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SEMIANNUAL GROUNDWATER MONITORING REPORT FOR FEBRUARY 2000

THE MONADNOCK COMPANY
18301 ARENTH AVENUE
CITY OF INDUSTRY, CALIFORNIA

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GROUNDWATER MONITORING REPORT
FEBRUARY 2000

THE MONADNOCK COMPANY
18301 ARENTH AVENUE
CITY OF INDUSTRY, CALIFORNIA

April 2000

Prepared by:

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EXECUTIVE SUMMARY

During the February 2000 monitoring event at the Monadnock site, water levels were monitored in all wells and water samples were collected in seven of the eight wells. Groundwater samples were analyzed for volatile organic compounds (VOCs), chromium, cadmium, and cyanide, in addition to 1,4-dioxane, N-nitrosodimethylamine (NDMA), and perchlorate.

The results of the February 2000 monitoring event indicate that the water table is currently near the midrange historically recorded at the site. Potentiometric surface contours demonstrate a westerly direction of groundwater flow at an average horizontal hydraulic gradient of about 0.006, which is at the low end of the historic range. A downward vertical hydraulic gradient exists, similar to previous monitoring events.

The February 2000 analytical results indicate that the shallow plume of VOC-impacted groundwater beneath the site is oriented in a southwesterly direction. The plume appears to be limited in lateral extent (crossgradient) and extends offsite. The primary VOCs in the plume consist of trichloroethene (TCE), 1,1-dichloroethene (1,1-DCE), and tetrachloroethene (PCE). The February 2000 results also indicate that 1,4-dioxane is present in several shallow wells.

Historic VOC concentration trends indicate that VOC levels onsite have declined substantially since monitoring began in July 1986. Concentrations onsite remained generally stable during operation of the groundwater remediation system from 1995 to 1998, but in February 1999 declined to the lowest levels historically recorded since shutdown of the system in June 1998. Concentrations have since increased to the levels previously observed in mid 1998, but remain similar to or lower than the concentrations observed during operation of the system. VOC concentrations in offsite well MW-12 have fluctuated appreciably and are currently near the lowest levels historically recorded.

Chromium and cyanide concentrations have historically exceeded MCLs, primarily in well MW-2, but are currently below MCLs, with the exception of chromium in well MW-12.

1.0 INTRODUCTION

This report presents the results for the February 2000 groundwater monitoring event at the Monadnock Company (Monadnock) facility (Figure 1), conducted by TRW Inc. (TRW) in accordance with the requirements of the California Regional Water Quality Control Board-Los Angeles Region (LARWQCB). This monitoring event is the second of two quarterly events requested by the LARWQCB, in their letter dated October 22, 1999, for the purpose of providing additional data to evaluate TRW's request for onsite groundwater closure.

1.1 Site Background

The Monadnock facility has been used to fabricate fasteners and electronic hardware since 1965. TRW was the owner and operator of the facility from 1968 to 1980. Previous manufacturing processes used at the facility included degreasing, heat treating, and metal plating. Volatile organic compounds (VOCs) and metals associated with these processes have been detected in groundwater beneath the facility. Additional information regarding the site history are provided in the site audit report (McLaren, 1990).

1.2 Hydrogeologic Conditions

The first occurrence of groundwater beneath the site and vicinity is about 30 feet below ground surface within fine-grained materials consisting primarily of silty clay and silty to clayey sand. A coarser grained, gravelly sand occurs below a depth of about 85 feet. Six monitoring wells and the onsite extraction well (MW-2) are completed in the fine-grained deposits to depths between 45 and 60 feet (Table 1). One monitoring well (MW-11) extends into the lower gravelly sand and is completed to a depth of 97 feet. Additional information regarding the site hydrogeologic conditions is presented in the site investigation and groundwater treatment system report prepared by ID Environmental Associates (IDEA, 1995).

1.3 Groundwater Monitoring Program

Four monitoring wells and the extraction well are located onsite, and three monitoring wells are located offsite, as shown on Figure 2. The groundwater monitoring program for the site, which is summarized in Table 1, includes semiannual water-level monitoring and sampling of all seven monitoring wells and the extraction well. Groundwater samples collected during the semiannual events are analyzed for halogenated volatile organics by EPA Method 8010, total chromium and cadmium by EPA Method 6010B, and total cyanide by EPA Method 335.2. Groundwater samples collected during this quarterly event were analyzed for these compounds as well as 1,4-dioxane by EPA Method 8270M, NDMA by EPA Method 625MOD, and perchlorate by EPA Method 300.

1.4 Groundwater Remediation System

A groundwater remediation system was implemented at the site in November 1995 utilizing shallow well MW-2 for extraction. Further details regarding the system are provided in Section 4.0.

2.0 GROUNDWATER MONITORING ACTIVITIES

2.1 Project Activities During Current Monitoring Period

No additional site investigation or well installation was conducted during this monitoring period.

2.2 Groundwater Monitoring, Sampling, and Analyses

TRW personnel conducted the February 2000 monitoring event. Water levels were measured in all wells on February 22, 2000. Groundwater samples were collected from seven of the eight wells on February 22, 2000. Well MW-1 was not sampled because the well casing has been damaged. TRW's standard field procedures are contained in Appendix A along with copies of the water-level measurement and groundwater purging logs.

3.0 RESULTS

3.1 Water-Level Elevations

Historic water-level elevation data for all monitoring wells are presented in Table 2. The historic data include the measured depths to groundwater and the calculated water-level elevations recorded for each well since June 1994. Potentiometric surface contours generated using the February 2000 water-level elevation data are presented on Figure 2. Hydrographs of water levels versus time in three representative wells located on and downgradient of the site (MW-2, MW-7, and MW-12) are presented on Figure 3.

The February 2000 water-level data indicate that the water table occurs at a depth of about 31 to 34 feet, which represents an increase of about 1.5 to 2 feet in most wells since the November 1999 monitoring event. Water levels have historically occurred at depths ranging from about 30 to 34 feet and are currently near the midrange historically recorded. The direction of groundwater flow in the shallow interval is westerly at an average horizontal hydraulic gradient of about 0.006, which is at the lower end of the historic range (0.006 to 0.01).

A vertical hydraulic gradient in the downward direction exists, as indicated by a water-level elevation difference (about 0.4 foot) between the completion intervals of shallow well MW-8 and deeper well MW-11. A downward vertical gradient has been observed during previous monitoring events, as indicated by an elevation difference that has typically been less than one foot.

3.2 Groundwater Analytical Results

Results of the February 2000 groundwater VOC analyses, in addition to historic results for previous monitoring events, are presented in Table 3. The results for three additional non-VOC compounds analyzed only in November 1999 and February 2000 are presented in Table 4. Total VOC isoconcentration contours were generated using the February 2000 analytical results and are shown on Figure 4. Graphs of VOC concentrations vs. time in three representative wells located on and downgradient of the site (MW-2, MW-7, and MW-12) are presented on Figure 5. Copies of the analytical laboratory reports and chain-of-custody forms are contained in Appendix B.

The February 2000 analytical results indicate that the plume of impacted groundwater beneath the site is oriented in a west-southwesterly direction, similar to the direction of groundwater flow. The axis of the plume is through the area of onsite well MW-2 and offsite well MW-12. The plume is limited in lateral extent, as crossgradient well MW-3 is not impacted, and crossgradient well MW-8 exhibits an appreciably lower concentration of total VOCs, relative to wells MW-2 and MW-12. VOC concentrations attenuate with depth, as deeper well MW-11 exhibits appreciably lower VOC concentrations than nearby shallow wells MW-2 and MW-7. The primary VOCs in the plume consist of TCE, 1,1-DCE, and PCE. The results of the additional analyses for 1,4-dioxane, NDMA, and perchlorate indicate that only 1,4-dioxane is present at detectable levels in wells MW-2, MW-7, MW-8, and MW-12.

Historic concentration trends indicate that VOC levels onsite have declined substantially since monitoring began in July 1986. Concentrations remained relatively stable from 1995 through 1998, while the groundwater remediation system was in operation, although a temporary increase occurred in early 1998. Following shutdown of the system in June 1998, VOC concentrations onsite declined to the lowest levels historically recorded in February 1999. Concentrations onsite have since increased to the levels previously observed in mid 1998 (August/September). These concentrations are similar to or lower than the concentrations observed during operation of the groundwater remediation system and are consistent with the historical declining trend that has been observed onsite. VOC concentrations in offsite well MW-12, which was installed in 1995, have fluctuated appreciably and are currently near the lowest levels historically recorded. The graphs of VOC concentrations versus time in wells MW-2, MW-7, and MW-12 demonstrate this trend (Figure 5).

Historic metals and cyanide results indicate that chromium and cyanide have exceeded Maximum Contaminant Levels (MCLs) during previous monitoring events. However, these impacts have been observed primarily in well MW-2. Concentrations of both compounds have declined substantially since the mid 1990s and are currently below the MCLs, with the exception of chromium in well MW-12 (54 µg/l), which slightly exceeds the MCL (50 µg/l).

3.3 QA/QC Results

Laboratory results for the February 2000 monitoring event were reviewed in accordance with U.S. Environmental Protection Agency (EPA) guidelines for data validation (National Functional Guidelines for Organic Data Review, June 1991). The data validation process consisted of reviewing the laboratory results for the following parameters: 1) completeness of the data package, 2) compliance with EPA-required holding times, 3) surrogate recovery results for each well sample, 4) agreement of dilution factors with reported detection limits, 5) presence or absence of analytes in the equipment, trip, and method blanks, 6) percent recovery and relative percent difference (RPD) results for matrix spike and matrix spike duplicate (MS/MSD) analyses, 7) percent recovery results for laboratory control samples (LCS), and 8) RPD for duplicate field samples submitted to the laboratory blind.

Results of the data validation indicated the laboratory data package was complete and no analysis holding times were exceeded. Reported detection limits for the perchlorate and N-Nitrosodimethylamine (NDMA) analyses were consistent with the sample dilution factors. Surrogate recovery results for each well sample were within acceptable limits with the exception of the surrogate recovery results for the N-Nitrosodimethylamine (NDMA) analyses, which were unavailable due to poor chromatography of the internal standard. VOCs were not detected in the trip blank. The laboratory method blank results indicate that no detectable concentrations of VOCs, cyanide, NDMA, 1,4-dioxane, or perchlorate were present. Laboratory method blank results were not reported for the cadmium or chromium analyses. The results of the LCSs indicate that all percent recoveries for VOCs, cadmium, chromium, perchlorate, and the 1,4-dioxane analyses performed by Centrum Analytical Laboratories were within acceptable limits. LCS results for cyanide and the 1,4-dioxane analyses performed by Tuesdail Laboratories were not available. In addition, the MS/MSD pairs for VOCs, metals, and 1,4-dioxane were analyzed as laboratory control sample/laboratory control duplicates (LCS/LCD) and the results indicated percent recoveries and RPDs within acceptable limits. The MS/MSD results for perchlorate and NDMA were within acceptable limits. MS/MSD results for cyanide were not available. The RPD results for duplicate field sample MW-2 were 72% for cadmium, 8% for chromium, 0% for chloroform, 4% for 1,1-dichloroethene, 9% for tetrachloroethene, 3% for 1,1,2-trichloroethane, 6% for trichloroethene, and 0% for 1,4-dioxane.

4.0 GROUNDWATER REMEDIATION SYSTEM

The onsite groundwater remediation system is a pump-and-treat system utilizing shallow well MW-2. Extracted groundwater is treated onsite using carbon adsorption and ion exchange units, and is discharged to the onsite storm-drain system under a National Pollution Discharge Elimination System (NPDES) Permit (Permit No. CAD000048934).

The system began operation in November 1995 and operated continuously until June 1998, when well MW-2 sustained damage to the wellhead during site construction activities. The system has been out of service since that time. The system operated at an average flow rate of

about 0.6 gallons per minute, and extracted a total of about 627,000 gallons of groundwater between November 1995 and June 1998. Approximately 2.3 pounds of VOCs were removed from the extracted groundwater. Additional information regarding the groundwater system are presented in the site investigation and groundwater treatment system report prepared by ID Environmental Associates (IDEA, 1995).

5.0 REFERENCES

IDEA (Id Environmental Associates). 1995. Report of Monitoring Well Installation and Implementation of a Groundwater Remediation System, Monadnock Company Facility, 18301 Arenth Avenue, City of Industry, California. December.

McLaren. 1990. Site Audit of The Monadnock Company at 18301 East Arenth Avenue, City of Industry, California. February.

U.S. Environmental Protection Agency (EPA), 1991. National Functional Guidelines for Organic Data Review. June.

TABLES

1 Well Completions and Sampling Information
2 Historic Water-Level Elevation Measurements
3 Historic Groundwater Analytical Results
4 Analytical Results For 1,4-Dioxane, NDMA, and Perchlorate

TABLE 1

WELL COMPLETIONS AND SAMPLING INFORMATION

Well Number	Screen Interval (feet bgs)	Total Depth (feet bgs)	Top of Casing Elevation	Sampling Schedule (annual quarters)	EPA Test Methods
MW-1	29-49	49	412.68	1st and 3rd	8010 6010B 335.2
MW-2	25-45	45	408.01	1st and 3rd	8010 6010B 335.2
MW-3	24-44	44	408.52	1st and 3rd	8010 6010B 335.2
MW-4	20-60	60	412.95	1st and 3rd	8010 6010B 335.2
MW-7	26-56	56	409.16	1st and 3rd	8010 6010B 335.2
MW-8	26-56	56	409.00	1st and 3rd	8010 6010B 335.2
MW-11	77-97	97	408.93	1st and 3rd	8010 6010B 335.2
MW-12	19-49	49	406.91	1st and 3rd	8010 6010B 335.2

bgs - below ground surface

TABLE 2

HISTORIC WATER-LEVEL ELEVATION MEASUREMENTS

Well Number	Date Measured	Depth to Water (feet below top of casing)	Top of Casing Elevation [a] (feet, MSL)	Water Surface Elevation [a] (feet, MSL)
MW-1	Jun-94	32.27	412.68	380.41
	Aug-94	32.49		380.19
	Mar-95	31.82		380.86
	Aug-95	31.55		381.13
	Feb-96	32.57		380.11
	Aug-96	32.70		379.98
	Feb-97	32.13		380.55
	Aug-97	32.61		380.07
	Feb-98	32.73		379.95
	Aug-98	NM		NA
	Feb-99	33.26		379.42
	Aug-99	NM		NA
	Nov-99	NM		NA
	Feb-00	34.09		378.59
MW-2	Jun-94	30.25	408.01	377.76
	Aug-94	30.55		377.46
	Mar-95	29.73		378.28
	Aug-95	29.84		378.17
	Feb-96	NM		NA
	Aug-96	NM		NA
	Feb-97	NM		NA
	Aug-97	NM		NA
	Feb-98	NM		NA
	Sep-98*	29.88		378.13
	Feb-99	31.15		376.86
	Aug-99	32.99		375.02
	Nov-99	32.92		375.09
	Feb-00	31.47		376.54
MW-3	Jun-94	30.21	408.52	378.31
	Aug-94	30.74		377.78
	Mar-95	29.86		378.66
	Aug-95	29.94		378.58
	Feb-96	30.89		377.63
	Aug-96	31.05		377.47
	Feb-97	30.39		378.13
	Aug-97	31.00		377.52
	Feb-98	30.94		377.58
	Aug-98	29.20		379.32
	Feb-99	31.35		377.17
	Aug-99	33.21		375.31
	Nov-99	33.00		375.52
	Feb-00	31.20		377.32

TABLE 2

HISTORIC WATER-LEVEL ELEVATION MEASUREMENTS

Well Number	Date Measured	Depth to Water (feet below top of casing)	Top of Casing Elevation [a] (feet, MSL)	Water Surface Elevation [a] (feet, MSL)
MW-4	Jun-94	32.80	412.95	380.15
	Aug-94	32.99		379.96
	Mar-95	32.28		380.67
	Aug-95	32.04		380.91
	Feb-96	33.05		379.90
	Aug-96	33.17		379.78
	Feb-97	32.57		380.38
	Aug-97	33.10		379.85
	Feb-98	33.23		379.72
	Aug-98	31.05		381.90
	Feb-99	33.35		379.60
	Aug-99	34.43		378.52
	Nov-99	34.52		378.43
	Feb-00	34.11		378.84
MW-7	Jun-94	31.35	409.16	377.81
	Aug-94	31.71		377.45
	Mar-95	31.03		378.13
	Aug-95	30.98		378.18
	Feb-96	32.06		377.10
	Aug-96	32.11		377.05
	Feb-97	31.41		377.75
	Aug-97	32.15		377.01
	Feb-98	31.92		377.24
	Aug-98	30.25		378.91
	Feb-99	32.40		376.76
	Aug-99	34.20		374.96
	Nov-99	33.95		375.21
	Feb-00	32.55		376.61
MW-8	Jun-94	31.25	409.00	377.75
	Aug-94	31.54		377.46
	Mar-95	30.95		378.05
	Aug-95	30.75		378.25
	Feb-96	31.66		377.34
	Aug-96	31.78		377.22
	Feb-97	31.20		377.80
	Aug-97	31.72		377.28
	Feb-98	31.77		377.23
	Aug-98	29.95		379.05
	Feb-99	32.20		376.80
	Aug-99	33.40		375.60
	Nov-99	33.28		375.72
	Feb-00	32.41		376.59

TABLE 2

HISTORIC WATER-LEVEL ELEVATION MEASUREMENTS

Well Number	Date Measured	Depth to Water (feet below top of casing)	Top of Casing Elevation [a] (feet, MSL)	Water Surface Elevation [a] (feet, MSL)
MW-11	Jun-94	31.59	408.93	377.34
	Aug-94	32.07		376.86
	Mar-95	31.26		377.67
	Aug-95	31.28		377.65
	Feb-96	32.13		376.80
	Aug-96	32.35		376.58
	Feb-97	31.65		377.28
	Aug-97	32.30		376.63
	Feb-98	32.25		376.68
	Aug-98	30.40		378.53
	Feb-99	32.95		375.98
	Aug-99	34.78		374.15
	Nov-99	34.37		374.56
	Feb-00	32.73		376.20
MW-12	Aug-95	30.50	406.91	376.41
	Feb-96	30.70		376.21
	Aug-96	30.95		375.96
	Feb-97	30.00		376.91
	Aug-97	31.23		375.68
	Feb-98	31.10		375.81
	Aug-98	29.78		377.13
	Feb-99	32.00		374.91
	Aug-99	33.77		373.14
	Nov-99	34.00		372.91
	Feb-00	31.20		375.71

[a] - Elevations relative to mean sea level (MSL)
NM - Not Measured
NA - Not Available
* - Water level measured on September 29, 1998.

TABLE 3

HISTORIC GROUNDWATER ANALYTICAL RESULTS

Well Number	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCA (µg/l)	1,1-DCE (µg/l)	1,2-DCA (µg/l)	cis-1,2-DCE (µg/l)	CFM (µg/l)	DFM (µg/l)	PCE (µg/l)	TCE (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Cyanide (mg/l)
Drinking Water Standard	**200**	**32**	**5**	**6**	**0.5**	**6**	**100[1]**	**NE**	**5**	**5**	**10**	**50**	**0.2[2]**
MW-1													
Jul-86	<25	NA	NA	NA	NA	ND	NA	ND	<25	<25	NA	NA	NA
Sep-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Nov-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Feb-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Mar-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Sep-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Feb-88	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Jan-89	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	NA	NA	NA
Jun-89	ND	NA	NA	ND	NA	ND	NA	ND	ND	ND	NA	NA	NA
Jan-90	ND	NA	NA	ND	NA	ND	NA	ND	1.3	ND	NA	NA	NA
Jun-94	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	NA	NA	NA
Aug-94	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<1	7.7	<0.01
Mar-95	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Aug-95	<1	<1	<1	1.5	<1	ND	<1	ND	<1	<1	<5	<10	<0.1
Feb-96	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.2
Aug-96	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Feb-97	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Aug-97	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Feb-98	<1	<1	<1	<1	<1	ND	<1	ND	1.06	<1	<5	<10	<0.01
Aug-98	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS
Feb-99	NS	NS	NS	NS	NS	ND	NS	NS	NS	NS	NS	NS	NS
MW-2													
Jul-86	380	NA	NA	NA	NA	ND	NA	ND	310	710	NA	NA	NA
Sep-86	180	NA	NA	NA	NA	ND	NA	ND	600	560	NA	NA	NA
Nov-86	350	NA	NA	NA	NA	ND	NA	ND	770	710	NA	NA	NA
Feb-87	77	NA	NA	NA	NA	ND	NA	ND	190	620	NA	NA	NA
Mar-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Sep-87	12	NA	NA	NA	NA	ND	NA	ND	102	182	NA	NA	NA
Feb-88	25	NA	NA	NA	NA	ND	NA	ND	78	102	NA	NA	NA
Jan-89	ND	NA	NA	NA	NA	ND	NA	ND	70	120	NA	NA	NA
Jun-89	ND	NA	NA	180	NA	ND	NA	ND	320	270	NA	NA	NA
Jan-90	7	NA	NA	840	NA	ND	NA	ND	410	460	NA	NA	NA
Jun-94	<1	21	10	120	3.3	ND	2.4	ND	130	590	NA	NA	NA
Aug-94	<1	19	8.6	160	3.4	ND	1.3	ND	100	390	<1	162	0.57
Mar-95	<1	17.5	8.3	176	4.1	ND	2.5	ND	102	330	<5	206	<0.01
Aug-95	<1	<1	5.8	82	2	ND	2.1	ND	12	170	<5	164	1.82
Feb-96	<2.5	3.5	<2.5	98	<2.5	ND	<2.5	ND	69	200	<5	85.6	1.60
Aug-96	<1	5.3	3.6	95	<1	ND	1.1	ND	53	220	<5	60.8	0.25

TABLE 3

HISTORIC GROUNDWATER ANALYTICAL RESULTS

Well Number	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCA (µg/l)	1,1-DCE (µg/l)	1,2-DCA (µg/l)	cis-1,2-DCE (µg/l)	CFM (µg/l)	DFM (µg/l)	PCE (µg/l)	TCE (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Cyanide (mg/l)
Drinking Water Standard	**200**	**32**	**5**	**6**	**0.5**	**6**	**100[1]**	**NE**	**5**	**5**	**10**	**50**	**0.2[2]**
Aug-96 Dup	<1	5.5	3.7	97	1.2	ND	1.2	ND	54	220	NA	NA	NA
Feb-97	<1	4.7	2.2	70	1.2	ND	<1	ND	51.8	220	<5	43.4	0.693
Aug-97	<5	<5	<5	160	<5	ND	<5	ND	79	260	<5	42	0.16
Feb-98	<1	6.76	5.65	325	2.89	ND	2.1	ND	152	456	<5	47	0.363
Sep-98*	<0.5	2.9	2.1	89	1.1	ND	<0.5	<0.5	48	190	<5	79	0.42
Feb-99	<0.5	1.2	0.7	26	<1	ND	<0.5	<0.5	14	61	<5	47**	0.18
Aug-99	<0.5	3.2	2.1	77	0.8	ND	1	<0.5	25	140	<0.5	35	0.18
Nov-99	<0.5	5.7	3.6	110	1.2	0.6	1.4	<0.5	49	190	0.7	49	0.22
Feb-00	<0.5	3	2.1	78	<0.5	<0.5	0.9	<0.5	46	160	<5	48	<0.05
Feb-00 Dup	<0.5	2.9	2	75	<0.5	<0.5	0.9	<0.5	42	150	5.3	52	<0.05
MW-3													
Jul-86	<5	NA	NA	NA	NA	ND	NA	ND	<5	<5	NA	NA	NA
Sep-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Nov-86	6	NA	NA	NA	NA	ND	NA	ND	100	4	NA	NA	NA
Feb-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Mar-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Sep-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Feb-88	2	NA	NA	NA	NA	ND	NA	ND	6.2	2.6	NA	NA	NA
Jan-89	ND	NA	NA	NA	NA	ND	NA	ND	ND	ND	NA	NA	NA
Jun-89	1	NA	NA	ND	NA	ND	NA	ND	6	2	NA	NA	NA
Jan-90	ND	NA	NA	ND	NA	ND	NA	ND	ND	2	NA	NA	NA
Jun-94	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	NA	NA	NA
Aug-94	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	1.4	14.3	<0.01
Mar-95	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	23.9	<0.01
Aug-95	<1	<1	<1	1.4	<1	ND	<1	ND	<1	<1	<5	<10	<0.1
Feb-96	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.2
Aug-96	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Feb-97	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Aug-97	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Feb-98	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Aug-98	<0.5	<0.5	<0.5	<0.5	<1	ND	<0.5	<0.5	<0.5	<0.5	<1	3.52	<0.05
Feb-99	<0.5	<0.5	<0.5	<0.5	<1	ND	<0.5	<0.5	<0.5	<0.5	<5	<5	<0.05
Aug-99	<0.5	<0.5	<0.5	<0.5	<0.5	ND	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.05
Nov-99	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<2	<0.05
Feb-00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	31	<0.05
MW-4													
Jul-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Sep-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Nov-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA

TABLE 3

HISTORIC GROUNDWATER ANALYTICAL RESULTS

Well Number	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCA (µg/l)	1,1-DCE (µg/l)	1,2-DCA (µg/l)	cis-1,2-DCE (µg/l)	CFM (µg/l)	DFM (µg/l)	PCE (µg/l)	TCE (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Cyanide (mg/l)
Drinking Water Standard	**200**	**32**	**5**	**6**	**0.5**	**6**	**100[1]**	**NE**	**5**	**5**	**10**	**50**	**0.2[2]**
Feb-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Mar-87	0.5	NA	NA	NA	NA	ND	NA	ND	1.6	1	NA	NA	NA
Sep-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Feb-88	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Jan-89	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Jun-89	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Jan-90	ND	NA	NA	ND	NA	ND	NA	ND	1.9	ND	NA	NA	NA
Jun-94	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	NA	NA	NA
Aug-94	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<1	6.4	<0.01
Mar-95	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	2.67
Aug-95	<1	<1	<1	1.1	<1	ND	<1	ND	<1	<1	<5	<10	<0.1
Feb-96	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.2
Aug-96	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Feb-97	<1	<1	<1	<1	<1	ND	<1	ND	<1	<1	<5	<10	<0.01
Aug-97	<1	<1	<1	<1	<1	ND	<1	ND	1.2	<1	<5	<10	<0.01
Feb-98	<1	<1	<1	<1	<1	ND	<1	ND	1.33	<1	<5	<10	<0.01
Aug-98	<0.5	<0.5	<0.5	<0.5	<1	ND	<0.5	1.8	<0.5	<0.5	<1	5.89	<0.05
Feb-99	<0.5	<0.5	<0.5	<0.5	<1	ND	<0.5	1.8	0.6	<0.5	<5	38	<0.05
Aug-99	<0.5	<0.5	<0.5	<0.5	<0.5	ND	<0.5	2.2	0.6	<0.5	<0.5	<2	<0.05
Nov-99	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	0.7	<0.5	<0.5	2.9	<0.05
Nov-99 Dup	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.9	0.7	<0.5	<0.5	2	<0.05
Feb-00	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<5	<15	<0.05
MW-7													
Jul-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Sep-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Nov-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Feb-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	N.A	NA
Mar-87	48	NA	NA	NA	NA	ND	NA	ND	81	456	NA	NA	NA
Sep-87	56	NA	NA	NA	NA	ND	NA	ND	93	200	NA	NA	NA
Feb-88	8.2	NA	NA	NA	NA	ND	NA	ND	74	152	NA	NA	NA
Jan-89	ND	NA	NA	NA	NA	ND	NA	ND	150	200	NA	NA	NA
Jun-89	50	NA	NA	42	NA	ND	NA	ND	60	66	NA	NA	NA
Jan-90	1.6	NA	NA	440	NA	ND	NA	ND	160	400	NA	NA	NA
Jun-94	<1	2.8	<1	40	<1	ND	1.8	ND	42	280	NA	NA	NA
Aug-94	<1	17	6.2	140	1.7	ND	2.4	ND	60	310	1.3	115	0.76
Mar-95	<1	4.5	<1	66	<1	ND	<1	ND	28	145	<5	49.6	0.14
Aug-95	<1	<1	<1	43	<1	ND	<1	ND	1.9	130	<5	26.5	0.025
Feb-96	<1	<1	<1	36	<1	ND	<1	ND	18	120	<5	36.3	0.37
Aug-96	<1	4.5	1.3	46	<1	ND	<1	ND	20	87	<5	38.2	0.30

TABLE 3

HISTORIC GROUNDWATER ANALYTICAL RESULTS

Well Number	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCA (µg/l)	1,1-DCE (µg/l)	1,2-DCA (µg/l)	cis-1,2-DCE (µg/l)	CFM (µg/l)	DFM (µg/l)	PCE (µg/l)	TCE (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Cyanide (mg/l)
Drinking Water Standard	**200**	**32**	**5**	**6**	**0.5**	**6**	**100[1]**	**NE**	**5**	**5**	**10**	**50**	**0.2[2]**
Feb-97	<1	3.6	<1	41	<1	ND	<1	ND	31	170	<5	35	0.126
Feb-97 Dup	<1	4.1	1.1	47	<1	ND	<1	ND	35	180	NA	NA	NA
Aug-97	<1	<1	<1	43	<1	ND	<1	ND	18	105	<5	17.4	<0.01
Aug-97 Dup	<5	<5	<5	45	<5	ND	<5	ND	18	150	NA	NA	NA
Feb-98	<1	5.89	2.54	172	1.02	ND	1.24	ND	57.3	222	<5	19.6	0.353
Aug-98	<0.5	<0.5	0.8	53	<1	ND	<0.5	ND	16	170	<1	31.2	<0.05
Aug-98 Dup	<0.5	<0.5	0.7	60	<1	ND	<0.5	<0.5	18	180	NA	NA	NA
Feb-99	<0.5	1.1	0.6	24	<1	ND	<0.5	<0.5	9	82	<5	46	<0.05
Aug-99	<0.5	1.6	1.1	78	0.8	ND	0.7	<0.5	17	150	<0.5	28	0.06
Nov-99	<0.5	2.1	1.8	130	<0.5	<0.5	0.9	<0.5	32	260	<0.5	34	<0.05
Feb-00	<0.5	1.7	1.2	85	<0.5	<0.5	0.7	<0.5	27	180	<5	26	<0.05
MW-8													
Jul-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Sep-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Nov-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Feb-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Mar-87	32	NA	NA	NA	NA	ND	NA	ND	110	180	NA	NA	NA
Sep-87	3	NA	NA	NA	NA	ND	NA	ND	27	47	NA	NA	NA
Feb-88	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Jan-89	ND	NA	NA	NA	NA	ND	NA	ND	80	90	NA	NA	NA
Jun-89	30	NA	NA	180	NA	ND	NA	ND	320	400	NA	NA	NA
Jan-90	ND	NA	NA	100	NA	ND	NA	ND	56	160	NA	NA	NA
Jun-94	<1	<1	<1	16	<1	ND	<1	ND	6.8	34	NA	NA	NA
Aug-94	<1	<1	9.4	<1	<1	ND	<1	ND	5.5	22	4.8	135	<0.01
Mar-95	<1	<1	<1	11.7	<1	ND	<1	ND	3.3	18.8	<5	20.4	<0.01
Aug-95	<1	<1	<1	7.9	<1	ND	<1	ND	<1	19	<5	14.4	<0.1
Feb-96	<1	<1	<1	17	<1	ND	<1	ND	11	35	<5	20.5	<0.2
Aug-96	<1	<1	1.6	16	<1	ND	<1	ND	11	39	<5	<10	<0.01
Feb-97	<1	<1	<1	8.3	<1	ND	<1	ND	12	33	<5	<10	<0.01
Aug-97	<1	<1	1.4	14	<1	ND	<1	ND	12	32	<5	<10	<0.01
Feb-98	<1	<1	2.26	31.1	<1	ND	<1	ND	23	52	<5	<10	<0.01
Aug-98	<0.5	<0.5	<0.5	2.6	<1	ND	<0.5	<0.5	2.3	8.5	4.21	5.22	<0.05
Feb-99	<0.5	<0.5	0.6	6.2	<1	ND	<0.5	0.6	4.7	15	<5	5	<0.05
Aug-99	<0.5	0.9	2.4	35	0.6	ND	0.7	<0.5	15	80	<0.5	12	<0.05
Aug-99 Dup	<0.5	1	2.6	46	0.7	ND	0.8	0.6	18	90	<0.5	18	<0.05
Nov-99	<0.5	<0.5	0.7	9.7	<0.5	<0.5	<0.5	<0.5	6.1	24	<0.5	7.5	<0.05
Feb-00	<0.5	<0.5	<0.5	5.8	<0.5	<0.5	<0.5	<0.5	5.1	16	<5	<15	<0.05

TABLE 3

HISTORIC GROUNDWATER ANALYTICAL RESULTS

Well Number	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCA (µg/l)	1,1-DCE (µg/l)	1,2-DCA (µg/l)	cis-1,2-DCE (µg/l)	CFM (µg/l)	DFM (µg/l)	PCE (µg/l)	TCE (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Cyanide (mg/l)
Drinking Water Standard	**200**	**32**	**5**	**6**	**0.5**	**6**	**100[1]**	**NE**	**5**	**5**	**10**	**50**	**0.2[2]**
MW-11													
Jul-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Sep-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Nov-86	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Feb-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Mar-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Sep-87	NA	NA	NA	NA	NA	ND	NA	ND	NA	NA	NA	NA	NA
Feb-88	ND	NA	NA	NA	NA	ND	NA	ND	ND	26	NA	NA	NA
Jan-89	ND	NA	NA	NA	NA	ND	NA	ND	200	20	NA	NA	NA
Jun-89	ND	NA	NA	50	NA	ND	NA	ND	10	270	NA	NA	NA
Jan-90	ND	NA	NA	231	NA	ND	NA	ND	5.5	50	NA	NA	NA
Jun-94	<1	<1	<1	<1	<1	ND	1.8	ND	7	86	NA	NA	NA
Aug-94	<1	<1	16	<1	<1	ND	<1	ND	4.7	49	<1	13	<0.01
Mar-95	<1	<1	<1	20.3	<1	ND	<1	ND	4.1	59.6	<5	13.1	<0.01
Aug-95	<1	<1	<1	12	<1	ND	<1	ND	<1	43	<5	13.3	<0.01
Feb-96	<1	<1	<1	12	<1	ND	<1	ND	3.8	40	<5	<10	<0.2
Aug-96	<1	<1	<1	12	<1	ND	<1	ND	4.8	45	<5	<10	<0.01
Feb-97	<1	<1	<1	<1	<1	ND	<1	ND	4.7	47	<5	<10	<0.01
Aug-97	<1	<1	<1	9.3	<1	ND	<1	ND	4.3	30	<5	<10	<0.01
Feb-98	<1	<1	<1	23.6	<1	ND	<1	ND	10.6	63.1	<5	<10	<0.01
Feb-98 Dup	<1	<1	<1	21.2	<1	ND	<1	ND	10	59.4	NA	NA	NA
Aug-98	<0.5	<0.5	<0.5	9.1	<1	ND	<0.5	1.4	2.7	37	<1	4.15	<0.05
Feb-99	<0.5	<0.5	<0.5	8.3	<1	ND	<0.5	<0.5	3	38	<5	<5	<0.05
Aug-99	<0.5	<0.5	<0.5	16	<0.5	ND	<0.5	<0.5	4.2	62	<0.5	3.4	<0.05
Nov-99	<0.5	<0.5	<0.5	18	<0.5	<0.5	<0.5	<0.5	5.4	71	<0.5	3.2	<0.05
Feb-00	<0.5	<0.5	<0.5	11	<0.5	<0.5	<0.5	<0.5	3.3	38	<5	<15	<0.05
MW-12													
Aug-95	<1	<1	6.7	250	7	ND	4.1	ND	13	540	<5	25.6	0.502
Feb-96	<5	<5	<5	230	<5	ND	<5	ND	60	380	<5	37.5	0.38
Feb-96 Dup	<5	<5	<5	210	<5	ND	<5	ND	57	360	NA	N.A	NA
Aug-96	<1	9.2	5.2	210	4.5	ND	2.9	ND	65	330	<5	30.4	0.37
Feb-97	<1	2.4	1.2	66	1.1	ND	1.1	ND	39	220	<5	25.7	0.051
Aug-97	<5	<5	<5	120	<5	ND	<5	ND	60	270	<5	32.9	0.11
Feb-98	<1	8.91	4.97	227	5.04	ND	3.4	ND	60.7	489	<5	59.2	0.111
Aug-98	<0.5	2.4	1.5	110	1.8	ND	0.6	<0.5	21	190	<1	30.7	0.16
Feb-99	<0.5	6.4	3.9	300	2.7	ND	2.2	<0.5	47	520	<5	23**	0.19
Feb-99 Dup	<0.5	6.8	3.6	260	2.8	ND	2.1	<0.5	48	460	<5	NA	0.07

TABLE 3

HISTORIC GROUNDWATER ANALYTICAL RESULTS

Well Number	1,1,1-TCA (µg/l)	1,1,2-TCA (µg/l)	1,1-DCA (µg/l)	1,1-DCE (µg/l)	1,2-DCA (µg/l)	cis-1,2-DCE (µg/l)	CFM (µg/l)	DFM (µg/l)	PCE (µg/l)	TCE (µg/l)	Cadmium (µg/l)	Chromium (µg/l)	Cyanide (mg/l)
Drinking Water Standard	**200**	**32**	**5**	**6**	**0.5**	**6**	**100[1]**	**NE**	**5**	**5**	**10**	**50**	**0.2[2]**
Aug-99	<0.5	4.9	3.2	170	2.7	ND	1.9	<0.5	30	280	<0.5	25	<0.05
Nov-99	<0.5	3.2	2.4	170	2	<0.5	1.7	<0.5	30	220	<0.5	10	0.09
Feb-00	<0.5	2.2	1.8	150	1.4	<0.5	1.2	<0.5	32	190	<5	54	0.09

Drinking water standards are Maximum Contaminant Levels as established by the California Department of Health Services.
1 - Drinking water standard is for total trihalomethanes.
2 - Drinking water standard is the Maximum Contaminant Level as established by the U.S. Environmental Protection Agency.
NA - Not Analyzed
ND - Not Detected
NE - Not Established
< - Not detected at the detection limit shown.
* - Well sampled on September 29, 1998, as well required repair before sampling could occur.
** - Well resampled for dissolved chromium on May 7, 1999.

1,1,1-TCA - 1,1,1-Trichloroethane
1,1,2-TCA - 1,1,2-Trichloroethane
1,1-DCA - 1,1-Dichloroethane
1,1-DCE - 1,1-Dichloroethene
1,2-DCA - 1,2-Dichloroethane
cis-1,2-DCE - cis-1,2-Dichloroethene
CFM - Chloroform
DFM - Dichlordifluoromethane
PCE - Tetrachloroethene
TCE - Trichloroethene

TABLE 4

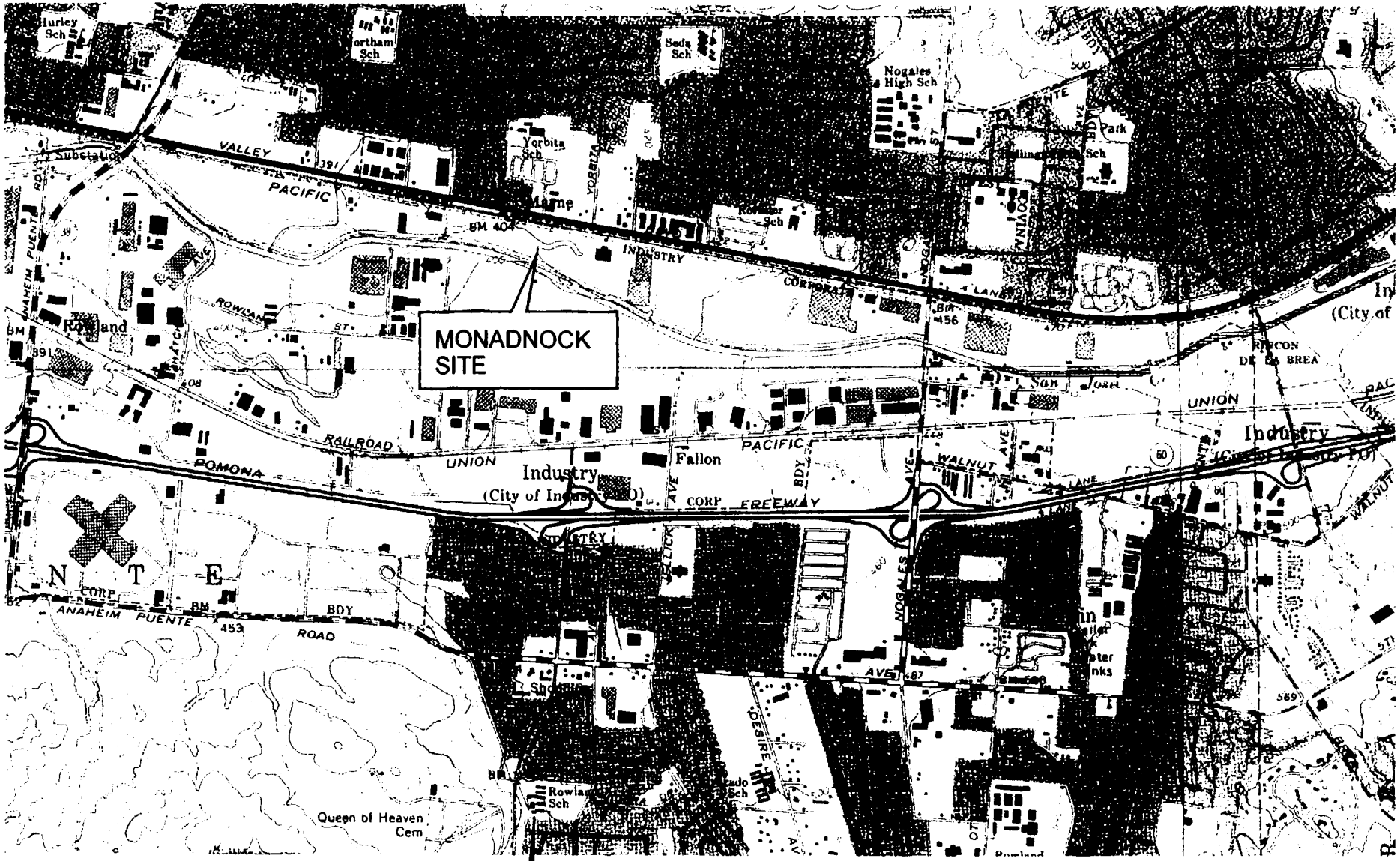
ANALYTICAL RESULTS FOR 1,4-DIOXANE, NDMA AND PERCHLORATE

Well Number/ Date	1-4 Dioxane (µg/l)	NDMA (µg/l)	Total Perchlorate (µg/l)
CDHS Action Levels	3	0.02	18
MW-1			
Nov-99	NS	NS	NS
Feb-00	NS	NS	NS
MW-2			
Nov-99	46.1	<0.002	<4
Feb-00	49	<0.002	<4
Feb-00 Dup	49	<0.002	<4
MW-3			
Nov-99	3.6	<0.002	<4
Feb-00	<0.3	<0.002	<4
MW-4			
Nov-99	4.7	<0.002	<4
Feb-00	<0.3	<0.002	<4
MW-7			
Nov-99	23	<0.002	<4
Feb-00	14	<0.002	<4
MW-8			
Nov-99	20.8	<0.002	4.5
Feb-00	10.1	<0.002	<4
MW-11			
Nov-99	2.9	<0.002	<4
Feb-00	<0.3	<0.002	<4
MW-12			
Nov-99	31.5	<0.002	<4
Feb-00	25	<2	<4

NS - Not Sampled
CDHS - California Department of Health Services

FIGURES

1 Site Location Map
2 Potentiometric Surface Map - February 2000
3 Water-Level Elevations vs. Time - Wells MW-2, MW-7 and MW-12
4 Total VOC Concentration Contour Map - February 2000
5 Total VOC Concentrations vs Time - Wells MW-2, MW-7 and MW-12



Scale 1000 0 1000 2000 3000 4000 feet

REFERENCE: USGS 7.5-MINUTE QUADRANGLE BALDWIN PARK, CALIFORNIA DATED 1964, PHOTO REVISED 1981.

REVISIONS

NO.	BY	DATE	DESCRIPTION
0	LH	5-22-96	CLIENT REVIEW

REVISION 0

TRW INC.

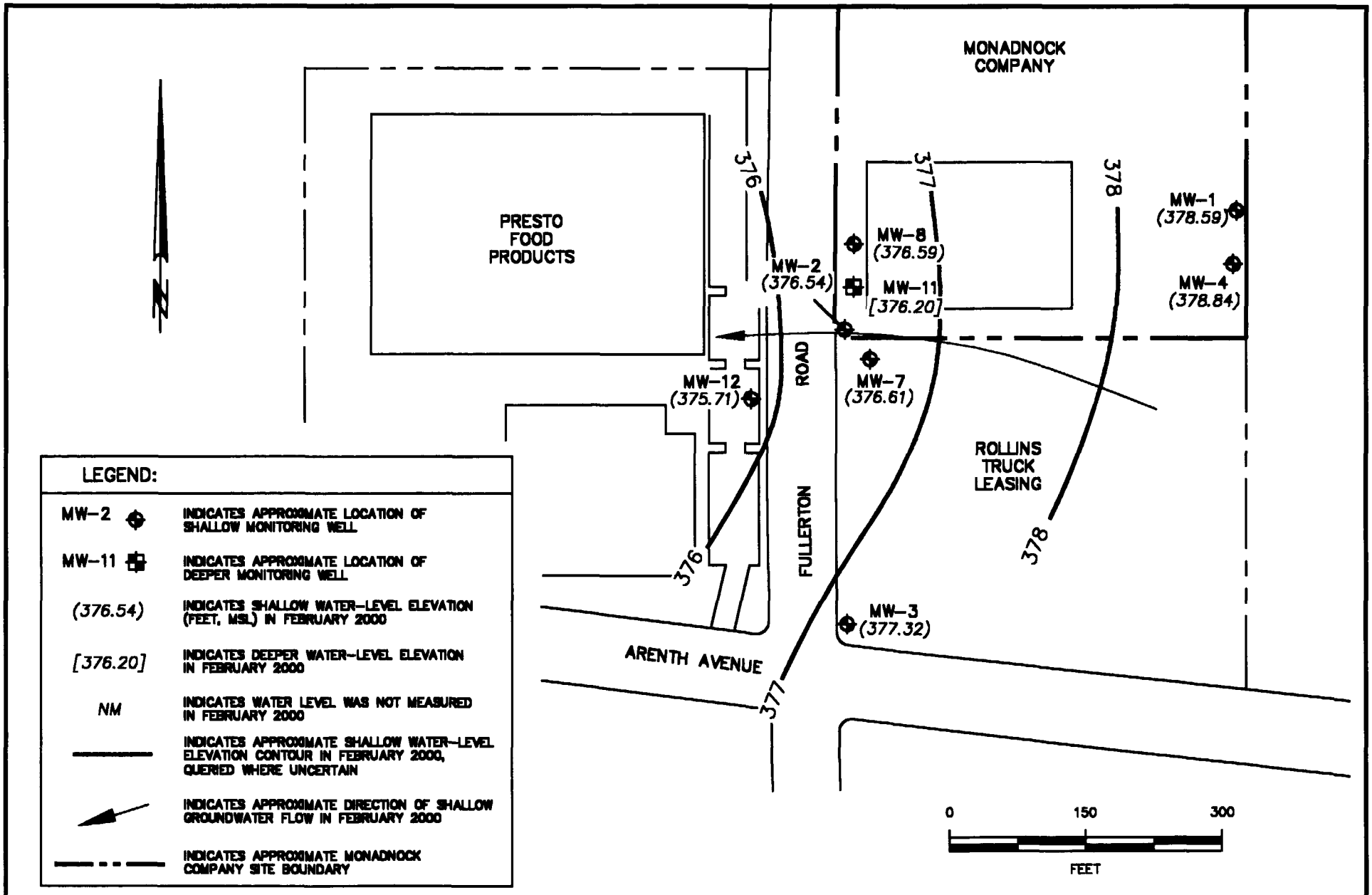
THE MONADNOCK COMPANY

SITE LOCATION MAP

PROJECT NO.	DRAWN BY	CHECKED BY:
	S/1640	MT

ART NO. 9602149

FIGURE 1



TRW INC.
1900 Richmond Road
Cleveland, Ohio 44124

DESIGNED	LAN
DRAWN	HHA
REVIEWED	LAN
CHECKED	MT
SCALE	1"=150 FEET
DATE	4-3-00

THE MONADNOCK COMPANY

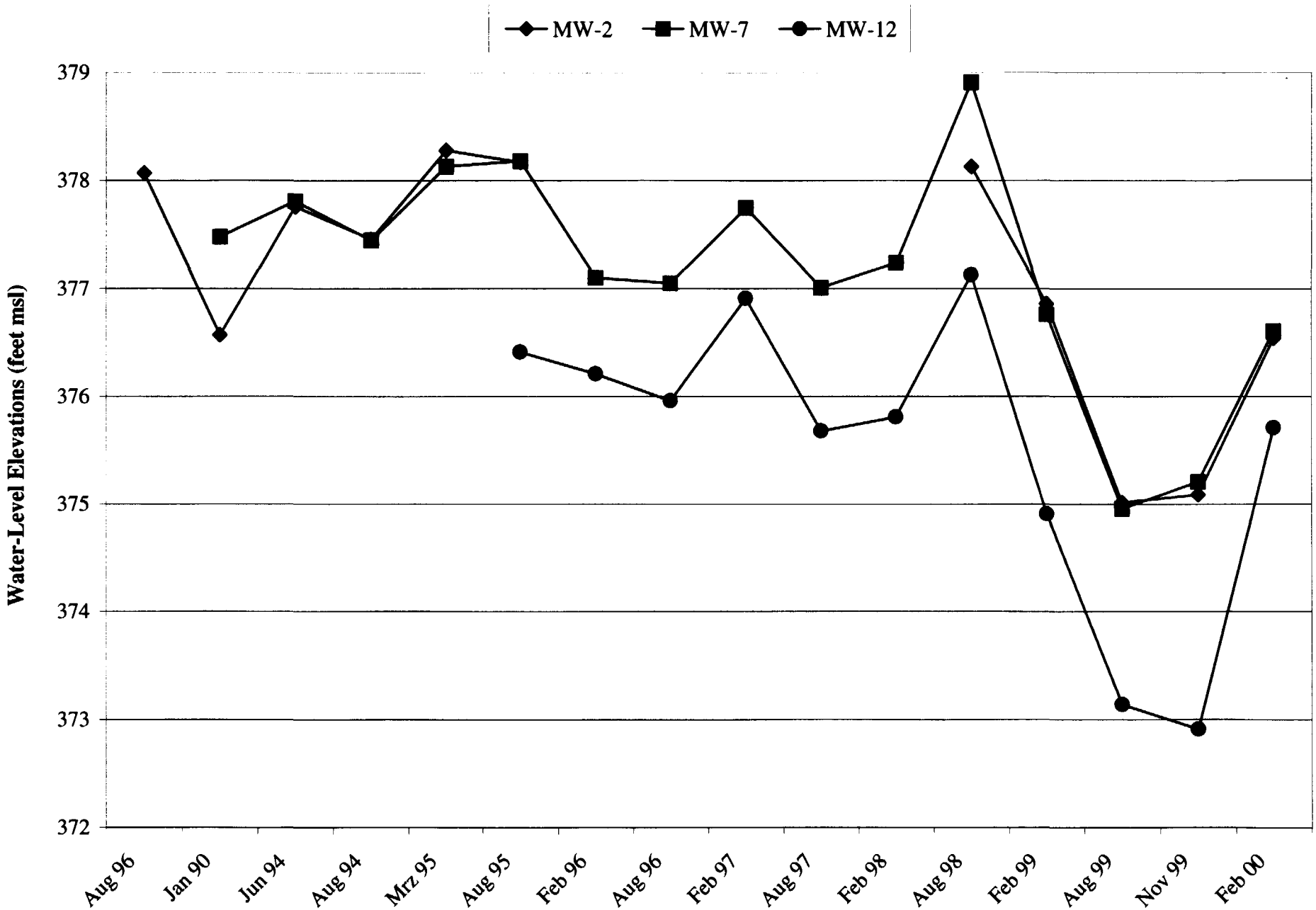
POTENTIOMETRIC SURFACE MAP
FEBRUARY 2000

REVISION 0

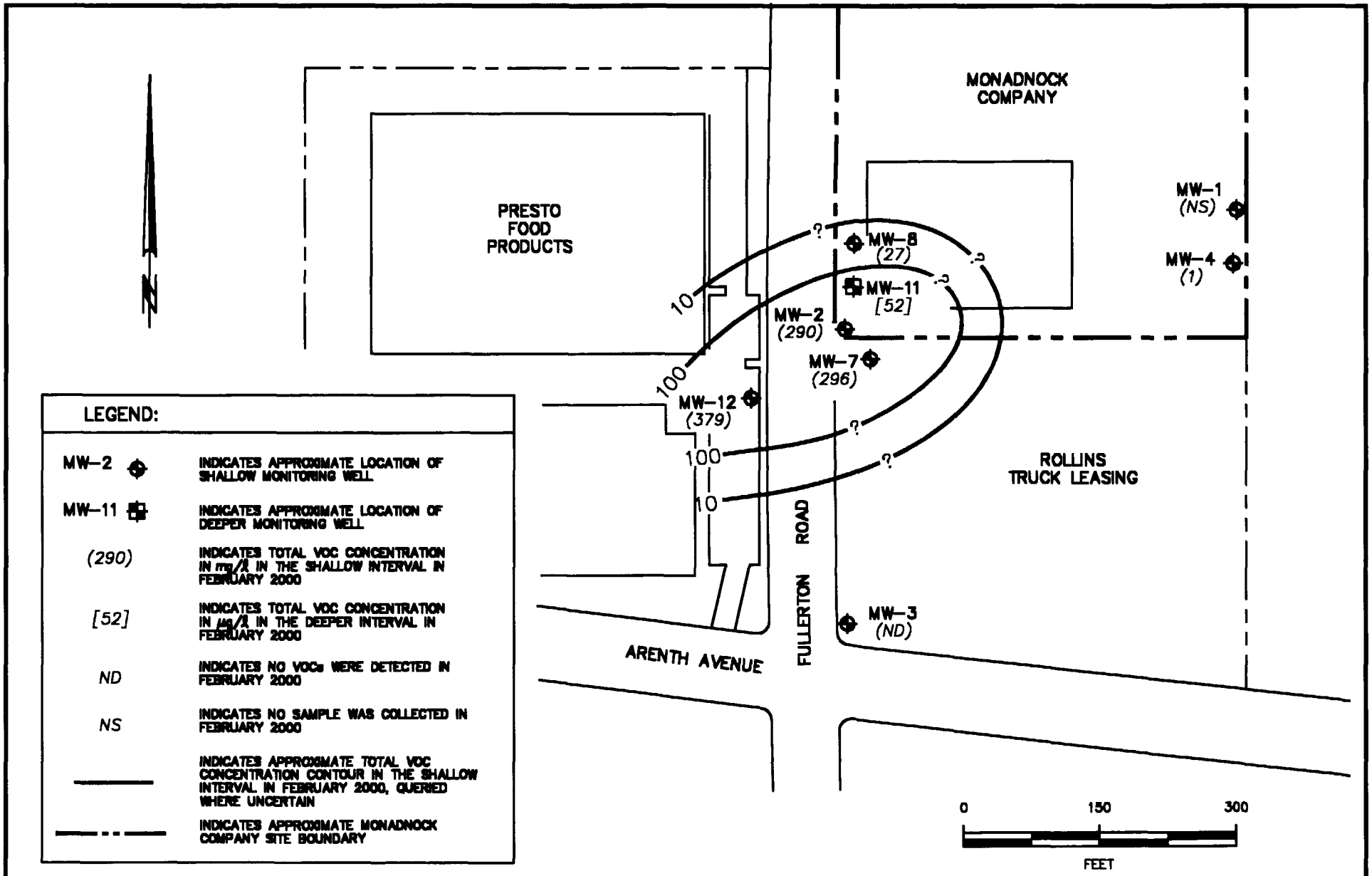
PROJECT MON.02.00.012

FIGURE 2

MONFEB00WL.dwg



TRW	Monadnock Company Site, City of Industry, CA	Project: MON.02.00.012
	Water-Level Elevation vs. Time - Wells MW-2, MW-7 and MW-12	**FIGURE 3**



TRW INC.
1900 Richmond Road
Cleveland, Ohio 44124

DESIGNED	LAN
DRAWN	SCS
REVIEWED	LAN
CHECKED	MT
SCALE	1"=150 FEET
DATE	4-3-00

THE MONADNOCK COMPANY

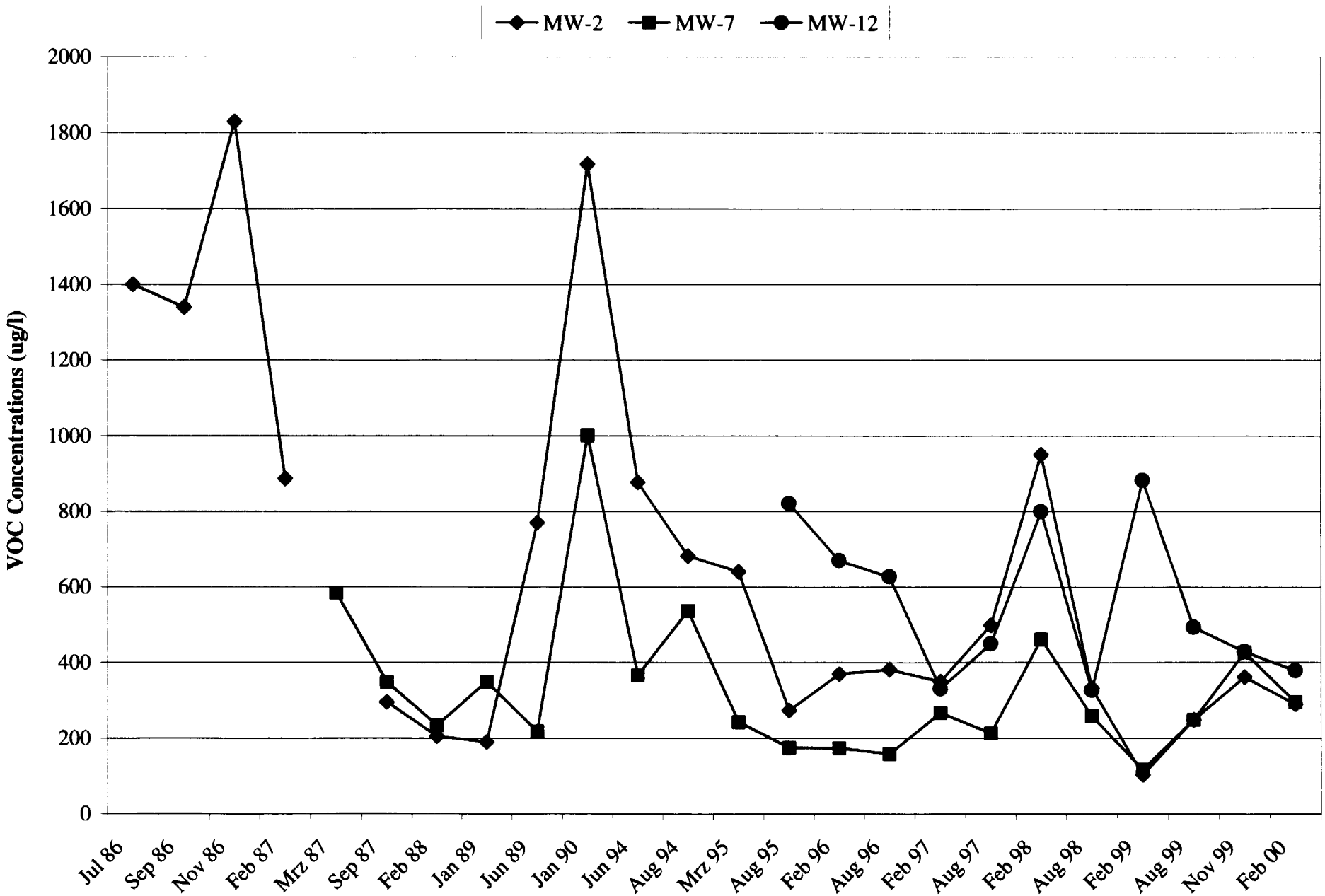
TOTAL VOC CONCENTRATION CONTOUR MAP
FEBRUARY 2000

REVISION 0

PROJECT MON.02.00.012

FIGURE 4

MONFEB00VOC.dwg



TRW	Monadnock Company Site, City of Industry, CA	Project: MON.02.00.012
	Total VOC Concentrations vs. Time - Wells MW-2, MW-7 and MW-12	**FIGURE 5**

APPENDIX A

STANDARD FIELD PROCEDURES AND WATER PURGING LOGS

TRW's WELL MONITORING AND SAMPLING FIELD PROCEDURES

Prior to purging the wells, static groundwater levels and total well depths are measured in all wells. A clean electronic sounder is used to measure the depth to water below the top of each well casing to the nearest 0.01 foot. Where previous data indicate the presence or likely presence, an interface probe is used to monitor the presence and thickness of light or dense non-aqueous phase liquid (LNAPL/DNAPL).

Each monitoring well is purged a minimum of three well casing volumes prior to sampling. Well purging is accomplished using either dedicated polyethylene bailers, 1.75" or 3.5" diameter PVC bailers, 1.5" disposable HDPE bailers, dedicated bladder pumps, or 2" Grundfos pumps, depending on the characteristics of each well and/or the site. Measurements of pH, specific conductivity, and temperature are recorded at periodic intervals during the purging of all wells. Water-level measurement, well purging, and well sampling data are recorded for each well on water purging logs. Copies of the logs follow these procedures.

Groundwater samples are carefully collected from each well after the water level has recovered to at least 80 percent of the static level. Groundwater samples are collected from the monitoring wells and piezometers using specific well-dedicated Teflon, PVC or polyethylene bailers, or 1.5" disposable HDPE bailers. The dedicated bailers (where used) are suspended in the well from new nylon rope or a monofilament line. Groundwater samples are collected from the sample ports for extraction wells and eductor pipes. Groundwater extraction wells are typically sampled from a dedicated sampling port on the discharge line.

The samples are slowly transferred to new sample containers supplied by the analytical laboratory for each specific analysis. Volatile organic analysis vials are filled in a manner such that no headspace exists. Each sample is logged on a chain-of-custody form that accompanies the samples. The samples are then stored in a clean portable ice chest and cooled with ice until delivery to the analytical laboratory.

Monitoring equipment is decontaminated between use in each well using a non-phosphate detergent wash followed by two deionized water rinses. Wastewater, generated from decontamination activities, is collected in 55-gallon drums. The drummed wastewater is then stored onsite for later disposal or treatment.

Field quality assurance/quality control (QA/QC) procedures are employed during each monitoring event to document that the sampling results meet accepted QA/QC standards. The QA/QC samples collected in the field include blind duplicates, trip blanks, and equipment blanks. Additional QA/QC procedures employed in the field include sequencing the sampling in such a manner that the wells with the lowest levels of contamination are sampled prior to those with the highest levels.

GROUNDWATER MONITORING
WATER - LEVEL MEASUREMENTS

Project: MONADNOCK, CA Date: 2.22.00 Collected By: BW

Well Number	Well Diameter	Water Level	Total Depth
MW-12	4"	31.20	49.45
MW-3	4"	31.20	45.90
MW-7	4"	32.55	56.52
MW-4	4"	34.11	48.60
* MW-1	4"	34.09	35.40
MW-8	4"	32.41	51.22
MW-11	4"	32.73	96.90
MW-2	4"	31.47	44.65

Observations/Notes: MW-1 GROUNDWATER LEVEL MEASUREMENTS (8-3-99) INDICATED WELL CASING WAS NOTED DAMAGED.

watrlevl.frm

GROUNDWATER MONITORING
WATER PURGING LOG

Project Name: MONADNOCK, CA Date: 2-22-00
Well No: MW-2 Location: (✓) On-site ( ) Off-site Collected by: FR & BW

Well Purging Method: ( ) 1.5" PVC Bailer (✓) 3.5" PVC Bailer ( ) 2" Grundfos Pump ( ) Other
Decontamination Method: (✓) 1 Wash 3 Rinse ( ) N/A Equipment Deconed Prior to Use: Yes✓ No___ N/A___
Total Depth (ft.): 44.65 H_2O Level (ft.): 31.47 Height of Water Column (ft.): 13.18
Casing volumes to be purged: 2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 5" (1.02 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x .65 gal./ft. x 13.18 ft. = 25.70 gal.

Time	Purged (gallons)	Temp. °F	mΩ	pH	Notes
1145	00				
1148	08	70.0	1499	6.72	H2O Cloudy Brown
1150	12	70.6	1513	6.88	" " "
1152	13	70.5	1512	6.83	" " "

* Total Purged (gallons): 13.0 No. of Casing Volumes: 1.51
* Well Sampling Method: ( ) 1.5" Teflon Bailer ( ) 2" Grundfos Pump (✓) Other: DISPOSABLE BAILER
* Decontamination Method: ( ) 1 Wash-3 Rinse (✓) N/A

Calibration record, Observations, and Notes

* Ph Meter Calibration: Zeroed to: 7.0 Spanned to: 10.0
* Ambient Temp. 60 ° Clear, Sunny, Foggy, Partly Cloudy, Cloudy, Drizzle, Rain, Snow, Wind
* Decon. Water changed out after this well: Yes___ No ✓ N/A___

* Notes: WELL RECHARGED TO 31.40 PRIOR TO SAMPLING.

purging.log

GROUNDWATER MONITORING
WATER PURGING LOG

Project Name: MONADNOCK, CA Date: 2-22-00
Well No: MW-3 Location: ( ) On-site (✓) Off-site Collected by: FR & BW

Well Purging Method: ( ) 1.5" PVC Bailer (✓) 3.5" PVC Bailer ( ) 2" Grundfos Pump ( ) Other
Decontamination Method: (✓) 1 Wash-3 Rinse ( ) N/A Equipment Deconed Prior to Use: Yes ✓ No N/A
Total Depth (ft.): 45.90 H_2O Level (ft.): 31.20 Height of Water Column (ft.): 14.70
Casing volumes to be purged: 2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 5" (1.02 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x .65 gal./ft. x 14.70 ft. = 28.66 gal.

Time	Purged (gallons)	Temp. °F	mΩ	pH	Notes
1000	00				
1006	08	67.7	1363	6.71	H_2O Slightly Cloudy Brown
1010	15	67.9	1373	6.80	" " " "
1012	17	67.9	1364	6.83	" " " "

* Total Purged (gallons): 17.0 No. of Casing Volumes: 1.77
* Well Sampling Method: ( ) 1.5" Teflon Bailer ( ) 2" Grundfos Pump (✓) Other: DISPOSABLE BAILER
* Decontamination Method: ( ) 1 Wash-3 Rinse (✓) N/A

Calibration record, Observations, and Notes

* Ph Meter Calibration: Zeroed to: 7.0 Spanned to: 10.0
* Ambient Temp. 60 ° Clear, Sunny, Foggy, Partly Cloudy, Cloudy, Drizzle, Rain, Snow, Wind
* Decon. Water changed out after this well: Yes No ✓ N/A
* Notes: WELL RECHARGED TO 31.21 PRIOR TO SAMPLING.

purging.log

GROUNDWATER MONITORING
WATER PURGING LOG

Project Name: MONADNOCK, CA Date: 2-22-00
Well No: MW-4 Location: (✓) On-site ( ) Off-site Collected by: FR-BW

Well Purging Method: ( ) 1.5" PVC Bailer (✓) 3.5" PVC Bailer ( ) 2" Grundfos Pump ( ) Other
Decontamination Method: (✓) 1 Wash-3 Rinse ( ) N/A Equipment Deconed Prior to Use: Yes✓ No___ N/A___
Total Depth (ft.): 48.60 H_2O Level (ft.): 34.11 Height of Water Column (ft.): 14.49
Casing volumes to be purged: 2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 5" (1.02 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x .65 gal./ft. x 14.49 ft. = 28.25 gal.

Time	Purged (gallons)	Temp. °F	mΩ	pH	Notes
0935	00				
0941	10	69.7	1492	6.91	H_2O Slightly Cloudy Brown
0947	20	71.0	1519	6.97	" " " "
0952	30	71.3	1522	6.92	H_2O Slightly Cloudy

* Total Purged (gallons): 30.0 No. of Casing Volumes: 3
* Well Sampling Method: ( ) 1.5" Teflon Bailer ( ) 2" Grundfos Pump (✓) Other: Disposable Bailer
* Decontamination Method: ( ) 1 Wash-3 Rinse (✓) N/A

Calibration record, Observations, and Notes

* Ph Meter Calibration: Zeroed to: 7.0 Spanned to: 10.0
* Ambient Temp. 60 ° Clear, Sunny, Foggy, Partly Cloudy, Cloudy, Drizzle, Rain, Snow, Wind
* Decon. Water changed out after this well: Yes___ No ✓ N/A___

* Notes: Well Recharged To 34.09 Prior To Sampling.

purging.log

GROUNDWATER MONITORING
WATER PURGING LOG

Project Name: MONADNOCK, CA Date: 2-22-00
Well No: MW-7 Location: ( ) On-site (✓) Off-site Collected by: FR & BW

Well Purging Method: ( ) 1.5" PVC Bailer (✓) 3.5" PVC Bailer ( ) 2" Grundfos Pump ( ) Other
Decontamination Method: (✓) 1 Wash-3 Rinse ( ) N/A Equipment Deconed Prior to Use: Yes ✓ No N/A
Total Depth (ft.): 56.52 H_2O Level (ft.): 32.55 Height of Water Column (ft.): 23.97
Casing volumes to be purged: 2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 5" (1.02 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x .65 gal./ft. x 23.97 ft. = 46.74 gal.

Time	Purged (gallons)	Temp. °F	mΩ	pH	Notes
1205	00				
1214	15	70.4	1493	6.97	H2O Slightly Cloudy Brown
1220	30	70.6	1429	6.87	" " " "
1227	47	70.9	1417	6.97	" " " "

* Total Purged (gallons): 47.0 No. of Casing Volumes: 3
* Well Sampling Method: ( ) 1.5" Teflon Bailer ( ) 2" Grundfos Pump (✓) Other: DISPOSABLE BAILER
* Decontamination Method: ( ) 1 Wash-3 Rinse (✓) N/A

Calibration record, Observations, and Notes

* Ph Meter Calibration: Zeroed to: 7.0 Spanned to: 10.0
* Ambient Temp. 60 ° Clear, Sunny, Foggy, Partly Cloudy, Cloudy, Drizzle, Rain, Snow, Wind
* Decon. Water changed out after this well: Yes ✓ No N/A

* Notes: WELL RECHARGED TO 32.55 PRIOR TO SAMPLING

purging.log

GROUNDWATER MONITORING
WATER PURGING LOG

Project Name: MONADNOCK, CA Date: 2-22-00
Well No: MW-8 Location: (✓) On-site ( ) Off-site Collected by: FR & BW

Well Purging Method: ( ) 1.5" PVC Bailer (✓) 3.5" PVC Bailer ( ) 2" Grundfos Pump ( ) Other
Decontamination Method: (✓) 1 Wash-3 Rinse ( ) N/A Equipment Deconed Prior to Use: Yes ✓ No N/A
Total Depth (ft.): 51.22 H_2O Level (ft.): 32.41 Height of Water Column (ft.): 18.81
Casing volumes to be purged: 2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 5" (1.02 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x .65 gal./ft. x 18.81 ft. = 36.67 gal.

Time	Purged (gallons)	Temp. °F	mΩ	pH	Notes
1025	00				
1035	13	69.8	1470	6.76	H_2O SLIGHTLY CLOUDY BROWN
1039	25	71.3	1506	6.67	" " " "
1045	37	71.3	1582	6.65	" " " "

* Total Purged (gallons): 37.0 No. of Casing Volumes: 3
* Well Sampling Method: ( ) 1.5" Teflon Bailer ( ) 2" Grundfos Pump (✓) Other: DISPOSABLE BAILER
* Decontamination Method: ( ) 1 Wash-3 Rinse (✓) N/A

Calibration record, Observations, and Notes

* Ph Meter Calibration: Zeroed to: 7.0 Spanned to: 10.0
* Ambient Temp. 60 ° Clear, Sunny, Foggy, Partly Cloudy, Cloudy, Drizzle, Rain, Snow, Wind
* Decon. Water changed out after this well: Yes ✓ No N/A
* Notes: WELL RECHARGED TO 32.31 PRIOR TO SAMPLING.

purging.log

GROUNDWATER MONITORING
WATER PURGING LOG

Project Name: MONADNOCK, CA Date: 2-22-00
Well No: MW-11 Location: (✓) On-site ( ) Off-site Collected by: FR & BW

Well Purging Method: ( ) 1.5" PVC Bailer (✓) 3.5" PVC Bailer ( ) 2" Grundfos Pump ( ) Other
Decontamination Method: (✓) 1 Wash-3 Rinse ( ) N/A Equipment Deconed Prior to Use: Yes✓ No___ N/A___
Total Depth (ft.): 96.90 H_2O Level (ft.): 32.73 Height of Water Column (ft.): 64.17
Casing volumes to be purged: 2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 5" (1.02 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x .65 gal./ft. x 64.17 ft. = 125.13 gal.

Time	Purged (gallons)	Temp. °F	mΩ	pH	Notes
1055	00				
1107	40	69.5	1290	6.96	H2O Slightly Cloudy Brown
1120	80	69.8	1316	6.92	H2O Slightly Cloudy Brown
1133	126	70.1	1323	6.91	H2O Slightly Cloudy

* Total Purged (gallons): 126.0 No. of Casing Volumes: 3
* Well Sampling Method: ( ) 1.5" Teflon Bailer ( ) 2" Grundfos Pump (✓) Other: DISPOSABLE BAILER
* Decontamination Method: ( ) 1 Wash-3 Rinse (✓) N/A

Calibration record, Observations, and Notes

* Ph Meter Calibration: Zeroed to: 7.0 Spanned to: 10.0
* Ambient Temp. 60 ° Clear, Sunny, Foggy, Partly Cloudy, Cloudy, Drizzle, Rain, Snow, Wind
* Decon. Water changed out after this well: Yes___ No ✓ N/A___
* Notes: WELL RECHARGED TO 32.63 PRIOR TO SAMPLING.

purging.log

GROUNDWATER MONITORING
WATER PURGING LOG

Project Name: MONADNOCK, CA Date: 2-22-00
Well No: MW-12 Location: ( ) On-site (✓) Off-site Collected by: FR & BW

Well Purging Method: ( ) 1.5" PVC Bailer (✓) 3.5" PVC Bailer ( ) 2" Grundfos Pump ( ) Other
Decontamination Method: (✓) 1 Wash-3 Rinse ( ) N/A Equipment Deconed Prior to Use: Yes ✓ No N/A
Total Depth (ft.): 49.45 H_2O Level (ft.): 31.20 Height of Water Column (ft.): 18.25
Casing volumes to be purged: 2" (0.16 gal./ft.) 4" (0.65 gal./ft.) 5" (1.02 gal./ft.) 6" (1.47 gal./ft.)

3 casing vol. x .65 gal./ft. x 18.25 ft. = 35.58 gal.

Time	Purged (gallons)	Temp. °F	mΩ	pH	Notes
0900	00				
0910	10	66.9	1307	7.27	H_2O Slightly Cloudy
0914	20	68.6	1208	7.34	" " "
0922	36	68.8	1300	7.31	" " "

* Total Purged (gallons): 36.0 No. of Casing Volumes: 3
* Well Sampling Method: ( ) 1.5" Teflon Bailer ( ) 2" Grundfos Pump (✓) Other: DISPOSABLE BAILER
* Decontamination Method: ( ) 1 Wash-3 Rinse (✓) N/A

Calibration record, Observations, and Notes

* Ph Meter Calibration: Zeroed to: 7.0 Spanned to: 10.0
* Ambient Temp. 60 ° Clear, Sunny, Foggy, Partly Cloudy, Cloudy, Drizzle, Rain, Snow, Wind
* Decon. Water changed out after this well: Yes ✓ No N/A
* Notes: WELL RECHARGED TO 31.20 PRIOR TO SAMPLING.

purging.log

GROUNDWATER MONITORING
ANALYTICAL QC LOG

Project: MONADNOCK, CA Date: 2-22-2000 Collected By: FR & BW

Sample Number	Well Number	Date	Time	QC Sample	Analysis
TRIP BLANK	N/A	2-22-2000	1300	TRIP BLANK	8260

Decon Water changed out after well number: N/A

Observations/Notes: _____

gwanalqc.log

GROUNDWATER MONITORING
ANALYTICAL QC LOG

Project: MONADNOCK, CA Date: 2-22-00 Collected By: FR & BW

Sample Number	Well Number	Date	Time	QC Sample	Analysis
MO0200-01	MW-12	2-22-2000	1330	N/A	8260/VOA
MO0200-02					6010/Cd,Cr
MO0200-03					335.2/CYN
MO0200-04					PERCHLORATE
MO0200-05					1,4 DIOXANE
MO0200-06					NDMA
MO0200-07	MW-4		1400		8260
MO0200-08					6010
MO0200-09					335.2
MO0200-10					PERCHLORATE
MO0200-11					1,4 DIOXANE
MO0200-12					NDMA
MO0200-13	MW-3		1430		8260
MO0200-14					6010
MO0200-15					335.2
MO0200-16					PERCHLORATE
MO0200-17					1,4 DIOXANE
MO0200-18					NDMA
MO0200-19				MS/MSD	MS/MSD
MO0200-20	MW-8	2-23-2000	0800	N/A	8260
MO0200-21					6010
MO0200-22					335.2
MO0200-23					PERCHLORATE
MO0200-24					1,4 DIOXANE
MO0200-25					NDMA

Decon Water changed out after well number: N/A

Observations/Notes:

GROUNDWATER MONITORING
ANALYTICAL QC LOG

Project: MONADNOCK, CA Date: 2-23-2000 Collected By: CC & BW

Sample Number	Well Number	Date	Time	QC Sample	Analysis
MO0200-26	MW-11	2-23-2000	0900	N/A	8260
MO0200-27					6010
MO0200-28					335.2
MO0200-29					PERCHLORATE
MO0200-30					1,4 DIOXANE
MO0200-31					NDMA
MO0200-32	MW-2	2-23-2000	0945	N/A	8260
MO0200-33					6010
MO0200-34					335.2
MO0200-35					PERCHLORATE
MO0200-36					1,4 DIOXANE
MO0200-37					NDMA
MO0200-38	MW-2	2-23-2000	1015	DUPLICATE	8260
MO0200-39					6010
MO0200-40					335.2
MO0200-41					PERCHLORATE
MO0200-42					1,4 DIOXANE
MO0200-43					NDMA
MO0200-44	MW-7	2-23-2000	1200	N/A	8260
MO0200-45					6010
MO0200-46					335.2
MO0200-47					PERCHLORATE
MO0200-48					1,4 DIOXANE
MO0200-49					NDMA
MO0200-50					

Decon Water changed out after well number: N/A

Observations/Notes:

gwanalqc.log

FIELD OBSERVATIONS \ NOTES

WELL MW-1 WAS NOT SAMPLED. IT WAS NOTED DAMAGED ON (8-3-91) SAMPLING EVENT. TOTAL WATER COLUMN IS 1.31 ft. - MEASURED 2-22-00.

APPENDIX B

ANALYTICAL LABORATORY REPORTS
AND CHAIN-OF-CUSTODY FORMS

Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client:	TRW One Space Park Bldg. E-2 Rm. 4062 Redondo Beach, CA 90278	Date Sampled: Date Received: Job Number:	02/22/00 02/24/00 16061

Project: Monadnock

CASE NARRATIVE

The following information applies to samples which were received on 02/24/00 :

The samples were received at the laboratory chilled and sample containers were intact.

The Total Cyanide analysis was subcontracted to ELAP Lab #1230. The original report was sent with a previous issue of this report.

The NDMA and Perchlorate analyses were subcontracted to ELAP Lab #1422. The original report was sent with a previous issue of this report.

The 1,4 Dioxane analysis for some samples was subcontracted to ELAP Lab #1237. The original report was sent with a previous addendum to this report.

This report is a re-issue and contains data not included in the original version. The results reported previously have not been changed. The date of re-issue is 3/27/00.

Unless otherwise noted below, the Quality Control acceptance criteria were met for all samples for every analysis requested.

Report approved by:

Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 1184

DL : Detection Limit -- The lowest level at which the compound can reliably be detected under normal laboratory conditions.
ND : Not Detected -- The compound was analyzed for but was not found to be present at or above the detection limit.
NA : Not Analyzed -- Per client request, this analyte was not on the list of compounds to be analyzed for.

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Centrum Analytical Laboratories, Inc.

CERTIFIED HAZARDOUS WASTE TESTING LABORATORY • CHEMICAL AND BIOLOGICAL ANALYSES

Client:	TRW One Space Park Bldg. E-2 Rm. 4062 Redondo Beach, CA 90278	Date Sampled: Date Received: Job Number:	02/22/00 02/24/00 16061

Project: Monadnock

ADDENDUM TO ANALYTICAL REPORT

The following information applies to samples which were received on 02/24/00 :

The 1,4-Dioxane analysis for some samples was subcontracted to ELAP Lab #1237. The original report is attached to, but is not part of, this addendum.

This addendum contains data not included in the original report. The results reported previously have not been changed. The date of issue for this addendum is 03/24/00.

Robert R. Clark, Ph.D.
Laboratory Director

ELAP # 1184

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Cadmium By GFAA

Client:	TRW	Date Sampled:	02/22/00
Project:	Monadnock	Date Received:	02/24/00
Job No.:	16061	Date Digested:	02/29/00
Matrix:	Water	Date Analyzed:	03/01/00
Analyst:	RLB	Batch Number:	6010W1487
		Method Number:	7131

		Detection Limit	Cadmium
Sample ID		ug/L	ug/L
Method Blank		5.0	ND
M00200-02	MW-12	5.0	ND
M00200-08	MW-4	5.0	ND
M00200-14	MW-3	5.0	ND
M00200-21	MW-8	5.0	ND
M00200-27	MW-11	5.0	ND
M00200-33	MW-2	5.0	ND
M00200-39	MW-2 Dup	5.0	**5.3**
M00200-45	MW-7	5.0	ND

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QC Sample Report - Metals

Matrix: Water
Batch #: 6010W1487

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Cadmium	1.0	112.2	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Cadmium	1.122	1.090	3%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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Chromium By GFAA

Client:	TRW	Date Sampled:	02/22/00
Project:	Monadnock	Date Received:	02/24/00
Job No.:	16061	Date Digested:	02/29/00
Matrix:	Water	Date Analyzed:	03/01/00
Analyst:	RLB	Batch Number:	6010W1487
		Method Number:	7191

		Detection Limit	Chromium
Sample ID		ug/L	ug/L
Method Blank		15	ND
M00200-02	MW-12	15	**54**
M00200-08	MW-4	15	ND
M00200-14	MW-3	15	**31**
M00200-21	MW-8	15	ND
M00200-27	MW-11	15	ND
M00200-33	MW-2	15	**48**
M00200-39	MW-2 DUP	15	**52**
M00200-45	MW-7	15	**26**

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QC Sample Report - Metals

Matrix: Water
Batch #: 6010W1487

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Compound	Spike Concentration mg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Chromium	1.0	89.0	75 - 125	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Compound	Spike Sample Recovery mg/L	Spike Duplicate Recovery mg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Chromium	0.890	0.804	10%	20%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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EPA 8260 - Volatile Organics

Client:	TRW	Date Sampled:	02/22/00
Project:	Monadnock	Date Received:	02/24/00
Job No.:	16061	Date Analyzed:	02/25/00
Matrix:	Water	Batch Number:	MS48260W2023
Analyst:	GR		

			MW-12	MW-4	MW-3	MW-8	MW-11
	Sample ID:	Blank	M00200-01	M00200-07	M00200-13	M00200-20	M00200-26
Compounds	DL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Acetone	50	ND	ND	ND	ND	ND	ND
Benzene	0.5	ND	ND	ND	ND	ND	ND
Bromobenzene	1.0	ND	ND	ND	ND	ND	ND
Bromochloromethane	1.0	ND	ND	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	10	ND	ND	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND	ND	ND
Carbon disulfide	10	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	0.5	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND	ND	ND
Chloroform	0.5	ND	1.2	ND	ND	ND	ND
Chloromethane	0.5	ND	ND	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND	ND	ND	ND	ND
Dibromomethane	0.5	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.5	ND	1.8	ND	ND	ND	ND
1,2-Dichloroethane	0.5	ND	1.4	ND	ND	ND	ND
1,1-Dichloroethene	0.5	ND	150	ND	ND	5.8	11
cis-1,2-Dichloroethene	0.5	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND	ND	ND

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EPA 8260 - Volatile Organics

Client:	TRW	Date Sampled:	02/22/00
Project:	Monadnock	Date Received:	02/24/00
Job No.:	16061	Date Analyzed:	02/25/00
Matrix:	Water	Batch Number:	MS48260W2023
Analyst:	GR		

			MW-12	MW-4	MW-3	MW-8	MW-11
	Sample ID:	Blank	M00200-01	M00200-07	M00200-13	M00200-20	M00200-26
Compounds	DL	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Ethylbenzene	0.5	ND	ND	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND	ND	ND
2-Hexanone	10	ND	ND	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND	ND	ND
Methylene chloride	10	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	5.0	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MtBE)	1.0	ND	ND	ND	ND	ND	ND
Napthalene	1.0	ND	ND	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1.0	ND	ND	ND	ND	ND	ND
Tetrachloroethene	0.5	ND	**32**	**0.7**	ND	**5.1**	**3.3**
Toluene	0.5	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	ND	**2.2**	ND	ND	ND	ND
Trichloroethene	0.5	ND	**190**	ND	ND	**16**	**38**
1,2,3-Trichloropropane	0.5	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	0.5	ND	ND	ND	ND	ND	ND
Trichlorotrifluoroethane	5.0	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.5	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND	ND	ND
Vinyl chloride	0.5	ND	ND	ND	ND	ND	ND
Xylenes (total)	1.5	ND	ND	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	M00200-01	M00200-07	M00200-13	M00200-20	M00200-26
Dibromofluoromethane	105	101	105	105	103	106
Toluene-d8	99	98	99	99	99	99
Bromofluorobenzene	102	101	103	105	103	104

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EPA 8260 - Volatile Organics

Client:	TRW	Date Sampled:	02/22/00
Project:	Monadnock	Date Received:	02/24/00
Job No.:	16061	Date Analyzed:	02/25/00
Matrix:	Water	Batch Number:	MS48260W2023
Analyst:	GR		

		MW-2	MW-2 Dup	MW-7	
	Sample ID:	M00200-32	M00200-38	M00200-44	TRIP BLANK
Compounds	**DL**	µg/L	µg/L	µg/L	µg/L
Acetone	50	ND	ND	ND	ND
Benzene	0.5	ND	ND	ND	ND
Bromobenzene	1.0	ND	ND	ND	ND
Bromochloromethane	1.0	ND	ND	ND	ND
Bromodichloromethane	0.5	ND	ND	ND	ND
Bromoform	0.5	ND	ND	ND	ND
Bromomethane	0.5	ND	ND	ND	ND
2-Butanone (MEK)	10	ND	ND	ND	ND
n-Butylbenzene	0.5	ND	ND	ND	ND
sec-Butylbenzene	0.5	ND	ND	ND	ND
tert-Butylbenzene	0.5	ND	ND	ND	ND
Carbon disulfide	10	ND	ND	ND	ND
Carbon tetrachloride	0.5	ND	ND	ND	ND
Chlorobenzene	0.5	ND	ND	ND	ND
Chloroethane	0.5	ND	ND	ND	ND
Chloroform	0.5	**0.9**	**0.9**	**0.7**	ND
Chloromethane	0.5	ND	ND	ND	ND
2-Chlorotoluene	0.5	ND	ND	ND	ND
4-Chlorotoluene	0.5	ND	ND	ND	ND
Dibromochloromethane	0.5	ND	ND	ND	ND
1,2-Dibromoethane	0.5	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	10	ND	ND	ND	ND
Dibromomethane	0.5	ND	ND	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND	ND	ND
Dichlorodifluoromethane	0.5	ND	ND	ND	ND
1,1-Dichloroethane	0.5	**2.1**	**2.0**	**1.2**	ND
1,2-Dichloroethane	0.5	ND	ND	ND	ND
1,1-Dichloroethene	0.5	**78**	**75**	**85**	ND
cis-1,2-Dichloroethene	0.5	ND	ND	ND	ND
trans-1,2-Dichloroethene	0.5	ND	ND	ND	ND
1,2-Dichloropropane	0.5	ND	ND	ND	ND
1,3-Dichloropropane	0.5	ND	ND	ND	ND
2,2-Dichloropropane	0.5	ND	ND	ND	ND
1,1-Dichloropropene	0.5	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.5	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND	ND	ND

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EPA 8260 - Volatile Organics

Client:	TRW	Date Sampled:	02/22/00
Project:	Monadnock	Date Received:	02/24/00
Job No.:	16061	Date Analyzed:	02/25/00
Matrix:	Water	Batch Number:	MS48260W2023
Analyst:	GR		

		MW-2	MW-2 Dup	MW-7	
	Sample ID:	M00200-32	M00200-38	M00200-44	TRIP BLANK
Compounds	**DL**	µg/L	µg/L	µg/L	µg/L
Ethylbenzene	0.5	ND	ND	ND	ND
Hexachlorobutadiene	0.5	ND	ND	ND	ND
2-Hexanone	10	ND	ND	ND	ND
Isopropylbenzene	0.5	ND	ND	ND	ND
p-Isopropyltoluene	0.5	ND	ND	ND	ND
Methylene chloride	10	ND	ND	ND	ND
4-Methyl-2-pentanone	5.0	ND	ND	ND	ND
Methyl-tert-butyl ether (MtBE)	1.0	ND	ND	ND	ND
Napthalene	1.0	ND	ND	ND	ND
n-Propylbenzene	0.5	ND	ND	ND	ND
Styrene	0.5	ND	ND	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	1.0	ND	ND	ND	ND
Tetrachloroethene	0.5	**46**	**42**	**27**	ND
Toluene	0.5	ND	ND	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND	ND	ND
1,1,1-Trichloroethane	0.5	ND	ND	ND	ND
1,1,2-Trichloroethane	0.5	**3.0**	**2.9**	**1.7**	ND
Trichloroethene	0.5	**160**	**150**	**180**	ND
1,2,3-Trichloropropane	0.5	ND	ND	ND	ND
Trichlorofluoromethane	0.5	ND	ND	ND	ND
Trichlorotrifluoroethane	5.0	ND	ND	ND	ND
1,2,4-Trimethylbenzene	0.5	ND	ND	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND	ND	ND
Vinyl chloride	0.5	ND	ND	ND	ND
Xylenes (total)	1.5	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	M00200-32	M00200-38	M00200-44	TRIP BLANK
Dibromofluoromethane	105	105	107	104
Toluene-d8	98	98	99	98
Bromofluorobenzene	105	105	106	104

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QC Sample Report - EPA Method 8260

Matrix: Water
Batch #: MS48260W2023

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration µg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20	117	59 - 172	Pass
Benzene	20	118	66 - 142	Pass
Trichloroethene	20	124	71 - 137	Pass
Toluene	20	116	59 - 139	Pass
Chlorobenzene	20	118	60 - 133	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	23.5	22.4	5%	22%	Pass
Benzene	23.6	22.1	7%	21%	Pass
Trichloroethene	24.9	22.8	9%	24%	Pass
Toluene	23.3	21.9	6%	21%	Pass
Chlorobenzene	23.6	22.2	6%	21%	Pass

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Analytical Notes:

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EPA 8260 - Dioxane

Client:	TRW	Date Sampled:	02/22/00
Project:	Monadnock	Date Received:	02/24/00
Job No.:	16061	Date Analyzed:	02/28/00
Matrix:	Water	Batch Number:	MS28260W002
Analyst:	JMR		

			MW-12	MW-4	MW-3	MW-8	MW-11
	Sample ID:	Blank	M00200-05	M00200-11	M00200-17	M00200-24	M00200-30
Compounds	DL	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Dioxane	10	ND	25	ND	ND	ND	ND

Surrogates (% recovery) Limits: 80 - 130

Sample ID:	Blank	M00200-05	M00200-11	M00200-17	M00200-24	M00200-30
Toluene-d8	101	101	101	101	101	100

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EPA 8260 - Dioxane

Client:	TRW	Date Sampled:	02/22/00
Project:	Monadnock	Date Received:	02/24/00
Job No.:	16061	Date Analyzed:	02/28/00
Matrix:	Water	Batch Number:	MS28260W002
Analyst:	JMR		

		MW-2	MW-2 DUP	MW-7
	Sample ID:	M00200-36	M00200-42	M00200-48
Compounds	**DL**	ug/L	ug/L	ug/L
Dioxane	10	**49**	**49**	**14**

Surrogates (% recovery) Limits: 80 - 130

	Sample ID:	M00200-36	M00200-42	M00200-48
Toluene-d8		101	100	101

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QC Sample Report - EPA Method 8260

Matrix: Water
Batch #: MS28260W003

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration µg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
1,1-Dichloroethene	20	**93**	59 - 172	**Pass**
Benzene	20	**95**	66 - 142	**Pass**
Trichloroethene	20	**96**	71 - 137	**Pass**
Toluene	20	**96**	59 - 139	**Pass**
Chlorobenzene	20	**102**	60 - 133	**Pass**

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
1,1-Dichloroethene	18.7	18.2	**3%**	22%	**Pass**
Benzene	19.1	19.3	**1%**	21%	**Pass**
Trichloroethene	19.2	19.2	**0%**	24%	**Pass**
Toluene	19.2	19.3	**0%**	21%	**Pass**
Chlorobenzene	20.5	20.1	**2%**	21%	**Pass**

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

Analytical Notes:

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QC Sample Report - EPA Method 8260

Matrix: Water
Batch #: MS28260W002

Batch Accuracy Results

Sample ID: Laboratory Control Sample

Analyte	Spike Concentration µg/L	% Recovery LCS	Acceptance Limits % Recovery	Pass/Fail
Dioxane	100	100	70 - 130	Pass

Analytical Notes:

Batch Precision Results

MS/MSD Sample ID: Laboratory Control Sample

Analyte	Spike Sample Recovery µg/L	Spike Duplicate Recovery µg/L	Relative Percent Difference (RPD)	Upper Control Limit RPD	Pass/Fail
Dioxane	100	100	0%	25%	Pass

Analytical Notes:

MS: Matrix Spike Sample
MSD: Matrix Spike Duplicate

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TRUESDAIL LABORATORIES, INC.
INDEPENDENT TESTING, FORENSIC SCIENCE, AND ENVIRONMENTAL ANALYSES

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REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373
Attn: Marylu Escher

Date: March 21, 2000
Recv'd: March 1, 2000
Lab. No.: **602470**
P.O. No.: 16061

Sample: Four (4) water samples from Monadnock Project #16061 labeled:

1. MO0200-11; 2/22/00.
2. MO0200-17; 2/22/00.
3. MO0200-24; 2/22/00.
4. MO0200-30; 2/22/00.

Investigation: Analyze by EPA Method 8270M for 1,4-dioxane.

RESULTS

The data is tabulated on the following page.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Joe Bramblett, Manager
Instrumental Methods

This report applied only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.

EPA Method 8270M

Date Sampled: February 22, 2000
Date Received: March 1, 2000
Date Extracted: March 2, 2000
Date Analyzed: March 14, 2000

Micrograms per Liter (ppb)

Sample ID	1,4-Dioxane	PQL	Method Detection Limit
MO0200-11 mw-4	ND	1	0.3
MO0200-17 mw-3	ND	1	0.3
MO0200-24 mw-8	10.1	1	0.3
MO0200-30 mw-11	ND	1	0.3

QC/QA Report (LCS/LCSD)

Matrix: **Water**

Date Extracted: March 2, 2000
Date Analyzed: March 14, 2000

Compound	Amount Spiked (ug/L)	Method Blank	Amount Recovered LCS (ug/L)	Amount Recovered LCSD (ug/L)
1,4-Dioxane	10	ND	10.4	10.5

Compound	Percent Recovered LCS	Percent Recovered LCSD	Acceptance Range(%)
1,4-Dioxane	104	105	50-120

ND-Not detected.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.

Calscience Environmental Laboratories, Inc.

March 01, 2000

Jeff Betty
Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Subject: **Calscience Work Order No.: 00-02-0873**
Client Reference: Monadnock/16061

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 02/25/00 and analyzed in accordance with the attached chain-of-custody.

The results in this analytical report are limited to the samples tested and any reproduction of this report must be made in its entirety.

If you have any questions regarding this report, require sampling supplies or field services, or information on our analytical services, please feel free to call me at (714) 895-5494.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

William H. Christensen
Quality Assurance Manager

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Centrum Analytical Laboratories, Inc.		Date Sampled:	02/22-23/00
290 Tennessee Street		Date Received:	02/25/00
Redlands, CA 92373		Date Analyzed:	02/29/00
		Work Order No.:	00-02-0873
Attn: Jeff Betty		Method:	EPA 335.2
RE: Monadnock/16061		Page 1 of 1	

All concentrations are reported in mg/L (ppm).

Sample Number	Total Cyanide Concentration	Reporting Limit
M00200-03 MW-12	0.09	0.05
M00200-09 MW-4	ND	0.05
M00200-15 MW-3	ND	0.05
M00200-22 MW-8	ND	0.05
M00200-28 MW-11	ND	0.05
M00200-34 MW-2	ND	0.05
M00200-40 MW-2 Dup	ND	0.05
M00200-46 MW-7	ND	0.05
Method Blank	ND	0.05

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

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a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Centrum Analytical Laboratories,
Inc.
290 Tennessee Street

Redlands , CA 92373

Attention: M. Escher
Fax: (909) 793-1559

Linda Geddes

LXG Linda Geddes

Report#: 63225
SUBCONTRACT

MONTGOMERY WATSON LABORATORIES
a Division of Montgomery Watson Americas, Inc.
555 East Walnut Street
Pasadena, California 91101
Tel: 626 568 6400 Fax: 626 568 6324
1 800 566 LABS (1 800 566 5227)

Laboratory Report #63225

Centrum Analytical Laboratories, Inc.
M. Escher
290 Tennessee Street
Redlands , CA 92373

Samples Received
25-feb-2000 12:15:00

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MRL	Dilution
MW-12 M00200-4 16061-1 (2002250044) Sampled on 02/22/00								
	02/29/00	111554	(EPA/300MOD/314)	Perchlorate	ND	ug/l	4.0	1
MW-4 M00200-10 16061-40 (2002250045) Sampled on 02/22/00								
	02/29/00	111554	(EPA/300MOD/314)	Perchlorate	ND	ug/l	4.0	1
MW-3 M00200-16 16061-16 (2002250046) Sampled on 02/22/00								
	02/29/00	111554	(EPA/300MOD/314)	Perchlorate	ND	ug/l	4.0	1
MW-8 M00200-23 16061-23 (2002250047) Sampled on 02/22/00								
	02/29/00	111554	(EPA/300MOD/314)	Perchlorate	ND	ug/l	4.0	1
MW-11 M00200-29 16061-29 (2002250048) Sampled on 02/23/00								
	02/29/00	111554	(EPA/300MOD/314)	Perchlorate	ND	ug/l	4.0	1
MW-2 M00200-35 16061-35 (2002250049) Sampled on 02/23/00								
	02/29/00	111555	(EPA/300MOD/314)	Perchlorate	ND	ug/l	4.0	1
MW-2 Dup M00200-41 16061-41 (2002250050) Sampled on 02/23/00								
	02/29/00	111555	(EPA/300MOD/314)	Perchlorate	ND	ug/l	4.0	1
MW-7 M00200-47 16061-47 (2002250051) Sampled on 02/23/00								
	02/29/00	111555	(EPA/300MOD/314)	Perchlorate	ND	ug/l	4.0	1
MW-12 M00200-6 16061-6 (2002250052) Sampled on 02/22/00								
				N-Nitroso dimethylamine (NDMA)				
02/25/00	03/06/00	111919	(ML/EPA 625MOD)	N-Nitroso dimethylamine (NDMA)	ND	ng/l	2.0	1
			(Surrogate)	NDMA-D6	NA	% Rec		

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Laboratory Report #63225

Centrum Analytical Laboratories, Inc.
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MRL	Dilution
MW-4 M00200-12 16061-12 (2002250053) Sampled on 02/22/00								
				N-Nitroso dimethylamine (NDMA)				
02/25/00	03/06/00	111919	(ML/EPA 625MOD)	N-Nitroso dimethylamine (NDMA)	ND	ng/l	2.0	1
			(Surrogate)	NDMA-D6	NA	% Rec		
MW-3 M00200-18 16061-18 (2002250054) Sampled on 02/22/00								
				N-Nitroso dimethylamine (NDMA)				
02/25/00	03/06/00	111919	(ML/EPA 625MOD)	N-Nitroso dimethylamine (NDMA)	ND	ng/l	2.0	1
			(Surrogate)	NDMA-D6	NA	% Rec		
MW-8 M00200-25 16061-25 (2002250055) Sampled on 02/23/00								
				N-Nitroso dimethylamine (NDMA)				
02/29/00	03/03/00	111763	(ML/EPA 625MOD)	N-Nitroso dimethylamine (NDMA)	ND	ng/l	2.0	1
			(Surrogate)	NDMA-D6	NA	% Rec		
MW-11 M00200-31 16061-31 (2002250056) Sampled on 02/23/00								
				N-Nitroso dimethylamine (NDMA)				
02/29/00	03/03/00	111763	(ML/EPA 625MOD)	N-Nitroso dimethylamine (NDMA)	ND	ng/l	2.0	1
			(Surrogate)	NDMA-D6	NA	% Rec		
MW-2 M00200-37 16061-37 (2002250057) Sampled on 02/23/00								
				N-Nitroso dimethylamine (NDMA)				
02/29/00	03/03/00	111763	(ML/EPA 625MOD)	N-Nitroso dimethylamine (NDMA)	ND	ng/l	2.0	1
			(Surrogate)	NDMA-D6	NA	% Rec		

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Centrum Analytical Laboratories,
Inc.
(continued)

Prepared	Analyzed	QC Batch#	Method	Analyte	Result	Units	MRL	Dilution
MW-2 Dup								
M00200-43 16061-43 (2002250058) Sampled on 02/23/00								
				N-Nitroso dimethylamine (NDMA)				
03/01/00	03/06/00	111938	(ML/EPA 625MOD)	N-Nitroso dimethylamine (NDMA)	ND	ng/l	2.0	1
			(Surrogate)	NDMA-D6	NA	% Rec		
MW-7								
M00200-49 16061-49 (2002250059) Sampled on 02/23/00								
				N-Nitroso dimethylamine (NDMA)				
03/01/00	03/06/00	111938	(ML/EPA 625MOD)	N-Nitroso dimethylamine (NDMA)	ND	ng/l	2.0	1
			(Surrogate)	NDMA-D6	NA	% Rec		

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Report
Comments
#63225

Group Comments

(NDMA) Unable to calculate absolute recovery of NDMA-d6 due to poor chromatography of internal standard. NDMA calculated by isotope dilution using NDMA-d6 as intenal standard.

(QC batch#: 111555)
Test: Perchlorate
QC Type: LCS2
The LCS recovery meets the EPA method limit of 90-110%.

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Laboratory
QC Summary Report
#63225

Centrum Analytical Laboratories,
Inc.

QC Batch #111554 - Perchlorate **Analysis Date: 02/29/2000**

2002250044	M00200-4	16061-1
2002250045	M00200-10	16061-40
2002250046	M00200-16	16061-16
2002250047	M00200-23	16061-23
2002250048	M00200-29	16061-29

QC Batch #111555 - Perchlorate **Analysis Date: 02/29/2000**

2002250049	M00200-35	16061-35
2002250050	M00200-41	16061-41
2002250051	M00200-47	16061-47

QC Batch #111763 - N-Nitroso dimethylamine (NDMA) Analysis Date: 03/03/2000

2002250055	M00200-25	16061-25
2002250056	M00200-31	16061-31
2002250057	M00200-37	16061-37

QC Batch #111919 - N-Nitroso dimethylamine (NDMA) Analysis Date: 03/06/2000

2002250052	M00200-6	16061-6
2002250053	M00200-12	16061-12
2002250054	M00200-18	16061-18

QC Batch #111938 - N-Nitroso dimethylamine (NDMA) Analysis Date: 03/06/2000

2002250058	M00200-43	16061-43
2002250059	M00200-49	16061-49

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Laboratory QC Report #63225

Centrum Analytical Laboratories, Inc.

QC Batch #111554 Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 20	02250226		(0.00 - 0.00)	
LCS1	Perchlorate	20.0	21.7	108.5	(90.00 - 110.00)	
LCS2	Perchlorate	20.0	21.8	109.0	(90.00 - 110.00)	0.46
MBLK	Perchlorate	ND				
MS	Perchlorate	20.0	22.0	110.0	(75.00 - 125.00)	
MSD	Perchlorate	20.0	21.4	107.0	(75.00 - 125.00)	2.8

QC Batch #111555 Perchlorate

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
MS	Spiked sample	Lab # 20	02250226		(0.00 - 0.00)	
LCS1	Perchlorate	20.0	21.8	109.0	(90.00 - 110.00)	
LCS2	Perchlorate	20.0	22.0	110.0	(90.00 - 110.00)	0.91
MBLK	Perchlorate	ND				
MS	Perchlorate	20.0	22.0	110.0	(75.00 - 125.00)	
MSD	Perchlorate	20.0	21.4	107.0	(75.00 - 125.00)	2.8

QC Batch #111763 N-Nitroso dimethylamine (NDMA)

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	N-Nitroso dimethylamine (NDMA)	10	9.2	92.0	(70.00 - 130.00)	
LCS2	N-Nitroso dimethylamine (NDMA)	2	2.0	100.0	(70.00 - 130.00)	
MBLK	N-Nitroso dimethylamine (NDMA)	ND				
MS	N-Nitroso dimethylamine (NDMA)	2	2.2	110.0	(70.00 - 130.00)	
MSD	N-Nitroso dimethylamine (NDMA)	2	2.2	110.0	(70.00 - 130.00)	0.00

QC Batch #111919 N-Nitroso dimethylamine (NDMA)

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	N-Nitroso dimethylamine (NDMA)	10	8.2	82.0	(70.00 - 130.00)	
LCS2	N-Nitroso dimethylamine (NDMA)	2	1.8	90.0	(70.00 - 130.00)	
MBLK	N-Nitroso dimethylamine (NDMA)	ND				

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only and not applicable for ICR monitoring.

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Laboratory
QC Report
#63225

Centrum Analytical Laboratories,
Inc.
(continued)

MS	N-Nitroso dimethylamine (NDMA)	2	2.0	100.0	(70.00 - 130.00)	
MSD	N-Nitroso dimethylamine (NDMA)	2	2.0	100.0	(70.00 - 130.00)	0.00

QC Batch #111938 N-Nitroso dimethylamine (NDMA)

QC	Analyte	Spiked	Recovered	Yield (%)	Limits (%)	RPD (%)
LCS1	N-Nitroso dimethylamine (NDMA)	100	78	78.0	(70.00 - 130.00)	
LCS2	N-Nitroso dimethylamine (NDMA)	20	15	75.0	(70.00 - 130.00)	
MBLK	N-Nitroso dimethylamine (NDMA)	ND				
MS	N-Nitroso dimethylamine (NDMA)	20	14	70.0	(70.00 - 130.00)	
MSD	N-Nitroso dimethylamine (NDMA)	20	14	70.0	(70.00 - 130.00)	0.00

Spikes which exceed Limits and Method Blanks with positive results are highlighted by Underlining.
Criteria for MS and DUP are advisory only and not applicable for ICR monitoring.

TRUESDAIL LABORATORIES, INC.

Report Continued

Centrum Analytical
LN **602470**
Page 2

EPA Method 8270M

Date Sampled: February 22, 2000
Date Received: March 1, 2000
Date Extracted: March 2, 2000
Date Analyzed: March 14, 2000

Micrograms per Liter (ppb)

Sample ID	1,4-Dioxane	PQL	Method Detection Limit
MO0200-11	ND	1	0.3
MO0200-17	ND	1	0.3
MO0200-24	10.1	1	0.3
MO0200-30	ND	1	0.3

QC/QA Report (LCS/LCSD)

Matrix: **Water**

Date Extracted: March 2, 2000
Date Analyzed: March 14, 2000

Compound	Amount Spiked (ug/L)	Method Blank	Amount Recovered LCS (ug/L)	Amount Recovered LCSD (ug/L)
1,4-Dioxane	10	ND	10.4	10.5

Compound	Percent Recovered LCS	Percent Recovered LCSD	Acceptance Range (%)
1,4-Dioxane	104	105	50-120

ND-Not detected.

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.

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TUSTIN, CALIFORNIA 92780-7008
(714) 730-6239 · FAX (714) 730-6462
www.truesdail.com

REPORT

Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373
Attn: Marylu Escher

Date: March 21, 2000
Recv'd: March 1, 2000
Lab. No.: **602470**
P.O. No.: 16061

Sample: Four (4) water samples from Monadnock Project #16061 labeled:

1. MO0200-11; 2/22/00.
2. MO0200-17; 2/22/00.
3. MO0200-24; 2/22/00.
4. MO0200-30; 2/22/00.

Investigation: Analyze by EPA Method 8270M for 1,4-dioxane.

RESULTS

The data is tabulated on the following page.

Respectfully submitted,
TRUESDAIL LABORATORIES, INC.

Joe Bramblett, Manager
Instrumental Methods

This report applied only to the sample, or samples, investigated and is not necessarily indicative of the quality or condition of apparently identical or similar products. As a mutual protection to clients, the public, and these laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these laboratories.

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lab@centrum-labs.com

Centrum Job # 160161

Chain of Custody Record

Project No:

Project Name: MONADNOCK

Project Manager: JEFF GWINN

Phone: (562) 988-2755

Fax: (562) 988-2759

Client Name: (Report and Billing) TRW

Address: (Report and Billing) ONE SPACE PARK REDONDO BEACH, CA 90278

Please Circle Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	~~8015M: Gas only~~ (GRO) Cd, Cr	8021B: BTEX/MtBE Only	418.1 (TRPH), 413.2	335.2 Total Cyanide	GCMS: (8260B) 8021B, 624, 524.2	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB	PERCHLORATE	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr	1,4 DIOXANE	NDMA	Remarks/Special Instructions
1	MC0200-01	2-22-00	1330	H2O	MONADNOCK	2-40ml. VOA VIALS						X										
2	MC0200-02	↓	↓	↓	↓	250ml. 1-HDPE		X														
3	MC0200-03					500ml. 1-HDPE					X											
4	MC0200-04					100ml. 1-HDPE										X						
5	MC0200-05					1-Glass														X		
6	MC0200-06		↓			1-Glass															X	
7	MC0200-07		1400			2-40ml. VOA VIALS						X										
8	MC0200-08					1-250ml. HDPE		X														
9	MC0200-09					1-500ml. HDPE					X											
10	MC0200-10	↓	↓	↓	↓	1-100ml. HDPE										X						

Turn-Around Time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT (2-WEEK TAT)

*Requires PRIOR approval, additional charges apply

Requested due date: _____

Remarks/Special Instructions

1) Relinquished by: (Sampler's Signature) Bart Wessel — Date: 2-24-00 Time: 1000

2) Received by: [signature] — Date: 2-24-00 Time: 1000

3) Relinquished by: — Date: Time:

4) Received by: — Date: Time:

5) Relinquished by: — Date: Time:

6) Received for Laboratory by: [signature] — Date: 2/24/00 Time: 11:30

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:
- Samples chilled? ☒ Yes ☐ No ☐ From Field
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☒ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☒ Lab disposal

Laboratory Notes: SEND REPORT TO MO TABON: 4455 TORRANCE BLVD., #955, TORRANCE, CA 90503
SPECIAL DETECTION LIMITS: PERCHLORATE (4 ppb) 1,4 DIOXANE (2 ppb) NDMA (0.033 ppb)

Sample Locator No. E-4

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy

Centrum Analytical Laboratories, Inc.

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REDLANDS, CA 92373
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FAX (909) 793-1559
lab@centrum-labs.com

Centrum Job # 160061

Chain of Custody Record

Project No:

Project Name: MONADNOCK

Project Manager: JEFF GWINN

Phone: (562) 988-2755

Fax: (562) 988-2759

Client Name: (Report and Billing) TRW

Address: (Report and Billing) ONE SPACE PARK REDONDO BEACH, CA 90278

Please Circle Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	~~8015M: Gas only~~ LCIC, Cd, Cr	8021B: BTEX/MtBE Only	418.1 (TRPH), 413.2	335.2 Total Cyanide	GCMS: 8260B, 8021B, 624, 524.2	GCMS: MtBE Conf. Only	~~GCMS: 8270C, 625~~ MS/MSD	8080: Pesticides, PCBs, Pest/PCB	PERCHLORATE	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr	1,4 DIOXANE	NDMA	Remarks/Special Instructions
11	M00200-11	2.22.00	1400	H2O	MONADNOCK	1-1000ML GLASS														X		
12	M00200-12	↓	↓	↓	↓	2-1000ML GLASS															X	
13	M00200-13	↓	1430	↓	↓	2-40ML VOA VIALS						X										
14	M00200-14	↓	↓	↓	↓	1-250ML HDPE		X														
15	M00200-15	↓	↓	↓	↓	1-500ML HDPE					X											
16	M00200-16	↓	↓	↓	↓	1-100ML HDPE										X						
17	M00200-17	↓	↓	↓	↓	1-1000ML GLASS														X		
18	M00200-18	↓	↓	↓	↓	2-1000ML GLASS															X	
19	M00200-19	↓	↓	↓	↓	2-40ML VOA VIALS								X								
20	M00200-20	2.23.00	0800	↓	↓	2-40ML VOA VIALS						X										

1) Relinquished by: (Sampler's Signature) Bart Vessel — Date: 2.24.00 Time: 1000

2) Received by: [signature] — Date: 2.24.00 Time: 1000

3) Relinquished by: — Date: Time:

4) Received by: — Date: Time:

5) Relinquished by: — Date: Time:

6) Received for Laboratory by: [signature] — Date: 2/24/00 Time: 11:30

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:
Samples chilled? ☒ Yes ☐ No ☐ From Field
Custody seals? ☐ Yes ☒ No
All sample containers intact? ☒ Yes ☐ No
☒ Courier ☐ UPS/Fed Ex ☐ Hand carried

Turn-Around Time
☐ 24 Hr. RUSH*
☐ 48 Hr. RUSH*
☐ Normal TAT
(2-WEEK TAT)
*Requires PRIOR approval, additional charges apply
Requested due date: _____

Sample Disposal
☐ Client will pick up
☐ Return to client
☒ Lab disposal

Laboratory Notes: (SEE PAGE 1)

Sample Locator No. E-4

White Copy - Original (Accompanies Samples) Yellow Copy - Centrum Files Pink Copy - Centrum duplicate Gold Copy - Client Copy

Centrum Analytical Laboratories, Inc.

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lab@centrum-labs.com

Centrum Job # 160061

Chain of Custody Record

Project No:

Project Name: MONADNOCK

Project Manager: JEFF GWINN

Phone: (562) 988-2755

Fax: (562) 988-2759

Client Name: (Report and Billing) TRW

Address: (Report and Billing) ONE SPACE PARK REDONDO BEACH, CA 90278

Please Circle Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	~~8015M: Gas only~~ 6010 Cd, Cr	8021B: BTEX/MtBE Only	418.1 (TRPH), 413.2	335.2 Total Cyanide	GCMS: 8260B, 8021B, 624, 524.2	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB	Perchlorate	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr	1,4 Dioxane	NDMA	Remarks/Special Instructions
21	MOO200-21	2-23-00	0800	H2O	MONADNOCK	1-250ML HDPE		X														
22	MOO200-22	↓	↓	↓	↓	1-500ML HDPE					X											
23	MOO200-23	↓	↓	↓	↓	1-1000ML HDPE										X						
24	MOO200-24	↓	↓	↓	↓	1-1000ML GLASS														X		
25	MOO200-25	↓	↓	↓	↓	2-1000ML GLASS															X	
26	MOO200-26	↓	0900	↓	↓	2-40ML VOA VIALS						X										
27	MOO200-27	↓	↓	↓	↓	1-250ML HDPE		X														
28	MOO200-28	↓	↓	↓	↓	1-500ML HDPE					X											
29	MOO200-29	↓	↓	↓	↓	1-1000ML HDPE										X						
30	MOO200-30	↓	↓	↓	↓	1-1000ML GLASS														X		

Turn-Around Time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT (2-WEEK TAT)

*Requires PRIOR approval, additional charges apply

Requested due date: _____

	Date:	Time:
1) Relinquished by: (Sampler's Signature) Bart Wassel	2-24-00	1000
2) Received by: [signature]	2-24-00	1000
3) Relinquished by:		
4) Received by:		
5) Relinquished by:		
6) Received for Laboratory by: [signature]	2/24/00	11:30

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:
- Samples chilled? ☒ Yes ☐ No ☐ From Field
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☒ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☒ Lab disposal

Laboratory Notes: (SEE PAGE 1)

Sample Locator No. E-4

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(909) 798-9336 ● (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Centrum Job # 16061

Chain of Custody Record

Project No:

Project Name: MONADNOCK

Project Manager: JEFF GWINN

Phone: (562) 988-2755

Fax: (562) 988-2759

Client Name: (Report and Billing) TRW

Address: (Report and Billing) ONE SPACE PARK REDONDO BEACH, CA 90278

Please Circle Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	~~8015M: Gas only~~ 6010 Cd, Cr	8021B: BTEX/MtBE Only	418.1 (TRPH), 413.2	335.2 Total Cyanide	GCMS: 8260B, 8021B, 624, 524.2	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB	PERCHLORATE	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr	1,4 DIOXANE	NDMA	Remarks/Special Instructions
31	M00200-31	2-23-00	0900	H2O	MONADNOCK	2-1000ML GLASS															X	
32	M00200-32		0945			2-40ML VOA VIALS						X										
33	M00200-33					1-250ML HDPE		X														
34	M00200-34					1-500ML HDPE					X											
35	M00200-35					1-100ML HDPE										X						
36	M00200-36					1-1000ML HDPE														X		
37	M00200-37					2-1000ML HDPE															X	
38	M00200-38		1015			2-40ML VOA VIALS						X										
39	M00200-39					1-250ML HDPE		X														
40	M00200-40					1-500ML HDPE					X											

Turn-Around Time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT (2-WEEK TAT)

*Requires PRIOR approval, additional charges apply

Requested due date: _____

	Date:	Time:
1) Relinquished by: (Sampler's Signature) Bart Nissel	2-24-00	1000
2) Received by: [signature]	2-24-00	1000
3) Relinquished by:		
4) Received by:		
5) Relinquished by:		
6) Received for Laboratory by: [signature]	2/24/00	11:30

The delivery of samples and the signature on this chain of custody form constitutes authorization to perform the analyses specified above under the Terms and Conditions set forth on the back hereof.

To be completed by Laboratory personnel:
- Samples chilled? ☒ Yes ☐ No ☐ From Field
- Custody seals? ☐ Yes ☒ No
- All sample containers intact? ☒ Yes ☐ No
- ☒ Courier ☐ UPS/Fed Ex ☐ Hand carried

Sample Disposal
- ☐ Client will pick up
- ☐ Return to client
- ☒ Lab disposal

Laboratory Notes: (SEE PAGE 1)

Sample Locator No. E-4

Centrum Analytical Laboratories, Inc.

290 TENNESSEE STREET
REDLANDS, CA 92373
www.centrum-labs.com

(909) 798-9336 • (800) 798-9336
FAX (909) 793-1559
lab@centrum-labs.com

Centrum Job # 16061

Chain of Custody Record

Project No:

Project Name: MONADNOCK

Project Manager: JEFF GWINN

Phone: (562) 988-2755

Fax: (562) 988-2759

Client Name: (Report and Billing) TRW

Address: (Report and Billing) ONE SPACE PARK REDONDO BEACH, CA 90278

Please Circle Analyses Requested

Centrum ID (Lab use only)	Sample ID (As it should appear on report)	Date sampled	Time sampled	Sample matrix	Site location	Containers: # and type	8015M: Diesel, Fuel Screen, Carbon Chain	~~8015M: Gas only~~ (6010) Cd, Cr	8021B: BTEX/MtBE Only	418.1 (TRPH), 413.2	335.2) Total Cyanide	GCMS: (8260B) 8021B, 624, 524.2	GCMS: MtBE Conf. Only	GCMS: 8270C, 625	8080: Pesticides, PCBs, Pest/PCB	Perchlorate	Metals: Title 22 (CAM), RCRA, PP	pH, TDS, TSS, Conductivity	Flashpoint, Hex Cr	1,4 Dioxane	NDMA	Remarks/Special Instructions
41	MOO200-41	2-23-00	1015	H2O	MONADNOCK	1-100 ML HDPE										X						
42	MOO200-42	↓	↓	↓	↓	1-1000 ML GLASS														X		
43	MOO200-43	↓	↓	↓	↓	2-1000 ML GLASS															X	
44	MOO200-44	↓	1200	↓	↓	2-40 ML VOAVials						X										
45	MOO200-45	↓	↓	↓	↓	1-250 ML HDPE		X														
46	MOO200-46	↓	↓	↓	↓	1-500 ML HDPE					X											
47	MOO200-47	↓	↓	↓	↓	1-100 ML HDPE										X						
48	MOO200-48	↓	↓	↓	↓	1-1000 ML GLASS														X		
49	MOO200-49	↓	↓	↓	↓	2-1000 ML GLASS															X	
50	TRIP BLANK	2-22-00	1300	↓	↓	2-40 ML VOAVials						X										

Turn-Around Time
- ☐ 24 Hr. RUSH*
- ☐ 48 Hr. RUSH*
- ☐ Normal TAT (2-WEEK TAT)

*Requires PRIOR approval, additional charges apply

Requested due date: _____

1) Relinquished by: (Sampler's Signature) [signature] Date: 2-24-00 Time: 1000

2) Received by: [signature] Date: 2-24-00 Time: 1000

3) Relinquished by: Date: Time:

4) Received by: Date: Time:

5) Relinquished by: Date: Time:

6) Received for Laboratory by: [signature] Date: 2/24/00 Time: 11:30

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Laboratory Notes: (SEE PAGE 1)

Sample Locator No. E-4