

CITY OF BISHOP
1990 ANNUAL WATER QUALITY REPORT

INTRODUCTION

This is the second annual report to customers of the City of Bishop water system. The report describes features of the water system and the quality of the water.

The California Domestic Water Quality and Monitoring Regulations that were adopted in January 1989 include a new requirement on public information, Title 22, Section 64463.1. This section requires that each community water system distribute to each customer an annual report on the quality of water served. We encourage you to read this report and become familiar with the quality of water in the City of Bishop water system.

WATER SOURCES

The source of water for the City of Bishop is the underground aquifer of the Bishop cone. Water is pumped from the aquifer by three wells described below.

- A. Well #4 is the primary source of water for Bishop. The well is located approximately 3 miles west of Bishop and is 260 feet south of Highway 158 (West Line Street) near Bishop Creek. This well produced about 530 million gallons which was 93% of the City's water production.
- B. Well #2 is the backup source of water for Bishop. The well is located 400 feet north of Sierra Street and 550 feet west of Main Street. The well normally operates during April through September and produced about 20 million gallons which was 4% of the water production.
- C. Well #1 is an inactive well available for emergencies eg. a major fire. The well is located at the southwest corner of Warren St. and Church St. behind the Police Dept. This well is not used as a normal production source because some water quality tests have shown fluoride concentrations equal to the maximum State standard. The State maximum contaminant level (MCL) is 1.2 to 2.4 mg/l with an estimated standard for Bishop of 1.85 mg/l. Tests have shown a range of 2.4 to 2.8 mg/l for Well #1. Samples taken while Well #1 is operating have shown that the fluoride level drops to 0.3 mg/l or less within 1 block of Well #1 because the water mixes with other water in the system, and the fluoride is diluted. Because of a burned out motor at Well #4, Well #1 was operated during the summer and produced 16 million gallons which was 7% of the total water production.

WATER PERMIT AND STANDARDS

The City of Bishop operates under permit by the State of Calif. Dept. of Health Services (DHS). Our drinking water standards are established both by DHS and by the U.S. Environmental Protection Agency (EPA) in compliance with the Safe Drinking Water Act.

The drinking water standards fall into the following 2 categories:

- A. Primary Standards are mandatory health-related standards and relate to the effect of drinking water on the health of the community. These standards are set to protect public health from substances in water that may be immediately harmful to humans or affect their health if consumed for long periods of time.
- B. Secondary Standards relate to the aesthetic qualities of the water such as taste, mineral content, odor & clarity.

WATER QUALITY TESTING AND REPORTING

The water system is tested frequently in accordance with a schedule established by DHS. Water samples are taken by Public Works maintenance personnel. Bacteria samples are tested at Inyo County's laboratory. All other water samples are tested at other laboratories certified by DHS such as Clinical Laboratories of San Bernardino, Inc. Bacteriological samples are taken at least once a week at various locations throughout Bishop. Samples are also taken at Wells #4 & #2 monthly and at Well #1 quarterly. Samples for the physical quality of the water are taken monthly at various locations throughout the city. All test results are reported to DHS.

Radioactivity monitoring was done in 1985, 1987 & 1990. Additional monitoring will be done every 3 years beginning in Oct. 1993. The water sources have also been tested for organic chemicals and inorganic chemicals according to DHS requirements. The test results and standards are shown on the attached sheet. Further determinations of vulnerability will be made by DHS and may effect the extent and frequency of testing.

Instruments used to test water samples are very sensitive and sophisticated. They employ analytical techniques to measure concentrations in milligrams per liter (mg/l) which is equivalent to parts per million (ppm) and in micro grams per liter which is equivalent to parts per billion. These instruments are able to measure water characteristics in precise and minute quantities that previously were undetected. To put these measurements into some perspective, consider that one part per million in time would be one second in 11-1/2 days and in distance it would be one inch in 16 miles. One part per billion translates to one second in nearly 33 years or one inch in 15,800 miles.

WATER TREATMENT

The groundwater supply for the City of Bishop is excellent quality. Water from Wells #1 & #2 is not treated. Water from Well #4 is chlorinated at 2 locations: First where the water discharges from the well into the open storage reservoir; and second where the water flows from the reservoir into Bishop. Chlorine is used as a disinfectant to prevent water-borne diseases and stop growths from forming inside the pipe network.

SUMMARY

What does this all mean to the consumer in the City of Bishop? We feel that the following are important facts our customers should keep in mind:

- A. The quality of water is monitored regularly and thoroughly in accordance with standards set forth by the State Department of Health Services.
- B. The water is safe to drink. Repeated testing shows no contamination in the City's water.
- C. The water quality is excellent. The organic and inorganic chemicals are either not detectable or, if present, are found in a fraction of the maximum contaminant level.
- D. The water is aesthetically pleasing. This means that the water is soft, clear, clean and has very low concentrations of constituents in both adopted and unadopted secondary standards.
- E. The primary sources of water for the City, Wells #4 and #2 have low levels of fluoride of about 0.3 mg/l. Fluoride is not added to the water supply.
- F. The sodium levels in the water supply are very low. This is especially good news if you are concerned about your salt intake.
- G. The subject of water quality may be more involved than one would think. If you would like to know more about water quality or if you have specific questions regarding Bishop's water supply, please call us at 873-8458 or stop by Public Works at City Hall, 377 W. Line St., Bishop.

Andrew Boyd
Public Services Director
March 1991

MARCH 1991

CITY OF BISHOP
ANNUAL WATER QUALITY REPORT

	MAXIMUM CONTAMINANT LEVEL (STATE)	WELL #1	WELL #2	WELL #4
PERCENT USAGE BY SOURCE		3%	4%	93%
<u>PRIMARY STANDARDS - MANDATORY HEALTH-RELATED STANDARDS</u>				
<u>CLARITY</u>				
Turbidity (FTU)	5.0	0.5	0.1	0.1
<u>MICROBIOLOGICAL</u>				
Coliform Bacteria (Cfu/100ml)	10	0	0	0
<u>ORGANIC CHEMICALS (mg/L)</u>				
Atrazine	0.003	N/D	N/D	N/D
Bentazon	0.018	N/D	N/D	N/D
Benzene	0.001	N/D	N/D	N/D
Carbofuran	0.018	N/D	N/D	N/D
Carbon Tetrachloride	0.0005	N/D	N/D	N/D
Chlordane	0.0001	N/D	N/D	N/D
2,4-D	0.1	N/D	N/D	N/D
Dibromochloropropane	0.0002	N/D	N/D	N/D
para-Dichlorobenzene	0.005	N/D	N/D	N/D
1,1-Dichloroethane	0.0005	N/D	N/D	N/D
1,2-Dichloroethane	0.0005	N/D	N/D	N/D
1,1-Dichloroethylene	0.006	N/D	N/D	N/D
cis-1,2-Dichloroethylene	0.006	N/D	N/D	N/D
Trans-1,2-Dichloropropane	0.01	N/D	N/D	N/D
1,2-Dichloropropane	0.005	N/D	N/D	N/D
1,3-Dichloropropane	0.0005	N/D	N/D	N/D
Di (2-ethylhexyl) Phthalate	0.004	N/D	N/D	N/D
Endrin	0.0002	N/D	N/D	N/D
Ethylbenzene	0.680	N/D	N/D	N/D
Ethylene Dibromide	0.00002	N/D	N/D	N/D
Glyphosate	0.7	N/D	N/D	N/D
Heptachlor	0.00001	N/D	N/D	N/D
Heptachlor Epoxide	0.00001	N/D	N/D	N/D
Lindane	0.004	N/D	N/D	N/D
Methoxychlor	0.1	N/D	N/D	N/D
Molinate	0.02	N/D	N/D	N/D
Monochlorobenzene	0.030	N/D	N/D	N/D
Simazine	0.01	N/D	N/D	N/D
1,1,2,2-Tetrachloroethane	0.032	N/D	N/D	N/D
Tetrachloroethylene	0.005	N/D	N/D	N/D
Thiobencarb	0.07	N/D	N/D	N/D

PERCENT USAGE BY SOURCE	MAXIMUM	WELL #1	WELL #2	WELL #4
	CONTAMINANT LEVEL (STATE)	3%	4%	93%
Total Trihalomethanes	0.10	N/D	N/D	N/D
Toxaphene	0.005	N/D	N/D	N/D
2,4,5-TP (Silvex)	0.01	N/D	N/D	N/D
1,1-1-Trichloroethane	0.200	N/D	N/D	N/D
1,1,2-Trichloroethane	0.032	N/D	N/D	N/D
Trichloroethylene	0.005	N/D	N/D	N/D
Trichlorofluoromethane (Feron 11)	0.15	N/D	N/D	N/D
1,1,2-Trichloro-1,2,2- trifluoroethane (Feon 113)	1.2	N/D	N/D	N/D
Vinyl Chloride	0.0005	N/D	N/D	N/D
Xylene(s)				
<u>INORGANIC CHEMICALS (mg/L)</u>				
Aluminum	1.	N/D	N/D	N/D
Arsenic	0.05	N/D	N/D	N/D
Asbestos	NS	N/A	N/A	N/A
Barium	1.	N/D	N/D	N/D
Cadmium	0.010	N/D	N/D	N/D
Chromium	0.05	N/D	N/D	N/D
Fluoride	1.4 - 2.4	2.6	0.3	0.3
Lead	0.05	N/D	N/D	N/D
Mercury	0.002	N/D	N/D	N/D
Nitrate (as NO3)	45.0	6.7	1.4	7.1
Selenium	0.01	N/D	N/D	N/D
Silver	0.05	N/D	N/D	N/D
<u>RADIONUCLIDES (pCi/l)</u>				
Gross Alpha	15	3.3±1.1	1.5±0.7	1.1±0.9
Gross Beta	50	N/A	N/A	N/A
Radium 226	5	N/A	N/A	N/A
Radium 228	5	N/A	N/A	N/A
Radon	NS	N/A	N/A	N/A
Strontium-90	8	N/A	N/A	N/A
Tritium	20,000	N/A	N/A	N/A
Uranium	20	N/A	N/A	N/A
<u>SECONDARY STANDARDS - AESTHETIC STANDARDS</u>				
<u>CHEMICAL PARAMETERS (mg/L)</u>				
Chloride	500	6.8	1.1	1.3
Copper	1.0	N/D	N/D	N/D
Foaming Agents (MBAS)	0.5	N/D	N/D	N/D

PERCENT USAGE BY SOURCE	MAXIMUM	WELL #1	WELL #2	WELL#4
	CONTAMINANT LEVEL (STATE)	3%	4%	93%
Iron	0.3	0.17(1)	0.3(1)	N/D
Manganese	0.05	N/D	N/D	N/D
Color (units)	15.0	<3.0	<3.0	<3.0
Odor-Threshold (units)	3.0	2.0	2.0	1.0
Sulfate	500.	28.7	9.1	1.1
Total Dissolved Solids	1000.	130.8	94.1	73.2
Zinc	5.0	N/D	N/D	N/D

ADDITIONAL PARAMETERS

Calcium (mg/L)	NS	9.6	22.4	14.1
Hardness (CaCO ₃) (mg/L)	NS	43.6	70.4	51.2
Heterotrophic Plate Count (cfu/ml)	NS	N/A	N/A	N/A
Magnesium (mg/L)	NS	4.8	3.5	3.9
PH (units)	NS	8.73	7.91	7.80
Potassium (mg/L)	NS	3.2	2.6	2.0
Sodium (mg/L)	NS	42.4(1)	9.2	6.1

KEY TO APPREVIATIONS

MCL	=	Maximum Contaminant Level
N/D	=	Monitored for but Not Detected - detection limits are available upon request.
NS	=	No Standard
N/A	=	Not Analyzed - Standards were either not applicable to the City of Bishop or are only proposed standards.
NTU	=	Nephelometric Turbidity Units. This is a measure of the suspended material in water.
mg/L	=	Milligrams per liter (parts per million)
pCi/L	=	Picocuries per liter
cfu/100mL	=	Colony-forming units per 100 milliliters
<	=	Less than

(1) Test results are relatively high. Wells were sampled in winter after a long inactive period which may have caused test results to be high.

City of Bishop
Public Works Dept.
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