Table 4.22
November 30, 2004 Monitoring Well Groundwater Sample Analytical Results
Volatile Organic Compounds, Metals, and Conventional Water Quality Parameters
Mission Bay Landfill
San Diego, California

Analytes	PHG[5] (µg/L)	Ocean Plan[6] (µg/L)	PRG[7] (µg/L)	Sample Number							
				MBW1	MBW2	MBW3	MBE4	MBW5	MBE6	MBW7	MW10
METALS (µg/L)											
Arsenic	**0.0040**	8.0	0.045	**4.0**	**5.0**	**10.0**	**16.0**	**12.0**	**6.0**	**<13.0**	**1.0**
Barium	**2,000**	NS	2,600	NA	NA	NA	259.0	NA	NA	NA	NA
Chromium	NS	190,000	**54,747**	<4.0	<4.0	4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Iron	NS	NS	**10,949.88**	NA	NA	NA	90.0	NA	NA	NA	NA
Molybdenum	NS	NS	**180.0**	NA	NA	NA	**214.0**	NA	NA	NA	NA
Nickel	12.0	**5.0**	730.0[b]	NA	NA	NA	**17.0**	NA	NA	NA	NA
Lead	**2.0**	**2.0**	NS	NA	NA	NA	<1.0	NA	NA	NA	NA
Antimony	20.0	NS	**15.0**	NA	NA	NA	2.0	NA	NA	NA	NA
Selenium	NS	**15.0**	180.0	NA	NA	NA	**36.0**	NA	NA	NA	NA
Thallium	**0.10**	NS	2.4	**<0.6**	**<0.6**	**<0.6**	**<0.6**	**<0.6**	**<0.6**	**<0.6**	**<0.6**
Vanadium	NS	NS	**36.0**	NA	NA	NA	**67.0**	NA	NA	NA	NA
Zinc	NS	**20.0**	11,000	NA	NA	NA	**59.0**	NA	NA	NA	NA
VOCs (µg/L)											
Benzene	**0.15**	5.90	0.35	<0.28	<0.28	<0.28	**0.32**	<0.28	<0.28	<0.28	<0.28
Diethyl ether	NS	NS	NS	1.34	1.19	0.95	0.77	<0.33	<0.33	<0.33	<0.33
cis-1,2-Dichloroethene	NS	NS	**60.83**	<0.26	<0.26	<0.26	6.77	<0.26	<0.26	<0.26	<0.26
1,2-Dichloropropane	0.50	NS	**0.165**	<0.28	<0.28	<0.28	**0.54**	<0.28	<0.28	<0.28	<0.28
Vinyl chloride	0.05	36.0	**0.0198**[a]	<0.38	<0.38	<0.38	**0.80**	<0.38	<0.38	<0.38	<0.38
Methylene chloride	NS	NS	**4.276**	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35	<0.35
Total Xylenes	1,800	NS	**205.73**	<0.76	<0.76	<0.76	0.43	<0.76	<0.76	<0.76	<0.76
CONVENTIONAL WATER QUALITY PARAMETERS (Units specified)											
Ammonia as N (mg/L)	NS	**600.0**	NS	NA	NA	NA	6.96	NA	NA	NA	NA
Specific Conductance (µmho/cm)	NS	NS	NS	NA	NA	NA	81,400	NA	NA	NA	NA
Nitrate as N (mg/L)	NS	NS	NS	0.19	0.1	<0.009	0.16	0.09	0.009	0.09	0.10
Nitrite as N (mg/L)	NS	NS	NS	<0.007	<0.007	0.009	0.02	<0.007	<0.007	<0.007	<0.007
Oil & Grease	NS	NS	NS	NA	NA	NA	<1	NA	NA	NA	NA
pH (pH units)	NS	NS	NS	6.54	6.39	6.68	6.86	6.84	7.11	7.03	6.68
Total Dissolved Solids (mg/L)	NS	NS	NS	NA	NA	NA	48,600	NA	NA	NA	NA
Sulfate as SO4 (mg/L)	NS	NS	NS	807	2,710	10.9	2,320	3,100	1,950	1,320	4,410
Total Sulfide	NS	NS	NS	NA	NA	NA	<0.05	NA	NA	NA	NA

Notes:
1. All of the groundwater samples were analyzed for **volatile organic compounds** (VOCs) in general accordance with EPA Method 8260B, 12 metals (arsenic, barium, chromium, iron, molybdenum, nickel, lead, antimony, selenium, thallium, vanadium, and zinc) in general accordance with EPA Methods 6010/6020.
2. Laboratory Methods for the conventional water quality parameters are as follows: ammonia as N (SM4500 NH3 B,C), specific conductance (SM2510 B), nitrate as N (SM4500 NO3 E), nitrite as N (SM4500 NO2 B), oil & grease (EPA 413.1), pH (150.1), TDS (SM2540C), sulfate as SO4 (SM4500 SO4 E), and total sulfide (SM4500 S D).
3. Samples collected by EMCON on November 30, 2004.
4. <# - Sample result reported as less than the indicated laboratory detection limit for the analytical method used.
5. (5) Office of Environmental Health Hazard Assessment Public Health Goals for **Drinking Water**.
6. (6) California State Water Resources Control Board 2001, Ocean Plan: 6-month median.
7. (7) United States Environmental Protection Agency Region 9 Preliminary Remediation Goals for **Tap Water**.
8. NS = No standard available
9. NA = Not analyzed
10. a = standard for child/adult, Note in PRG table states"Non-Standard Method Applied (See User's Guide)"
11. b = PRG value denoted for Nickel (soluble salts)
12. The water quality criterion in **boldface** denotes the most stringent of the three (PHGs, Ocean Plan, and PRGs).
13. A reported concentration of an analyte in **boldface** denotes an exceedance of the most stringent water quality criteria.

Table 4.23
Monitoring Well Groundwater Sample Analytical Results Comparison
Conventional Concentration Metals (EPA Methods 6010/6020) and Ultra Low Concentration Metals (EPA Method 1669/1640)
Mission Bay Landfill
San Diego, California

Analytes	**Beryllium**		**Vanadium**		**Chromium**		**Cobalt**		**Nickel**		**Copper**		**Zinc**		**Arsenic**		**Selenium**		**Molybdenum**		**Silver**		**Cadmium**		**Antimony**		**Barium**		**Thallium**		**Lead**		**Mercury**	
Units	(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)		(µg/L)	
Most stringent criterion	1.0		36.0		54,747		730.0		5.0		3.0		20.0		0.004		15.0		180.0		0.7		0.07		15.0		2,000		0.1		2.0		0.04	
Analysis Code	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
MBW1	0.0127	NA	25.2	NA	16.7	<4.0	4.98	NA	4.69	NA	**21.8**	NA	**163.0**	NA	**1.16**	**4.0**	0.33	NA	3.95	NA	**2.27**	NA	**0.205**	NA	0.438	NA	1,670.0	NA	0.0287[b]	**<0.6**	1.9	NA	**0.109**	NA
MBW2	0.0243	NA	14.7	NA	1.45	<4.0	2.71	NA	3.3	NA	0.164	NA	2.12	NA	**13.4**	**5.0**	0.769	NA	7.19	NA	<0.02	NA	0.0216	NA	0.28	NA	1,630.0	NA	0.024[b]	**<0.6**	0.0322	NA	0.000739	NA
MBW3	0.0136	NA	6.83	NA	3.51	4.0	2.57	NA	0.624	NA	0.204	NA	3.36	NA	**0.148**	**10.0**	0.465	NA	0.894	NA	<0.02	NA	0.038	NA	0.2	NA	678.0	NA	0.0271[b]	**<0.6**	0.0228	NA	0.000719	NA
MBE4	0.0593	NA	**52.4**	**67.0**	1.73	<4.0	18.9	NA	**34.2**	**17.0**	**10.2**	NA	20.0	**59.0**	**19.6**	**16.0**	1.58	**36.0**	85.6	**214.0**	0.0366	NA	**0.124**	NA	0.889	2.0	657.0	259.0	0.026[b]	**<0.6**	0.374	<1.0	0.0042	NA
MBW5	0.002	NA	<0.85	NA	0.184	<4.0	9.25	NA	**8.99**	NA	2.96	NA	**118.0**	NA	**2.9**	**12.0**	0.183	NA	53.0	NA	0.0323	NA	**0.347**	NA	0.3	NA	63.2	NA	0.0304[b]	**<0.6**	0.0527	NA	0.0206	NA
MBE6	0.0013	NA	<0.85	NA	0.126	<4.0	0.754	NA	1.51	NA	0.654	NA	8.58	NA	**0.267**	**6.0**	<0.057	NA	21.6	NA	<0.02	NA	0.0633	NA	0.0993	NA	54.6	NA	0.025[b]	**<0.6**	0.0124	NA	0.000491	NA
MBW7	NA	NA	NA	NA	NA	<4.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	**<13.0**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**<0.6**	NA	NA	NA	NA
MW10	0.0024	NA	<0.85	NA	0.974	<4.0	1.74	NA	**5.18**	NA	1.82	NA	**68.1**	NA	**0.235**	**1.0**	0.623	NA	23.7	NA	<0.02	NA	0.0528	NA	0.753	NA	50.3	NA	0.0247[b]	**<0.6**	0.074	NA	0.00266	NA

Notes:
1. Results presented in table above are reported in micrograms per liter (µg/L).
2. Anaysis Code A = Samples collected by SCS Engineers on November 15 and 23, 2004 and December 9, 2004 and analyzed for Mercury in general accordance with EPA Method 1631 and 16 other metals (Beryllium, Vanadium, Chromium, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Molybdenum, Silver, Cadmium, Antimony, Barium, Thallium, Lead) in general accordance with EPA Method 1669/1640.
3. Analysis code B = Samples collected by EMCON on November 30, 2004 and analyzed for volatile organic compounds (VOCs) in general accordance with EPA Method 8260B, 12 metals (arsenic, barium, chromium, iron, molybdenum, nickel, lead, antimony, selenium, thallium, vanadium, and zinc) in general accordance with EPA Methods 6010/6020.
4. <# - Sample result reported as less than the indicated laboratory detection limit for the analytical method used.
5. Most stringent criterion was taken from three guidance documents 1) Office of Environmental Health Hazard Assessment Public Health Goals for Drinking Water, 2) California State Water Resources Control Board 2001, Ocean Plan: 6-month median, 3) United States Environmental Protection Agency Region 9 Preliminary Remediation Goals for Tap Water.
6. b = Sample results are less than 5X the blank.
7. NA = Not analyzed
8. A reported concentration of an analyte in **boldface** denotes an exceedance of the most stringent water quality criterion value.