is further emphasized by the Memorandum of Understanding (MOU) signed by the BLM Nevada State Director in December, 1980, and the Director of Environmental Protection (EPA) of the Nevada Department of Conservation and Natural Resources. In that MOU, the BLM has agreed to: (1) continue to develop pollution control and abatement programs which provide for both environmental protection and reasonable resource use on BLM-administered lands; (2) wherever appropriate, institute best management practices and employ other necessary plans and best management practices in the development of management reservoir plans, alignment management plans, grazing permits, etc., for the alignment and control of riparian source pollution from wildlife lands and (3) develop and institute a "508" water quality monitoring and survey program and (4) upon request, provide the BLM with any available water quality 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

to coincide with high, mid-range, and low flow. The districts were provided with sample bottles, appropriate preservatives, field sheets, necessary instructions and field equipment. It was found that

field measurements for flow, temperature, dissolved oxygen, electric conductivity and depth were taken and recorded on the field sheets. The samples were the packed and transported to the CDD Laboratory either by air or by road to meet the 24-hour preservation. Some samples taken for heavy metals were sent to the Environmental Health Laboratory in New Delhi for analysis.

WATER QUALITY AND ANALYSIS

All the laboratory equipment was checked and tested for accuracy before the samples were analyzed. To start to keep the laboratory records accurate and to ensure each sample was analyzed, and the district name and time of collection, date and time of analysis, station ID, 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, 16th Edition (APHA, 1985). The analytical methods used in the field and the laboratory are summarized by certain detection limits. These limits are listed in Table 1.

WATER QUALITY AND ANALYSIS

The water quality data, both from the field and the laboratory, have been recorded off to spreadsheet reports and data 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

Appendix A. All the information used in this appendix has been provided in Table B. Also, the following four sets of water quality standards are provided for reference and comparison:

- (1) Quality standards for untreated water (Appendix B)
- (2) Water quality criteria for designated beneficial uses (Appendix C)
- (3) Effluent quality standards (Appendix D)
- (4) Secondary treatment water standards (Appendix E)

Some quality standards are not included in this appendix. The water quality standards for the various uses of water are listed in Appendix A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

The quality standards for water quality are listed in Appendix A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

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.

...the results of the study ...

The findings of the study ...

In the case of ...

...the results of the study ...

...the results of the study ...

The 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

Name	Source Location	First Sampling	Second Sampling	Third Sampling
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 --		

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

Name	Location	Class	Season	Water Sampling
Boysen Creek	W0213000	C	C	C
Boysen Creek	W0213100	C	A	A
Boysen Creek	W0213200	C	A	A
Boysen Creek	W0213300	C	C	C
Boysen Creek	W0213400	C	C	A
Boysen Creek	W0213500	C	A	A
Boysen Creek	W0213600	C	A	A
Boysen Creek	W0213700	C	A	A
Boysen Creek	W0213800	C	C	A
Boysen Creek	W0213900	C	A	A
Boysen Creek	W0214000	C	A	A
Boysen Creek	W0214100	C	A	A
Boysen Creek	W0214200	C	A	A
Boysen Creek	W0214300	C	A	A
Boysen Creek	W0214400	C	A	A
Boysen Creek	W0214500	C	A	A
Boysen Creek	W0214600	C	A	A
Boysen Creek	W0214700	C	A	A
Boysen Creek	W0214800	C	A	A
Boysen Creek	W0214900	C	A	A
Boysen Creek	W0215000	C	A	A
Boysen Creek	W0215100	C	A	A
Boysen Creek	W0215200	C	A	A
Boysen Creek	W0215300	C	A	A
Boysen Creek	W0215400	C	A	A
Boysen Creek	W0215500	C	A	A
Boysen Creek	W0215600	C	A	A
Boysen Creek	W0215700	C	A	A
Boysen Creek	W0215800	C	A	A
Boysen Creek	W0215900	C	A	A
Boysen Creek	W0216000	C	A	A
Boysen Creek	W0216100	C	A	A
Boysen Creek	W0216200	C	A	A
Boysen Creek	W0216300	C	A	A
Boysen Creek	W0216400	C	A	A
Boysen Creek	W0216500	C	A	A
Boysen Creek	W0216600	C	A	A
Boysen Creek	W0216700	C	A	A
Boysen Creek	W0216800	C	A	A
Boysen Creek	W0216900	C	A	A
Boysen Creek	W0217000	C	A	A
Boysen Creek	W0217100	C	A	A
Boysen Creek	W0217200	C	A	A
Boysen Creek	W0217300	C	A	A
Boysen Creek	W0217400	C	A	A
Boysen Creek	W0217500	C	A	A
Boysen Creek	W0217600	C	A	A
Boysen Creek	W0217700	C	A	A
Boysen Creek	W0217800	C	A	A
Boysen Creek	W0217900	C	A	A
Boysen Creek	W0218000	C	A	A
Boysen Creek	W0218100	C	A	A
Boysen Creek	W0218200	C	A	A
Boysen Creek	W0218300	C	A	A
Boysen Creek	W0218400	C	A	A
Boysen Creek	W0218500	C	A	A
Boysen Creek	W0218600	C	A	A
Boysen Creek	W0218700	C	A	A
Boysen Creek	W0218800	C	A	A
Boysen Creek	W0218900	C	A	A
Boysen Creek	W0219000	C	A	A
Boysen Creek	W0219100	C	A	A
Boysen Creek	W0219200	C	A	A
Boysen Creek	W0219300	C	A	A
Boysen Creek	W0219400	C	A	A
Boysen Creek	W0219500	C	A	A
Boysen Creek	W0219600	C	A	A
Boysen Creek	W0219700	C	A	A
Boysen Creek	W0219800	C	A	A
Boysen Creek	W0219900	C	A	A
Boysen Creek	W0220000	C	A	A

-- not available --
 -- 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 surface. The mineral and the heavy metal data (page 20) show the spring water is practically devoid of hazardous minerals and

The water quality standards indicate that these waters meet the water quality criteria and standards as set forth in the National Sanitation Foundation Environmental Protection Agency (NSF) and the health protection Environmental Protection Agency (EPA) and are suitable for drinking, bathing, and other uses and designated recreational use.

The quality of water that enters the system is the primary and the secondary drinking water standards, as consistently good. In general, these waters and other water bodies entering the distribution system are of good quality and are safe for recreational, drinking purposes and for use as a source of water for the distribution of the water has been treated for such purposes. The bacteria found in the water are of low numbers and are of the coliform, fecal coliform, and streptococci. The number of these bacteria would be minimal and would be very low. The presence of such bacteria would be determined by a test which indicates the number and type of bacteria will depend upon season, time of day, and local conditions. These bacteria are very common in nature and are not a health hazard. However, they should be treated or even removed. Therefore, water should be treated and the water from the springs or wells should only be used for drinking if of highest quality. However, this water can be used for other purposes, including other domestic purposes.

For the purpose of this report, the water is of high quality and is suitable for drinking and other uses. This indicates that the water is protected against which may be found in the water supply. The water is appearing at the spring. The amount and the quality of water (page 10) show the spring water is generally good for drinking purposes and

TABLE 1

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

Analytical Methods

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.

Chloride	Titration
Totality	Mercurimetric 90° Acid Method Number 18002
Nitrate-N	Cadmium Reduction
Phosphate-Ortho	Spectrophotometric molybdate acid
Phosphate-Total	Spectrophotometric molybdate acid
Ammonia Total	Nesslerization
Nitrite Total	Diazotization
Iron	Atomic Absorption, Graphite Furnace
Manganese	Atomic Absorption Flameless
Cadmium	Atomic Absorption Flame
Copper	Atomic Absorption Flame

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TABLE 1Analytical Methods

<u>Constituent</u>	<u>Procedure</u>
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	Nephelometric 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 2Detectable Limits

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

TABLE 2

Detectable Levels

<u>Detectable Level</u>	<u>Element</u>
0-10	Dissolved Oxygen
0-10000	Conductivity
0-11	Field pH
0-11	Lab pH
1-1000	Alkalinity Bicarbonate
1-1000	Alkalinity Carbonate
1-1000	Chloride
0.1-100	Toxicity
0.1-10	Aluminum
0.1-10	Fluoride-Ions
0.1-10	Phosphate-Total
Variable	Cadmium-Total
Variable	Copper-Total
0.001 and above	Strontium
0.001 and above	Mercury
0.001 and above	Lead
0.01 and above	Zinc
0.01 and above	Copper

TABLE 3Abbreviations

N19E3833CD	T. 19 N., R. 38 E., Sec. 33 SE½ of SW¼
gpm	gallons per minute
C°	temperature degree celsius
mg/l	milligrams per liter
Mmhos/cm	micro mhos per centimeter
HCO ₃	bicarbonate
CO ₃	carbonate
NTU	nephelometric turbidity unit
Nitrate-N	Nitrate nitrogen
O-Phosphate	Ortho-phosphate
T-Phosphate	Total-phosphate
f/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

Table 1

Observations

7. 17 2.4. 5. 2. 12. 13 14 of 2017

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Year: 1996
Date: 1/1/97

Station	Date Collected	Temp (C)	Dissolved Oxygen (mg/l)	pH	Total Solids (mg/l)	Total Phosphorus (mg/l)	Total Nitrogen (mg/l)	Ammonia Nitrogen (mg/l)	Chloride (mg/l)	Sulfate (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Hardness (mg/l)	Conductivity (µmhos/cm)	Specific Conductivity (µmhos/cm)	Color (PCU)	Turbidity (NTU)	Secchi Disk (cm)	Water Quality Index
Station 1	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 2	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 3	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 4	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 5	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 6	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 7	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 8	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 9	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75
Station 10	01-01-97	10	8.5	7.5	15	0.1	0.5	0.2	10	5	10	5	15	150	140	10	10	10	75

APPENDIX A

WATER QUALITY DATA

Station 10 - 1000 ft. from station 9

Station 10 - 1000 ft. from station 9

Station 10 - 1000 ft. from station 9

Station 10 - 1000 ft. from station 9

Station 10 - 1000 ft. from station 9

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Station 10 - 1000 ft. from station 9

ALPHABETICALLY
BY LAST NAME

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Elko

Year: 1984

First Sampling

Page 1 of 1

Parameter		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)
Name	Location																
Femile Canyon	N3E5620BB	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	N3E5612CB	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	N3E5426CA	04-24	1100	20160	8	12.3	185	8.0	8.0	74	0	11	585	1.6	1.2		
Dorsey Creek	N3E5529DC	04-24	1100	22400	5				7.6	66	0	7	833	1.4	0.4		
Jackstone Creek	N3E5629AB	04-24	0900	22400	5				7.6	46	0	13	110	1.4	1.1		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

Year: 1984

Page 1 of 1

District: Elko

Second Sampling

Parameter		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)
Name	Location																
Femile Canyon	N3E5620BB	06-26	0900	11200	18		340	8.1	8.1	234	0	14	12	1.2	0.1		
Corral Creek	N2E5613AB	06-26	1200	5958	16		200	8.5	8.6	148	2	ND	24	1.2	0.3		
Spring Creek	N3E5612CB	06-26	0900	1747	20		190	9.6	9.5	14	24	25	55	1.3	0.4		
Pearl Creek	N2E5624DA	06-26	1300	8780	14		180	8.2	8.3	148	8	ND	6	1.2	0.4		
Dixie Creek	N3E5426CA	06-26		9721	19		200		8.2	94	ND	17	33	1.5	0.4		
Jackstone Creek	N3E5629AB	06-26	1400	4488	28				8.6	68	2	27	9	0.6	0.4		
Mary's Creek	N3E5105DB	06-26	1000	1795	23				8.1	168	0	11	3	1.5	0.6		
Sherman Creek	N3E5606CD	06-26	1300	1346	28				8.5	62	ND	30	5	0.7	0.6		
B.R. Jane Creek	N3E5106AB	06-26	1100	1616	27				8.5	190	6	110	4	1.2	0.1		
Susie Creek	N3E5306BB	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

Year: 1984

Third Sampling

Page 1 of 1

Parameter		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)
Name	Location																
Femile Canyon	N3E5620BB	09-18	0900	1344	13		325	8.2	8.3	136	ND	21	53	ND	0.4		
Corral Creek	N2E5613AB	09-18	1200	2240	14		275	8.7	8.7	140	10	5	10	ND	0.2		
Spring Creek	N3E5612CB	09-18	0900	1800	13		250	8.5	8.4	98	ND	24	11	0.4	ND		
Dixie Creek	N3E5426CA	09-18	1000	448	17		350	8.8	8.9	159	14	30	6	0.2	ND		
Jackstone Creek	N3E5629AB	09-18	1200	561	22				9.1	70	6	27	5	ND	0.3		
Mary's Creek	N3E5105DB	09-18	1000	359	14				8.0	212	0	13	2	0.5	0.4		
Sherman Creek	N3E5606CD	09-18	1300	449	22				8.7	86	4	36	2	0.1	0.5		
Susie Creek	N3E5306BB	09-18	1100	4488	19				8.7	142	10	27	11	ND	0.2		
B.R. Jake Creek	N3E5106AB	09-18	1000	224	13				8.6	202	8	92	3	0.6	ND		
Pearl Creek	N2E5624DA	09-18	1200	1792	13		290	8.2	8.2	83	164	ND	ND	2	ND		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Carson City

Year: 1984

First Sampling

Page 1 of 2

Parameter		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)
Name	Location																
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

Year	Month	Day	Time	Location	Activity	Remarks	Count	Notes
1950	Jan	1	10:00	...	...	...	...	...
1950	Jan	2	11:00	...	...	...	...	...
1950	Jan	3	12:00	...	...	...	...	...
1950	Jan	4	13:00	...	...	...	...	...
1950	Jan	5	14:00	...	...	...	...	...
1950	Jan	6	15:00	...	...	...	...	...
1950	Jan	7	16:00	...	...	...	...	...
1950	Jan	8	17:00	...	...	...	...	...
1950	Jan	9	18:00	...	...	...	...	...
1950	Jan	10	19:00	...	...	...	...	...
1950	Jan	11	20:00	...	...	...	...	...
1950	Jan	12	21:00	...	...	...	...	...
1950	Jan	13	22:00	...	...	...	...	...
1950	Jan	14	23:00	...	...	...	...	...
1950	Jan	15	24:00	...	...	...	...	...
1950	Jan	16	25:00	...	...	...	...	...
1950	Jan	17	26:00	...	...	...	...	...
1950	Jan	18	27:00	...	...	...	...	...
1950	Jan	19	28:00	...	...	...	...	...
1950	Jan	20	29:00	...	...	...	...	...
1950	Jan	21	30:00	...	...	...	...	...
1950	Jan	22	31:00	...	...	...	...	...
1950	Jan	23	32:00	...	...	...	...	...
1950	Jan	24	33:00	...	...	...	...	...
1950	Jan	25	34:00	...	...	...	...	...
1950	Jan	26	35:00	...	...	...	...	...
1950	Jan	27	36:00	...	...	...	...	...
1950	Jan	28	37:00	...	...	...	...	...
1950	Jan	29	38:00	...	...	...	...	...
1950	Jan	30	39:00	...	...	...	...	...
1950	Jan	31	40:00	...	...	...	...	...

DATE: 1950 JAN 31 TIME: 10:00 AM

LOCATION: ...

ACTIVITY: ...

REMARKS: ...

...

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Carson City
 Second Sampling

Year: 1984
 Page 1 of 1

Parameter		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)
Name	Location																
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

Year: 1984

District: Carson City
Third Sampling

Page 1 of 1

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)
Rough Creek	N07E2730CC	09-26	1100	896	8	11.7	440	8.6	8.6	212	8	13	10	0.2	0.8		8
Rough Creek	N06E2722AC	09-26	1200	1120	8	13.2	125	7.2	8.8	50	0	ND	8	0.3	0.2		4
Rough Creek	N06E2722CB	09-26	1200	1120	10	11.9	140	8.2	8.4	60	0	ND	9	0.2	0.2		
Rodie Creek	N05E2701BC	09-26	1300	224	12	11.8	220	8.4	8.0	90	ND	5	8	0.5	0.4		
Rodie Creek	N06E2724RA	09-26	1200	224	13	11.4	180	7.2	8.0	82	0	7	11	0.6	0.3		
Big Den Creek	N17E3722CD	09-26	1100	150	9	8.2	119	6.8	7.7	28	0	ND	6	0.3	0.2		2
Edwards Creek	N19E3832AD	09-26	1200	400	13	8.4	280	8.1	8.2	70	0	26	3	0.3	0.3		
Cherry Creek	N19E3705DA	09-26	1300	1000	15		290	8.1	8.2	56	0	17	3	0.4	0.2		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

Year: 1984

Page 1 of 2

District: Winnemucca
First Sampling

Name	Location	Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (µmhos/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)
Goldrum 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		



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	O-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		
		35 BB	= N35 E29	35BB	Sulfur Springs	W.M.W.V.C.C.R.	
		31 DB	= N28 E34	31DB	Black Knob Spring	DISTRICT	

SAMPLES BY: BLM Staff - W.M.W.V.C.C.R.

ANALYSIS BY: J. Seher APPROVED BY: [Signature]

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Winnemucca

Second Sampling

Year: 1984

Page 1 of 2

Parameter		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)
Name	Location																
NF Little Humbolt River	N42E43280C	06-12	1600	26880					7.8	50	0	14	64	1.2	0.6	TN/C	0
SF Little Humbolt River	N41E4401CA	06-12	1500	500					7.6	48	0	16	60	1.4	0.5	5260	10
Coldrun 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 MONITORING WATER QUALITY ANALYSIS RECORD

BUR OF LAND MANAGEMENT
CARSON CITY DIST OFFICE

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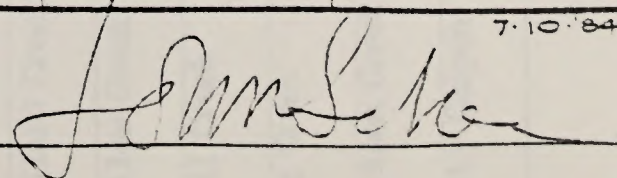
PROJECT NAME U. S. Dept of the Interior, Bureau of Land Management J.N. 383-734

Winnemucca District

SAMPLE IDENTIFICATION N°			PARAMETER	PARAMETER	PARAMETER	PARAMETER	PARAMETER	
SAMPLE COLLECTION DATE		TIME	STATION N°	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			

SAMPLES BY: BLM - Winnemucca District

ANALYSIS BY: J. Seher

APPROVED BY: 

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Winnemucca

Year: 1984

Third Sampling

Page 1 of 3

Parameter		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)
Name	Location																
NF Little Humbolt River	N42E43280C	08-21	1000	600									2	ND	789	2	
SF Little Humbolt River	N41E4401CA	08-21	0900	800									6	0.2	4208	22	
Goldrum Canyon	N34E4021CC	08-21	1600	400	22		840	8.6					2	0.2	TN/C	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	N44E32340C	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: Ely

Year: 1984

First Sampling

Page 1 of 3

Parameter / Source		Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (µmhos/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	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		
Coshute 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	0.4	0.4		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Ely

Year: 1984

Second Sampling

Page 1 of 2

Parameter		Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (µ 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)
Name	Location																
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

Year: 1984

Page 1 of 2

District: Las Vegas

First Sampling

Parameter		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)
Name	Location																
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
 Second Sampling

Year: 1984

Parameter		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)
Name	Location																
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	TN/C	1800
Virgin River	S14E7007BC	05-07	1300	363552	20		2600	8.0	8.1	230	0	450	230	2.0	0.1	TN/C	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

Year: 1984

Third Sampling

Page 1 of 1

Parameter		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)
Name	Location																
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 Mash	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

Page 1 of 2

Parameter		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)
Name	Location																
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
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JUL 30 1984

District Office
Carson City, NV

SIERRA ENVIRONMENTAL MONITORING WATER QUALITY ANALYSIS RECORD

PROJECT NAME Bureau of Land Management - Carson District 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.	Magnesium	Manganese	Mercury	Copper	Iron
MON DAY YR	0-2400		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: *[Signature]*

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Battle Mountain
 Second Sampling

Year: 1984
 Page 1 of 2

Parameter		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)
Name	Location																
Big Well	N08E5612DA	06-04	1500	150	21		350	8.0	8.1	172	0	37	6	0.9	0.3		
Chimney Spring	N17E516CA	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		
M111 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		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Battle Mountain
Third Sampling

Year: 1984

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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)
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		
Colls Creek	N22E4916AB	08-14	1500	200	25		230		8.8	178	10	30	10	0.2	0.3		

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Susanville

Year: 1984

First Sampling

Page 1 of 1

Parameter		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)	P-Phosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Name	Location																
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	N33E110AC	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

Year: 1984
Page 1 of 2

District: Susanyville
Second Sampling

Parameter		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)	Phosphate (mg/l)	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: Susanyville
 Second Sampling

Year: 1984

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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)	Phosphate (mg/l)	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

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Parameter		Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (µmhos/cm)	Field pH	Lab. pH	Alkalinity (HCO ₃) (mg/l)	Alkalinity (CO ₃) (mg/l)	Chlorides (mg/l)	Turbidity (NTU)	Nitrate-N (mg/l)	T-Phosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Elzluh 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

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Parameter		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)	Orthophosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Name	Location																
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	0
Virginia Creek	N04E2535BC	05-01	1400	8960	8	9.4	69	7.7	7.4	30	0	ND	3	0.8	ND	0	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	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		

Project Name	Project ID	Start Date	End Date	Duration (Days)	Start Time	End Time	Days	Location	Notes
Project A	001	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project B	002	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project C	003	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project D	004	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project E	005	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project F	006	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project G	007	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project H	008	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project I	009	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project J	010	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project K	011	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project L	012	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project M	013	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project N	014	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project O	015	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project P	016	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project Q	017	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project R	018	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project S	019	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project T	020	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project U	021	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project V	022	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project W	023	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project X	024	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project Y	025	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment
Project Z	026	10/01	10/05	5	08:00	17:00	Mon-Fri	Site Office	Initial site assessment

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Project Name: [Blank]

Project ID: [Blank]

Project Name: [Blank]

Project ID: [Blank]

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Bakersfield

Second Sampling

Year: 1984

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Parameter		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)	Orthophosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Name	Location																
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

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Parameter		Date Collected	Time Collected	Flow (gpm)	Temperature (°C)	Dissolved Oxygen (mg/l)	Elec. Conductivity (µmhos/cm)	Field pH	Lab. pH	Alkalinity (HCO3) (mg/l)	Alkalinity (CO3) (mg/l)	Chlorides (mg/l)	Turbidity (NTU)	Nitrate-N (mg/l)	Orthophosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Name	Location																
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

Year: 1984

Third Sampling

Parameter		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)	Phosphate (mg/l)	Total Coliform (#/100 ml)	Fecal Coliform (#/100 ml)
Name	Location																
Cottonwood	N03E2708DD	09-11	1100	42	14			9.0	8.1	64	0	ND	7	0.3	0.2		
Canyon Creek	N03E2614BC	09-11	1100	5	11			9.0	8.2	224	ND	7	3	ND	0.4		
Coyote Spring	N03E2614BC	09-11	1200	7	62			9.0	8.3	232	ND	7	9	ND	0.5		
Bridgeport	N04E2535BC	09-11	1300	603	14			8.7	7.8	38	0	ND	5	ND	ND	2893	10
Canyon Creek	N04E2535BC	09-11	1300	342	16			8.5	7.8	36	0	ND	6	0.6	0.2	10520	14
Virginia Creek	N04E2535BC	09-11	1400	29	19			9.0	8.1	108	0	ND	25	ND	0.4		
Mormon	N04E2631CD	09-11	1400	746	18			9.0	8.3	90	ND	ND	27	0.7	0.6		
M. Creek	N04E2536AB	09-11	1400					8.0	7.2	12	0	ND	3	0.1	ND	4700	2
Clearview	N04E2529DD	09-11	1900					9.0	8.2	142	0	5	5	ND	0.5		
Canyon Creek	N04E2510BC	09-11	1800	28	17			9.0	7.7	1408	ND	230	3	1.7	0.6		
Green Creek	N05E2534CC	09-11	1700	93	16			9.0	8.3	172	ND	5	1	ND	0.5		
Hot Spring	N05E2525BB	09-11	1700	32	17			8.5	8.2	120	ND	ND	4	ND	0.8		
Canyon Creek																	
Travertine																	
Hot Spring																	
Clark Creek																	
Aurora Creek																	

WATER QUALITY ANALYSES

Carson City District Water Laboratory

District: Bakersfield
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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)	Phosphate (mg/l)	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		

Classification of Waters.

The following stream standards and classifications do not preclude the Commission from establishing standards and classifications for additional public waters and reclassifying the waters contained herein. The Commission will consider classification of a public water not contained in these rules 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 distillation only, suitable for aquatic life habitat, wildlife propagation, agricultural use, recreation, fishing and aesthetics.

APPENDIX B

QUALITY STANDARDS FOR CLASSIFIED WATERS

Source: Nevada State Environmental Commission

Water Pollution Control Regulations NAC 445.121 - 445.125

APPENDIX B
QUALITY STANDARDS FOR CLASSIFIED WATER

Water Pollution Control Regulations NAC 445.111 - 445.115
Source: Nevada State Environmental Commission

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.

1. pH.	Range between 6.5 to 8.5.
2. Dissolved oxygen.	Shall not be less than 5.0 milligrams/liter.
3. Temperature.	Shall not exceed 20°C. Allowable temperature increase above natural prevailing water temperature = 3°C.
4. Fecal coliforms.	The fecal coliform concentration, based on a minimum of 5 samples during any 30-day period shall not exceed a geometric mean of 100 per 100 milliliters, nor shall more than 10% of total samples during any 30-day period exceed 400 per 100 milliliters.
5. Total phosphorus.	Total phosphorus 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.
6. Total dissolved solids.	Shall not exceed 500 mg/l or one-third more than characteristic of natural conditions (whichever is less).

Classification of Waters

The following are the standards and classifications for non-potable water. The Commission from establishing standards and classifications for additional public water and recognizing the factors involved herein. The Commission will consider classification of a public water for consideration in those cases upon request for a permit to discharge to such water.

Class A Water. 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 activities.

Special Use. Waters which supply such treatment in distribution with suitable for aquatic life habitat, wildlife propagation, agricultural use, recreation, boating and aesthetics.

Quality Standards for Class A Waters:

<u>Item</u>	<u>Specifications</u>
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).

Quality Standards for Class A Water

Specification	Item
None detectable to man's activities.	1. Floating solids, silt, deposits, taste or odor producing substances
None	2. Grease, industrial wastes or other wastes
None	3. Toxic materials other than carbon disulfide; related or other wastes
Only amounts detectable to man's activities which will not cause the water to be objectionable as a drinking water source or which will not be detrimental to aquatic life or any other beneficial use established for the water.	4. Bacteria count
Range between 0.5 to 5.0	5. pH
None or less than 0.05 milligrams per liter	6. Dissolved oxygen
None and cannot be less than 30°C. Allowable range above normal remaining water temperature - none.	7. Temperature
The total coliform concentration, based on a volume of 5 samples during any 30-day period shall not exceed a geometric mean of 100 per 100 milliliters, and shall not exceed 1000 per 100 milliliters during any 30-day period except 400 per 100 milliliters.	8. Total coliform
Total phosphate shall not exceed 0.15 mg/l in any stream at the point where it enters any reservoir or lake, and 0.05 mg/l in any reservoir or lake, and 0.10 mg/l in streams and other flowing waters.	9. Total phosphate
None or less than 500 mg/l or less than that characteristic of natural conditions (whichever is less).	10. Total dissolved solids

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:

<u>Item</u>	<u>Specification</u>
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 coliforma. 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 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).

1. Floating solids, water-soluble solids, silt, and sludge.

2. Sludge, industrial wastes, or other wastes.

3. Toxic materials which are deleterious to fish and wildlife or which are harmful to man or other animals.

4. pH

5. Dissolved oxygen

6. Temperature

7. Total coliforma

The more stringent of the following shall apply. The total coliform concentration shall not exceed a geometric mean of 1000 per 100 milliliters and shall not exceed 200 per 100 milliliters in any 100 samples during any 30-day period.

The geometric mean of fecal coliform concentration shall not exceed that characteristic of natural conditions by more than 200 per 100 milliliters and shall not exceed 100 per 100 milliliters in any single sample.

The total collector concentration based on a minimum of 5 samples during a 10-day period shall not exceed a maximum value of 100 per 100 milliliters of shell water. Total suspended matter shall not exceed 100 milligrams per liter.

Total phosphorus shall not exceed 0.5 mg per liter. Total nitrogen shall not exceed 5.0 mg per liter. These limits shall be determined by standard methods (see Appendix B).

8. Total dissolved solids

9. Total phosphorus

10. Total nitrogen

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:

<u>Item</u>	<u>Specifications</u>
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.

Class 2 (Special) This classification includes water or pollution which is located in areas of unimproved or semi-improved land, industrial development, present or future, residential, commercial, local practices, and the untreated wastewater effluent by any activity.

Generalized term. Domestic water supply following complete treatment, including use, aquatic life, wildlife propagation, recreation, aesthetic, and industrial supply.

Quality Standards for Class 2 Water

- | <u>Classification</u> | <u>Item</u> |
|--|---|
| Only such sources attributable to the existence of man which will not cause the receiving waters injurious to fish or wildlife or impair the water for any beneficial use established for this class. | 1. Floating solids, waste oils, debris. |
| There shall not be objectionable odors or tastes as determined by the Department. | 2. Solids, industrial wastes, or other wastes. |
| Only such amounts as will not render the receiving waters injurious to fish and wildlife or impair the water for any beneficial use established for this class. | 3. Toxic materials, other deleterious substances, colored or other wastes, or foaming or other liquids. |
| Range between 6.5 to 8.5. | 4. pH. |
| For trout waters not less than 8.0 mg/l; for non-trout waters not less than 2.0 mg/l. | 5. Dissolved oxygen. |
| Shall not exceed 20°C for trout waters or 24°C for non-trout waters. Allowable temperature increase above normal receiving water temperature = 2°C. | 6. Temperature. |
| 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 500 of total bacteria exceed 1400 per 100 milliliters. | 7. Fecal coliform. |
| The annual geometric mean of fecal coliform concentration shall not exceed that characteristic of natural conditions or more than 100 per 100 milliliters nor shall the number of fecal coliform in a single sample exceed that characteristic of natural conditions by more than 500 per 100 milliliters. | |

Class 2 Waters: This classification is applied to areas of urban density immediately used for agriculture where pollutant sources include the highly altered watershed.

-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/l

9. Total dissolved solids.

Shall not exceed 500 mg/l or one-third above that characteristic of natural conditions (whichever is less).

1. Floating solids, including silt, mud, and sludge deposits.

Shall not exceed 10 mg/l in any receiving water for any beneficial use established for this class.

2. Sewage, industrial wastes or other wastes.

None which are not effectively controlled to the satisfaction of the Department.

3. Toxic chemicals; oil; petroleum products; color; odor; taste; or heated or cooled water.

None which are not effectively controlled to the satisfaction of the Department.

4. pH.

Range between 6.5 and 8.5.

5. Dissolved oxygen.

Not less than 3.0.

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:

<u>Item</u>	<u>Specifications</u>
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	7.0-9.2 ^a	
Dissolved Oxygen							
Single Value-mg/l	>	Aerobic ^b	5.0 ^b	5.0 ^b	Aerobic ^b	Aerobic ^b	
Chlorides							
Single Value-mg/l	<						
Phosphates as P							
Single Value-mg/l	<						
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

TO BE DETERMINED BY BIOASSAY

PARAMETER	AGRICULTURAL USE		AQUATIC LIFE		BATHING & WATER CONTACT SPORTS	DRINKING WATER SUPPLY	WILDLIFE PROPAGATION
	<	>	Cold Water	Warm Water			
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*

<u>Constituent</u>	<u>Maximum Allowable Level (mg/l)</u>
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

*"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:**

The following fluoride concentrations are required to be tested every three years for community water supplies.

<u>Constituent</u>	<u>Annual Average of Maximum Daily Air Temperature</u>	<u>Maximum Allowable, Milligrams/Liter</u>
	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:

<u>Constituent</u>	<u>Maximum Allowable Level (mg/l)</u>
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:

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

APPENDIX E

Secondary Drinking Water Standards*

<u>Constituent</u>	<u>Maximum Allowable Level (mg/l)</u>
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.

