CONVERSION FACTORS

For this report, the inch-pound system of units was used. For readers who prefer to use metric (SI) units rather than inch-pound units, the conversion factors for the terms in this report are listed below:

Multiply	By	To obtain
feet (ft)	0.3048	meters
inches (in.)	25.4	millimeters
miles (mi)	1.609	kilometers
square miles (mi^2)	2.590	square kilometers

Water temperature is given in degrees Celsius (°C), which can be converted to degrees Fahrenheit (°F) by the following equation:

$$\text{Temp. °F} = 1.8\ (\text{temp.°C}) + 32.$$

Chemical concentration is given in milligrams per liter (mg/L) or micrograms per liter (µg/L). Milligrams per liter is a unit expressing the solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter. For concentrations less than 7,000 mg/L, the numerical value is about the same as for concentrations in parts per million.

Specific conductance is given in microsiemens per centimeter (µS/cm) at 25°C. Microsiemens per centimeter is numerically equal to micromhos per centimeter.

"Sea level" in this report refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)--a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Mean Sea Level of 1929."

TABLE 3.--Chemical analyses of water from selected wells, 1977-84--Continued

Well	Date	Lead, dissolved (µg/L as Pb)	Lithium, dissolved (µg/L as Li)	Manganese, total recoverable (µg/L as Mn)	Manganese, dissolved (µg/L as Mn)	Mercury, dissolved (µg/L as Hg)	Nickel, dissolved (µg/L as Ni)	Strontium, dissolved (µg/L as Sr)	Vanadium, dissolved (µg/L as V)	Zinc, dissolved (µg/L as Zn)	Phenols, total (µg/L)	Methylene blue active substance (mg/L)
26S/40E-23D1	83-10-31	--	--	--	--	--	--	--	--	--	--	--
26S/40E-23D2	83-10-31	--	--	--	--	--	--	--	--	--	--	--
26S/40E-23G1	84-08-07	<50	1000	--	110	--	--	4700	<30	110	--	--
26S/40E-23J1	84-08-09	<10	210	--	21	--	--	2200	<6	7	--	--
26S/40E-24C1	78-06-23	--	--	--	--	--	--	--	--	--	--	
	80-05-21	--	--	--	--	--	--	--	--	--	--	--
	82-06-10	--	--	--	1500	--	--	--	--	--	--	--
26S/40E-26F1	82-06-14	--	--	--	17	--	--	--	--	--	--	--
26S/40E-28J1	78-06-29	--	--	--	<10	--	--	--	--	--	--	
	79-06-01	--	--	--	--	--	--	--	--	--	--	--
	80-05-27	--	--	--	--	--	--	--	--	--	--	--
	82-06-11	--	--	--	17	--	--	--	--	--	--	--
	84-08-10	<10	210	--	21	--	--	2200	<6	7	--	--
26S/40E-30K1	77-03-23	--	--	--	<10	--	--	--	--	--	--	
	78-11-13	--	--	<10	--	--	--	--	--	--	--	--
26S/40E-30K2	77-02-08	--	--	--	--	--	--	--	--	--	--	--
	77-02-28	--	--	--	<10	--	--	--	--	--	--	--
	78-11-09	--	--	<10	--	--	--	--	--	--	--	--
26S/40E-30K3	77-03-23	--	--	<10	--	--	--	--	--	--	--	
	78-11-09	--	--	<10	--	--	--	--	--	--	--	--
26S/40E-32K1	77-11-12	--	--	<10	--	--	--	--	--	--	--	--
	77-12-01	--	--	<10	--	--	--	--	--	--	--	--
	78-11-09	--	--	<10	--	--	--	--	--	--	--	--
26S/40E-33P4	77-03-23	--	--	--	<10	--	--	--	--	--	--	
	78-11-13	--	--	<10	--	--	--	--	--	--	--	--
26S/40E-34N1	78-07-31	--	--	<10	--	--	--	--	--	--	--	0.02
	80-03-29	--	--	6	--	--	--	--	--	--	--	.06
26S/40E-36A1	78-06-29	--	--	--	<10	--	--	--	--	--	--	--
	79-06-06	--	--	--	--	--	--	--	--	--	--	--
	80-05-27	--	--	--	--	--	--	--	--	--	--	--
	82-06-14	--	--	--	26	--	--	--	--	--	--	--
26S/41E-7D1	78-06-29	--	--	--	1900	--	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--	--	--	--	--	--
	80-05-21	--	--	--	--	--	--	--	--	--	--	--
26S/41E-7E1	78-06-29	--	--	--	190	--	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--	--	--	--	--	--
	80-05-20	--	--	--	--	--	--	--	--	--	--	--
	82-06-10	--	--	--	<10	--	--	--	--	--	--	--
26S/41E-7G1	78-06-29	--	--	--	5	--	--	--	--	--	--	--
	79-05-17	--	--	--	--	--	--	--	--	--	--	--
27S/40E-2J1	78-06-28	--	--	--	<10	--	--	--	--	--	--	--
	79-06-01	--	--	--	--	--	--	--	--	--	--	--
	80-05-23	--	--	--	--	--	--	--	--	--	--	--
27S/40E-3R1	78-06-29	--	--	--	<10	--	--	--	--	--	--	--
	79-06-06	--	--	--	--	--	--	--	--	--	--	--
	80-05-27	--	--	--	--	--	--	--	--	--	--	--
	82-06-15	--	--	--	33	--	--	--	--	--	--	--
27S/40E-4C2	77-03-23	--	--	--	<10	--	--	--	--	--	--	--
	78-11-13	--	--	<10	--	--	--	--	--	--	--	--
	78-12-27	--	--	<10	--	--	--	--	--	--	--	--
27S/40E-4L1	78-11-09	--	--	<10	--	--	--	--	--	--	--	--
27S/40E-10R1	78-06-28	--	--	--	4000	--	--	--	--	--	--	--
	79-06-06	--	--	--	--	--	--	--	--	--	--	--
	80-05-28	--	--	--	--	--	--	--	--	--	--	--

The U.S. Environmental Protection Agency (EPA) has established primary and secondary maximum contaminant levels for public water supplies (table 4). Primary maximum contaminant levels pertain to constituents that may present a health hazard; secondary maximum contaminant levels pertain to constituents that may be detrimental to esthetic qualities but do not present a health hazard.

During 1978-84, 79 wells in the study area yielded water containing one or more chemical constituents that equaled or exceeded EPA primary or secondary maximum contaminant levels for drinking water (see table 4). EPA primary maximum contaminant levels for arsenic and fluoride were exceeded in 38 and 37 percent, respectively, of the wells sampled. Concentrations of cadmium, lead, mercury, and nitrate exceeded primary maximum contaminant levels in less than 3 percent of the wells sampled. Concentrations of barium and chromium did not exceed primary maximum contaminant levels in any of the wells sampled.

The EPA secondary maximum contaminant levels for dissolved solids, chloride, and sulfate were exceeded in many of the wells. Dissolved-solids concentrations ranged from 190 to 67,000 mg/L; about 85 percent of the wells sampled yielded water with dissolved-solids concentrations exceeding 500 mg/L, the secondary maximum contaminant level. More than 59 percent of the wells sampled yielded water with dissolved-solids concentrations exceeding 1,000 mg/L. Chloride concentrations ranged from 17 to 39,000 mg/L; about 47 percent of the wells sampled yielded water with chloride concentrations exceeding the secondary maximum contaminant level of 250 mg/L. Sulfate concentrations ranged from 2.6 to 9,000 mg/L; more than 37 percent of the wells sampled yielded water with sulfate concentrations exceeding the secondary maximum contaminant level of 250 mg/L. Concentrations of phenols equaled or exceeded the secondary maximum contaminant level in all seven wells sampled. Among other chemical constituents that exceeded EPA secondary maximum contaminant levels are manganese and iron--in 38 and 35 percent, respectively, of the wells sampled. Concentrations of copper and zinc did not exceed secondary maximum contaminant levels in any of the wells sampled.

Water samples from eight wells in township 26 south, range 40 east, near the industrial-waste ponds of the China Lake Naval Weapons Center in 1984 were analyzed for the presence of selected purgeable (volatile) organic compounds designated "priority pollutants" by the Environmental Protection Agency (Keith and Telliard, 1979). Concern about organic chemicals in the environment is related primarily to the danger they pose to human health. Wells sampled for organic priority pollutants are: 26S/40E-14L1, -15N2, -22B1, -22H1, -22H3, -22P3, -22P4, and -28J1 (pl. 1). The selected priority pollutants analyzed for are:

Dichlorobromomethane	Chloroethane	1,1,2-Trichloroethane
Carbon tetrachloride	Ethylbenzene	1,1,2,2-Tetrachloroethane
1,2-Dichloroethane	Methyl bromide	1,2-Dichloropropane
Bromoform	Methylene chloride	1,3-Dichloropropane
Chlorodibromomethane	Tetrachloroethylene	2-Chloroethyl vinyl ether
Chloroform	Trichlorofluoromethane	Dichlorodifluoromethane
Toluene	1,1-Dichloroethane	Vinyl chloride
Benzene	1,1-Dichloroethylene	Trichloroethylene
Chlorobenzene	1,1,1-Trichloroethane	

An additional organic compound, chloroethylene (not on the list of priority pollutants) was also analyzed for.

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ILLUSTRATIONS

TABLES