RESNA
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93 JUL 26 PM 12:37

1500 So. Union Avenue
Bakersfield, California 93307
Phone: (805) 835-7700
FAX: (805) 835-7717

LETTER OF TRANSMITTAL

TO: Ms. Eva Chu
Alameda County Department of
Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

DATE: July 23, 1993

RE: Scotsman Corporation
6055 Scarlett Court
Dublin, California
Site Closure Report, 7/20/93

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following:

- ☐ Site Assessment Report
- ☐ Workplan for Site Assessment
- ☐ Preacquisition Site Assessment
- ☐ Closure Report
- ☐ Proposal
- ☒ Site Closure Report

THESE ARE TRANSMITTED as checked below:

- ☒ For approval
- ☐ For your use
- ☐ FOR BIDS DUE _____ 19__
- ☐ As requested
- ☐ For review and comment
- ☐ _____

REMARKS Enclosed you will find the above mentioned report for your use. If you should have any questions, please do not hesitate to call me at (805)835-7700.

COPY TO: Mr. Rich Hiett, Regional Water Quality Control Board
Mr. Pete Fagrell, First Interstate Bank of California
Ms. Tommi Lee Gill, First Interstate Bank of California

SIGNED: Tim Reed / tdc
Timothy C. Reed, Project Manager

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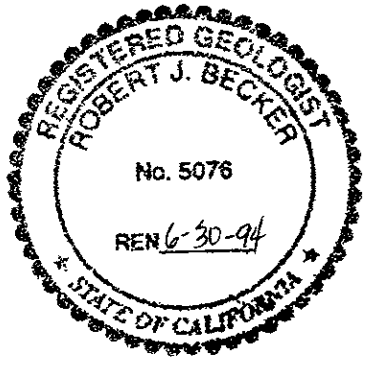
SCOTSMAN CORPORATION
6055 Scarlett Court
Dublin, California

SITE CLOSURE REPORT
July 20, 1993

Report Prepared for:
FIRST INTERSTATE BANK OF CALIFORNIA
707 Wilshire Blvd., W7-22
Los Angeles, California 90017

Timothy C. Reed, R.E.A. #3726
Project Geologist



Robert J. Becker, R.G. #5076
Professional Services Supervisor

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ILLUSTRATIONS

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APPENDICES

1.0 INTRODUCTION

This report is a compilation of the environmental assessment and remedial work performed at the property located at 6055 Scarlett Court, Dublin California. This report will list the site work performed and a summary of the results. Based on the information collected throughout the project and other supplemental data, a recommendation is made for case closure of the site.

2.0 SITE DESCRIPTION

The project site is located at the former Scotsman Corporation facility located at 6055 Scarlett Court in Dublin California (Plate 1). The site is situated in a commercial/industrial district and occupies approximately 7.5 acres. It is estimated that 1/4 to 1/3 of the site covered with concrete or asphalt. The property is bounded to the West by a drainage canal and to the South by Scarlett Court, which parallels the Interstate 580 Freeway. Adjacent properties include active commercial retail businesses and unoccupied industrial sites.

3.0 PREVIOUS WORK

On October 23, 1987, two 500 gallon underground gasoline storage tanks were removed from the site by Geonomics Inc. The water table was observed near the tank bottoms at six and one-half feet. During the removal, corrosion was noted on the tanks and one of the tanks was described as having a hole by the fill point. Laboratory analysis of soil samples collected during the removal reported substantial levels of hydrocarbons. Based on this preliminary assessment, the Alameda County Department of Environmental Health ordered a site investigation.

On December 9, 1988, Groundwater Resources, Inc. (GRI), now RESNA Industries Inc. (RESNA), performed a preliminary site investigation to determine if the soil and groundwater around the former tank locations had been impacted. It was determined that the soil around the tanks had minimal impact, however the groundwater below was reported to have significant levels of hydrocarbons. This report was submitted to the Alameda County Department of Environmental Health (GRI, Jan. 19, 1989). The Department requested that further work be performed to establish aquifer characteristics and further define the extent of the groundwater hydrocarbon plume. On May 24, 1989, GRI constructed a series of groundwater monitoring wells to determine the groundwater gradient and to assess the extent of downgradient hydrocarbon migration. The report titled "Site Characterization Report, June 30, 1989" stated that the hydrocarbon plume had migrated downgradient of the tank location. The report recommended the drilling of a series of boreholes to the groundwater around the suspected plume to collect water samples and determine the lateral extent of the plume. An addendum to the report was sent to Alameda County recommending that one of the downgradient boreholes be completed as a monitoring well. Verbal approval of the plan was received on October 3, 1989. This phase of the site characterization was completed on November 30, 1989. A report titled "Site Characterization Report and Remediation Plan, December 20, 1989" was submitted to the Alameda County Department of Environmental Health. The report demonstrated that the plume had been defined and recommended the installation of a recovery well and startup of groundwater remediation (Plates 2&3). Approval of the plan was received on January 23, 1990.

Full operation of the treatment system began on April 13, 1990. On June 6, 1991, the installation of two additional recovery wells was proposed. The wells RW-2 and RW-3 were installed on July 18, 1991. A subsequent review of the project showed that the groundwater plume had been reduced to a small area around MW-1, MW-6 and RW-2 (see Plate 4).

On April 13, 1992, a plan was submitted for the over excavation of the soil around the three affected monitoring wells. The excavation of the soil was completed on August 20, 1992. Approximately 75 cubic yards of clean soil and 50 yards of contaminated soil were removed. Three groundwater monitoring wells were abandoned during the excavation. MW-1 and MW-6 were completely removed while RW-2 was filled with bentonite and the well casing was removed from the bottom of the excavation to the surface. Soil samples collected from the sidewalls of the excavation were below detection levels. A four point composite sample was collected from the clean pile for every twenty cubic yards of soil. Since the clean pile contained approximately 75 cubic yards of soil, four composite samples were collected and analyzed for BTX&E and TPH gasoline constituents. The hydrocarbon concentrations for these samples were also reported to be below detection levels. A four point composite sample was also collected from the contaminated soil pile. This sample was analyzed for BTX&E, TPH gasoline, Toxicity Characteristic Leaching Procedures (TCLP) for BTX&E, Soluble Threshold Limit Concentration (STLC) and Corrosivity, Ignitability and Reactivity. The reported concentration for TPH gasoline was 10 ppm, 0.018 ppm for Ethylbenzene, and 0.055 ppm for Total Xylenes. The results of the other analyses were reported to be below detection levels or action levels. Since the concentration in the soil was only 10 ppm, it was decided that spread aeration of the soil would be the most economical method for remediation. On August 27, 1992, approval was sought from the Alameda County Department of Environmental Health for the aeration of the soil. Approval was received from Mr. Scott Seery for the aeration of the soil and the backfilling of the excavation. It was stipulated that the excavation should be backfilled with clean imported soil first. The clean soil previously excavated would be used to fill the remainder of the excavation. The Bay Area Air Quality Management District (BAAQMD) was notified of the proposed soil aeration. A representative of the BAAQMD stated that it was not necessary to obtain a permit for any soil containing less than 50 ppm. On September 9, the excavation was backfilled and the contaminated soil was spread on the vacant land at the site. The soil was spread to an average thickness of 6 inches (RESNA, September 14, 1992).

Upon completion of the over excavation, groundwater extraction was discontinued. A groundwater monitoring report for the third quarter of 1992 was submitted to Alameda County on December 1, 1992. The report showed the results of the latest monitoring event and requested closure of the site based on the historic record of clean analysis for the remaining wells. A letter from Alameda County, dated January 6, 1993, stated that closure cannot be recommended until it is shown that MW-5, MW-7, RW-1 or RW-3 are in a verified downgradient location.

In the Fourth Quarter Monitoring Report, March 8, 1993, the results of the analysis for February 1993 were reported to be below detection. The results of the analysis indicated that all the wells in the vicinity of the former plume location remain clean. It was also shown that the groundwater elevations recorded for February 1993 were the highest since March 1990. Gradient calculation showed that at least three wells are located in the downgradient direction from the former plume location. Closure was recommended based on the data showing that the last five Quarterly Reports for the wells remaining near the plume location had shown that hydrocarbon concentration have remained below California drinking water standards since September 1991 (Table 1). A letter from Alameda County,

dated March 17, 1993, stated that closure could not be recommended and monitoring should continue. A subsequent letter from Alameda County, April 15, 1993, stated that closure would be considered after either three consecutive monthly or two consecutive quarterly sampling events are performed. Three sampling events were performed on April 27, 1993, May 27, 1993, and July 2, 1993. The results of the analysis are included in this report.

TABLE 1
Quarterly Hydrocarbon Concentrations • September 1991 to February 1993

DATE	*MW-2*	*MW-3*	*MW-4*	*MW-5*	*MW-7*	*MW-8*	*RW-1*	*RW-3*
Benzene (ppb)								
TPH(ppb)								
9/17/91	ND	ND	NA	ND	ND	ND	ND	NA
	ND	ND	NA	ND	ND	ND	ND	NA
4/23/92	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	110	ND	ND	ND	ND
7/10/92	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
10/21/92	ND	ND	ND	ND	ND	ND	ND	ND
	ND	ND	ND	ND	ND	ND	ND	ND
2/11/93	NA	NA	NA	ND	ND	NA	ND	ND
	NA	NA	NA	ND	ND	NA	ND	ND

NA = Not Analyzed; ND = No Detection

4-27-93 ND ND ND 150
5-27-93 ND ND ND ND
7-2-93 ND ND ND 83

4.0 INVESTIGATIVE METHODS

The investigation of the soil and groundwater at the project site utilized drill rigs for soil borings, soil sample collection and the installation of monitoring wells. Typically a Mobil Drill B53 or B61 rig was used on all soil borings and well installations using either six-inch solid stem augers or eight- to twelve- inch hollow stem augers. A total of 14 soil borings and 11 groundwater monitoring wells were constructed during the investigation and cleanup of the site.

4.1 Soil Borings and Sampling

All borings were made in the area of the tank excavation using either six-inch solid stem or eight-inch, hollow-stem continuous flight augers. Core samples were obtained with a two and one-half inch diameter California modified split spoon sampler. All cores were described as they were acquired and a log of each boring was prepared (see Boring and Well Logs, Appendix C). The undisturbed cores selected for laboratory analysis were immediately sealed inside the brass tubes with Teflon lined plastic end-caps and integrity tape. All samples were immediately labeled and placed on ice. A Chain of Custody was maintained for the samples transported to the laboratory for analysis. The augers were steam cleaned and the core-samplers were washed and rinsed after each use to avoid cross-contamination (see Sampling Protocol, Appendix D).

4.2 Monitoring Well Construction

All monitoring wells were constructed using eight-inch hollow-stem augers. Typically each boring was drilled to a depth five to ten feet below groundwater. Two-inch and four-inch PVC well casing was installed in the boring with ten to fifteen feet of slotted casing. Clean filter pack sand was placed in the annulus of the boring up to two feet above the top of the slotted casing. A bentonite seal was then placed from the top of the sand to approximately one foot below grade. A flush mounted traffic box was placed over each well for security. Each well was developed by surging and bailing until relatively few fines were produced.

4.3 Groundwater Sampling

Each groundwater monitoring well sampled was purged a minimum of three well volumes or until dry according to the attached Sampling Protocol, Appendix D. Samples were collected using disposable bailers and placed in 40 ml VOA bottles for analysis. Each sample was labeled, chilled and transported, under a Chain of Custody, to a State Certified laboratory for analysis. A duplicate sample was collected from each well. A travel blank was provided to determine whether cross contamination may have occurred during transport.

4.4 Analytical Methods

Soil and water samples were analyzed per California DOHS LUFT Manual recommendations using EPA Method 5030/8015/8020. Samples were analyzed for gasoline constituents Benzene, Toluene, Ethyl Benzene, Total Xylenes and for Total Petroleum Hydrocarbons.

5.0 EXTENT OF HYDROCARBONS IN SOIL AND GROUNDWATER

5.1 Hydrocarbons in Vadose Soil

All soil samples collected in the vadose zone from each monitoring well and boring were reported to have little or no significant contamination. Since the tanks were situated directly above the water table, all vadose contaminated soil was excavated during the tank removals. No evidence of lateral spread of hydrocarbons in the unsaturated soil was observed.

5.2 Hydrocarbons in Groundwater

A total of nine groundwater monitoring and recovery wells were constructed in the vicinity of the former tank locations. In addition, seven borings were drilled to a depth of five feet below the water table. Water samples were collected from these borings to help determine the extent of the hydrocarbon plume (Plate 4). The only samples to have detectable concentrations of hydrocarbons were in MW-1, MW-6, MW-5, RW-1, RW-2, RW-3 and in borings B-8 and B-9. The extent of the groundwater plume was therefore defined to an area of approximately 1250 ft2. The highest recorded concentrations of Benzene and Total Petroleum Hydrocarbons in the groundwater were 1000 ppb and 72,000 ppb respectively.

6.0 GEOLOGY AND HYDROLOGY

The site is situated in the north side of the Livermore Valley which is, in part, the surface expression of a structural fold which underlies it. Alluvium which fills this portion of the valley is from the hills northeast of Dublin. Locally, the sediments are very fine textured, reflecting its source, the relatively soft sedimentary bedrock to the North. Underlying the fine textured surface deposits are Livermore Gravel beds derived from the hills bordering the Valley to the South (University of California Pubs. Geol. Sci. Bull, 1958).

The project area is in the Dublin subbasin, which covers 4,957 acres of land in the northwest portion of the Livermore Valley Ground Water Basin (see Plate 5). The Dublin subbasin is bounded on the West by nonwater-bearing marine sediments. Continental water-bearing sediments of the Tassajara Formation occur along the northwest and northeast boundary. A section of the southern boundary is along the contact between valley-fill materials and the sediments of the Livermore Formation. All other boundaries are fault controlled (California Department of Water Resources, 1974).

The Dublin subbasin is composed of both unconfined and confined aquifers. The shallower, unconfined aquifers, are generally about 20 feet below the ground surface and have a potentiometric surface which slopes southward at about 20 feet per mile. The potentiometric surfaces of the deeper, confined aquifers demonstrate the complexities of a multiple aquifer system. The northern part of the subbasin is about 80 feet below grade and slopes southward at about 30 feet per mile. The southern portion of the subbasin is only about 50 feet below grade and slopes southward at about 20 feet per mile. Aquifers of the subbasin are essentially flatlying. There are, however, local variations which cause dips of up to eight degrees and result in slightly undulating aquifer horizons (California Department of Water Resources, 1974).

The local stratigraphy at the project site displayed the same fine textured sediments described for the region. All soils encountered near the former tank locations are exclusively grayish black to light brownish gray silty clay or clayey silt. Typically, the soil was described as having high plasticity.

7.0 BENEFICIAL USES OF GROUNDWATER

7.1 Well Inventory

A total of four groundwater supply wells have been located within one-half mile of the site (Plate 6). None of the wells are located in the verified down gradient direction from the project site. A well designated 3S1E 6G4 is located on the adjacent property to the north at 6085 Scarlett Ct. This well is reported to be screened from 108 feet to 186 feet and is not currently in use. The well 3S1E 6G6 is located at 6015 Scarlett Ct., to the West of the site. This well is screened from 285 feet to 292 feet. A well designated 3S1E 6G5 is located east of the site. This well is screened from 103 feet to 178 feet. The fourth well is located northeast of the site and has the designation 2S1E 6C5. No information is listed on the screened intervals, however, the well is reported to be for non-consumptive use (Personal communication, Craig Mayfield, Alameda County Flood Control District, July 14, 1993).

7.2 Contaminant Fate Transport

An approximation for the groundwater velocity at the site has been calculated based on information collected throughout the project.

A chart showing the historic water levels in MW-7 is presented on Plate 7. This chart demonstrates that during April 1993, the groundwater was the highest since measurements started in July 1989. A groundwater gradient map was constructed using the April 1993 water elevations (Plate 8). The direction of groundwater flow has consistently trended to the South or Southwest throughout the life of the project. This agrees with the reported regional flow direction as stated in Section 6.0.

Since the April 1993 measurements had the highest calculated gradient, these values were used to calculate a maximum aquifer seepage velocity for the site. Aquifer parameters were calculated using the results of a Slug Test performed on MW-6 in May 1989. From this data, the Conductivity of the aquifer was calculated to be 0.0006482 ft/min. Using a groundwater gradient of 0.52 the Discharge Velocity was calculated to be approximately 176 ft/year (Fetter, 1980, pg. 116). Since the actual plume has not migrated more than 40 feet, it can be reasoned that the actual velocity is at least four times lower. Using the higher velocity, it would take approximately 15 years for the groundwater at the site to move one-half mile down gradient, assuming all conditions remain constant (Appendix A).

Vertical movement of the groundwater is considered to be substantially less than that calculated for the horizontal. A Groundwater Level Contour Map developed by the Zone 7 Water Agency shows the depth to the first primary aquifer at the site is between 320 feet and 330 feet (Plate 9). Since no vertical conduits are identified down gradient of the site, vertical contaminant transport to the lower aquifer is not considered to be a factor.

7.3 Sources of Drinking Water Policy Determination

Monitoring and extraction wells constructed at the site varied greatly in recharge rates. Low range recharge was typically 0.25 gallons per minute with the highest recharge at 5.0 gallons per minute. These rates demonstrate that the shallow aquifer is capable of producing water at quantities greater than 200 gallons per day. However, due to the proximity of the water table to the ground surface, typically three to eight feet, it is not recommended as a potable water source.

8.0 REMEDIATION ACTIVITIES AND EFFECTIVENESS

8.1 Groundwater Remediation

Active remediation began at the site on April 13, 1990. Due to the low recovery rates observed in MW-5 and MW-6, a deeper, larger diameter well (RW-1) was constructed. The produced water was treated with a Cavitation/Oxidation unit and deposited into the sewer system. Hydrocarbon concentrations dropped significantly around the perimeter, however concentrations remained high in the center of the

plume (Plate 4). Two more large diameter extraction wells (RW-2 and RW-3) were constructed to accelerate the cleanup of the plume. Due to the reduced influent hydrocarbon levels and larger influent flow rate, the Cavitation/Oxidation unit was replaced with a 500 pound carbon canister. Due to the predominantly clayey texture occurring at the site, removal of the heavily contaminated water in the center of the plume progressed slower than anticipated. On August 20, 1992, the soil and water in the plume center were excavated and backfilled with clean imported soil and the remaining clean overburden excavated above the water table. Treatment was discontinued and the remaining monitoring wells around the plume area were sampled. During the last three months, groundwater samples were collected from MW-5, MW-7, RW-1 and RW-3. The results of the sampling have shown that BTXE levels in the groundwater have remained below the Maximum Contaminant Levels (MCLs) for drinking water in California (DOHS, October 24, 1990). TPH concentrations in the wells have remained below detection with the exception of RW-3. The concentrations in RW-3, have fluctuated between non detect and 150 ppb, however, no trend to higher concentrations can be found (see Table 2 and Appendix B). To date, the treatment system has processed over 1.5 million gallons of groundwater.

TABLE 2
Hydrocarbon Concentrations • April 27, May 27, July 2, 1993
BTEX, TPH(Gasoline) in ppb

DATE	*MW-5*	*MW-7*	*RW-1*	*RW-3*
4/27/93				
B	ND	ND	ND	0.65
T	ND	ND	ND	ND
E	4.7	ND	ND	1
X	ND	ND	ND	0.95
TPH (gasoline)	ND	ND	ND	150
5/27/93				
B	ND	ND	ND	0.6
T	ND	ND	ND	ND
E	0.5	0.9	ND	ND
X	ND	ND	ND	ND
TPH (gasoline)	ND	ND	ND	ND
7/2/93				
B	ND	ND	ND	ND
T	ND	ND	ND	ND
E	ND	ND	1.6	2.8
X	ND	ND	ND	ND
TPH (gasoline)	ND	ND	ND	83

ND = No Detection

8.2 Impact of Residual Hydrocarbons on Beneficial Uses

As stated in Section 8.1, all regulated contaminants are below the levels set by the California Department of Health Services (DOHS) for drinking water (see Table 2). Since TPH is not regulated by the DOHS, maximum levels must be considered on a site specific basis. The maximum TPH concentration reported was 150 ppb since September 1991. This concentration is well below any single allowable level for Ethyl Benzene and Xylene. As shown in Section 7.2, transport of any remaining hydrocarbons will be extremely slow, thus allowing for contaminant dispersion and breakdown through natural occurring biological action. The shallow groundwater at the site is not suitable for use as a potable water source without pretreatment. Based on this data, the remaining residual hydrocarbons should not adversely impact any future beneficial use of the groundwater.

TABLE 3
California Department of Health Services
California Drinking Water Standards (October 24, 1990)

Constituent	*MCL(ppb)*	*AL(ppb)*
Benzene	1.0	—
Toluene	Unregulated	100
Ethyl Benzene	680	—
Xylene (single isomer or sum of isomers)	1,750	—

MCL = Maximum Contaminant Levels; AL = Action Levels

9.0 CONCLUSIONS

In review of the data and findings presented above, it is clear that gasoline hydrocarbons significantly impacted the shallow unconfined groundwater at the site. No vadose soil contamination was observed. Through groundwater pumping and excavation, the hydrocarbon levels in the groundwater have been reduced to levels below the limits imposed by the DOHS. Groundwater velocities calculated for the site are less than 100 feet per year. Vertical migration will be through dispersion only. The primary aquifer in the area is at a depth greater than 300 feet, therefore, vertical migration of any residual hydrocarbons to the lower aquifer has been ruled out. Due to the shallow unconfined groundwater's proximity to the surface, any use as a potable drinking water source is not recommended. Any remaining hydrocarbons will not exclude other uses, such as irrigation. It has, therefore, been determined that any remaining hydrocarbons should not impact the beneficial use of the groundwater.

10.0 RECOMMENDATIONS

Based on the conclusions presented in this report, RESNA recommends that steps be taken by the Alameda County Department of Environmental Health to recommend site closure and have the site removed from the Regional Water Quality Control Board list of contaminated sites. All wells should be abandoned in a manner approved by the Zone 7 Flood Control District.

11.0 REFERENCES

Alameda County Flood Control and Water Conservation District - Zone 7, June 24, 1993. *"Spring 1993 Groundwater Contour Map."*

California Department of Health Services, State of California. October 24, 1990. *"Summary of California Drinking Water Standards."*

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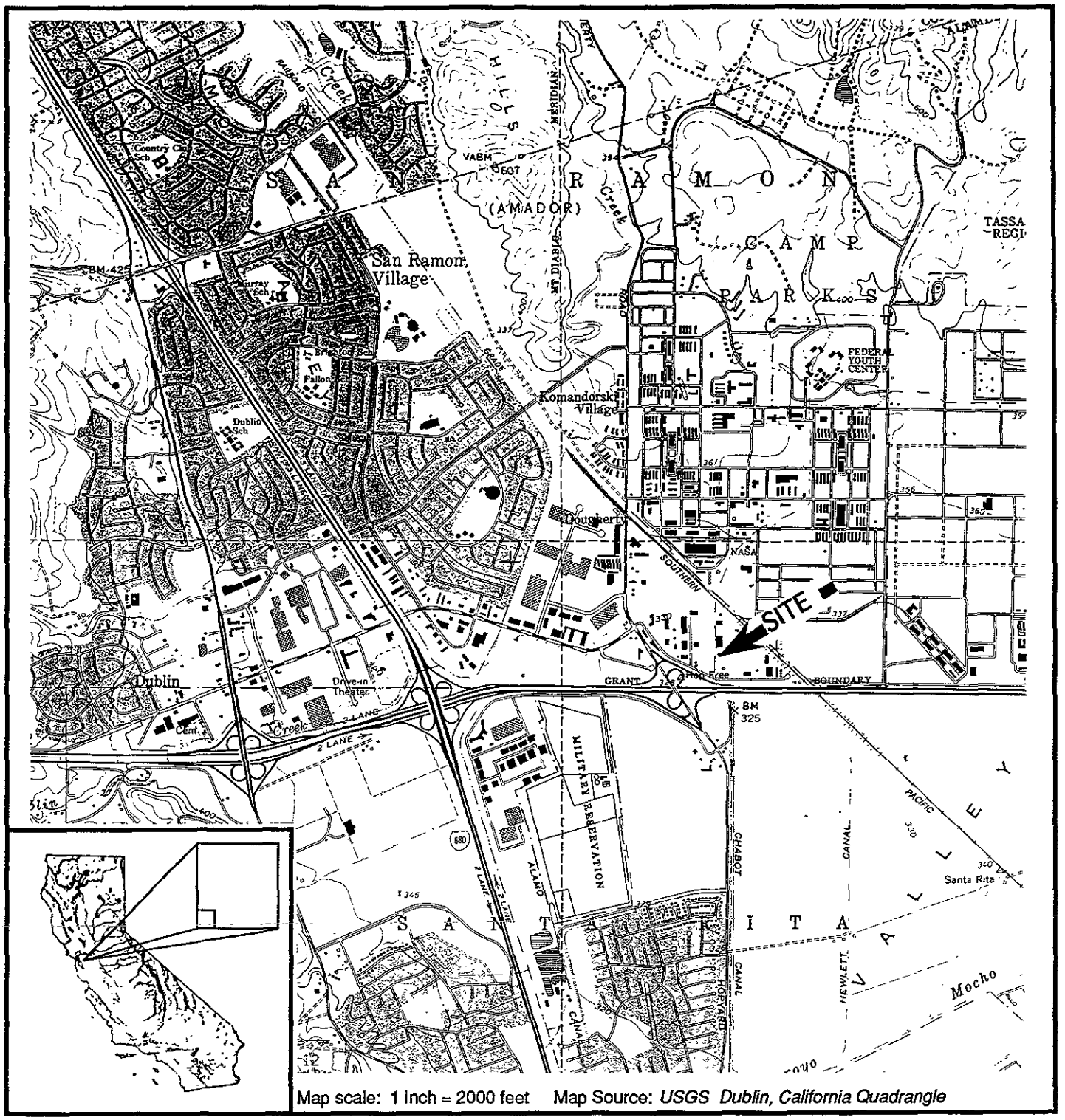
Groundwater Resources, Inc. June 30, 1989. *"Site Characterization Report, Scotsman Corporation, 6055 Scarlett Court, Dublin, California."* Project No. 55018.

Groundwater Resources, Inc. December 20, 1989. *"Site Characterization Report and Remediation Plan, Scotsman Corporation, 6055 Scarlett Court, Dublin, California."* Project No. 55018.

RESNA Industries Inc. September 14, 1992. *"Letter Report Groundwater Remediation and Soil Excavation, Scotsman Corporation, 6055 Scarlett Court, Dublin, California."* Project No. 7172-42.

RESNA Industries Inc. December 1, 1992. *"Letter Report Third Quarter Groundwater Remediation 1992, Scotsman Corporation, 6055 Scarlett Court, Dublin, California."* Project No. 7172-42.

RESNA Industries Inc. March 8, 1993. *"Fourth Quarter Monitoring Report, Scotsman Corporation, 6055 Scarlett Court, Dublin, California."* Project No. 7172-42.



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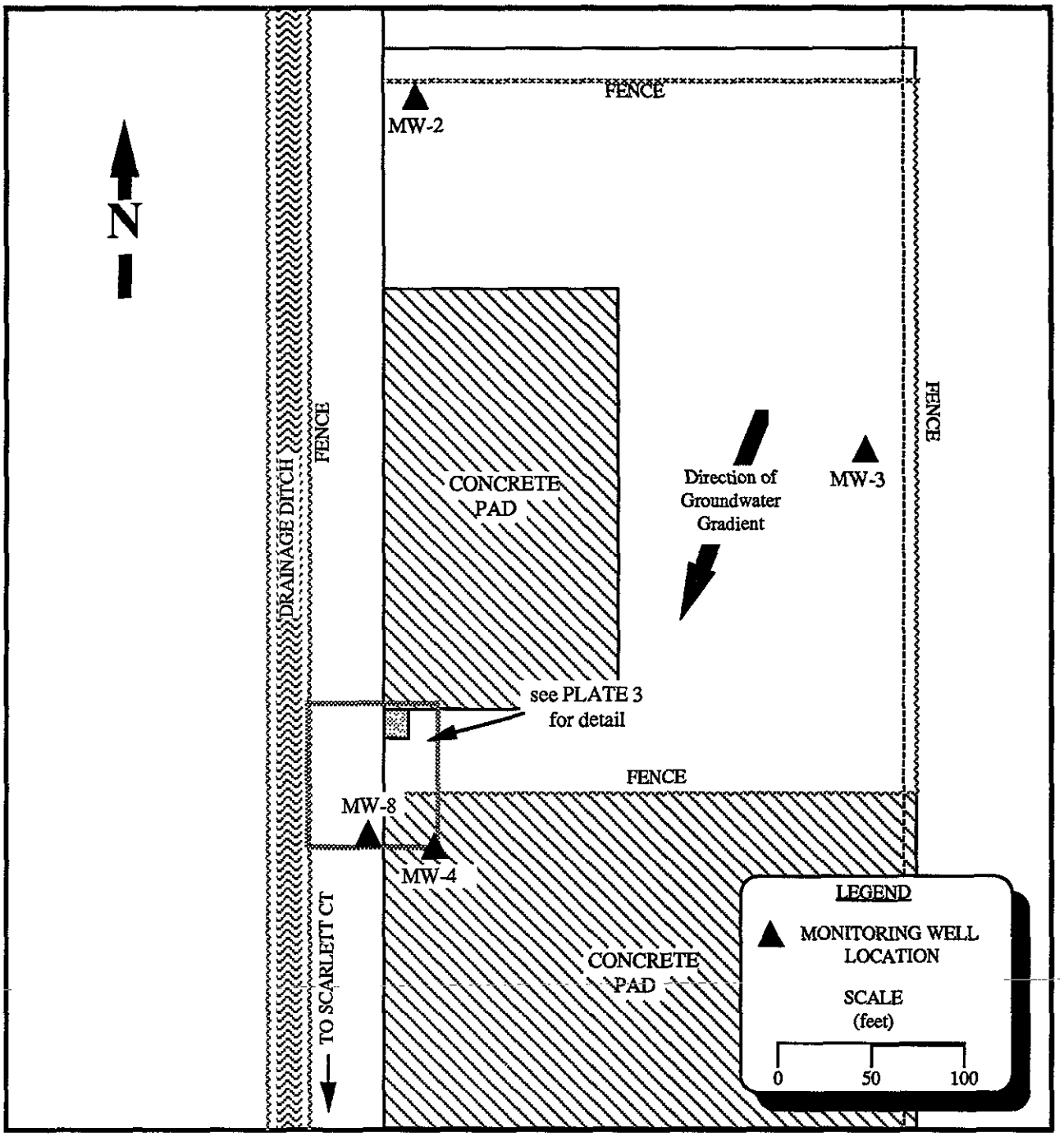
DATE: 7-12-93
PROJECT NUMBER: B7172.42

SCOTSMAN COPRORATION
6055 Scarlett Ct.
Dublin, California

LOCATION MAP

PLATE
1



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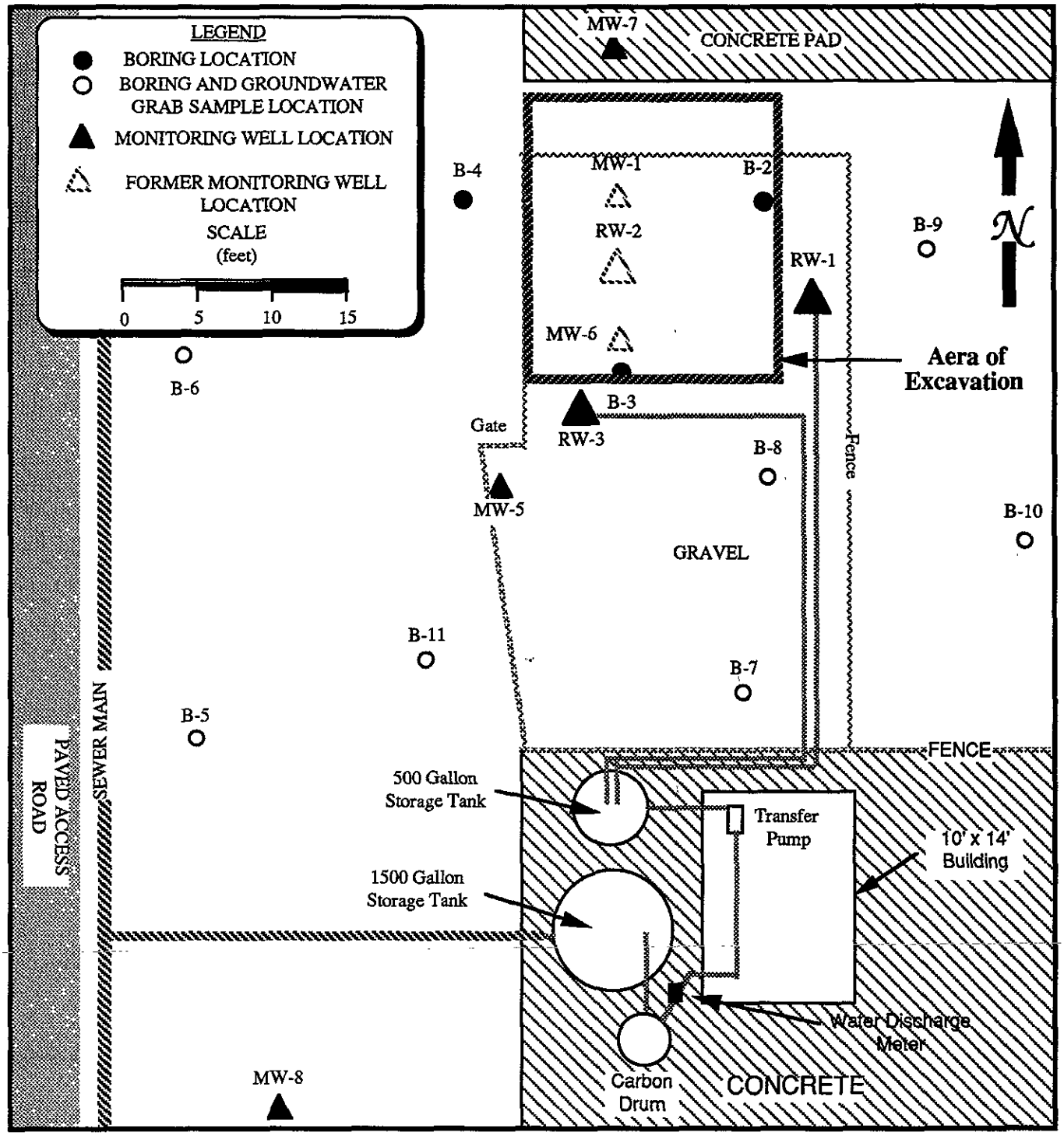
Project Number: B7172.42

8-3-92

SCOTSMAN CORP. DUBLIN, CA.

PLOT PLAN

PLATE 2



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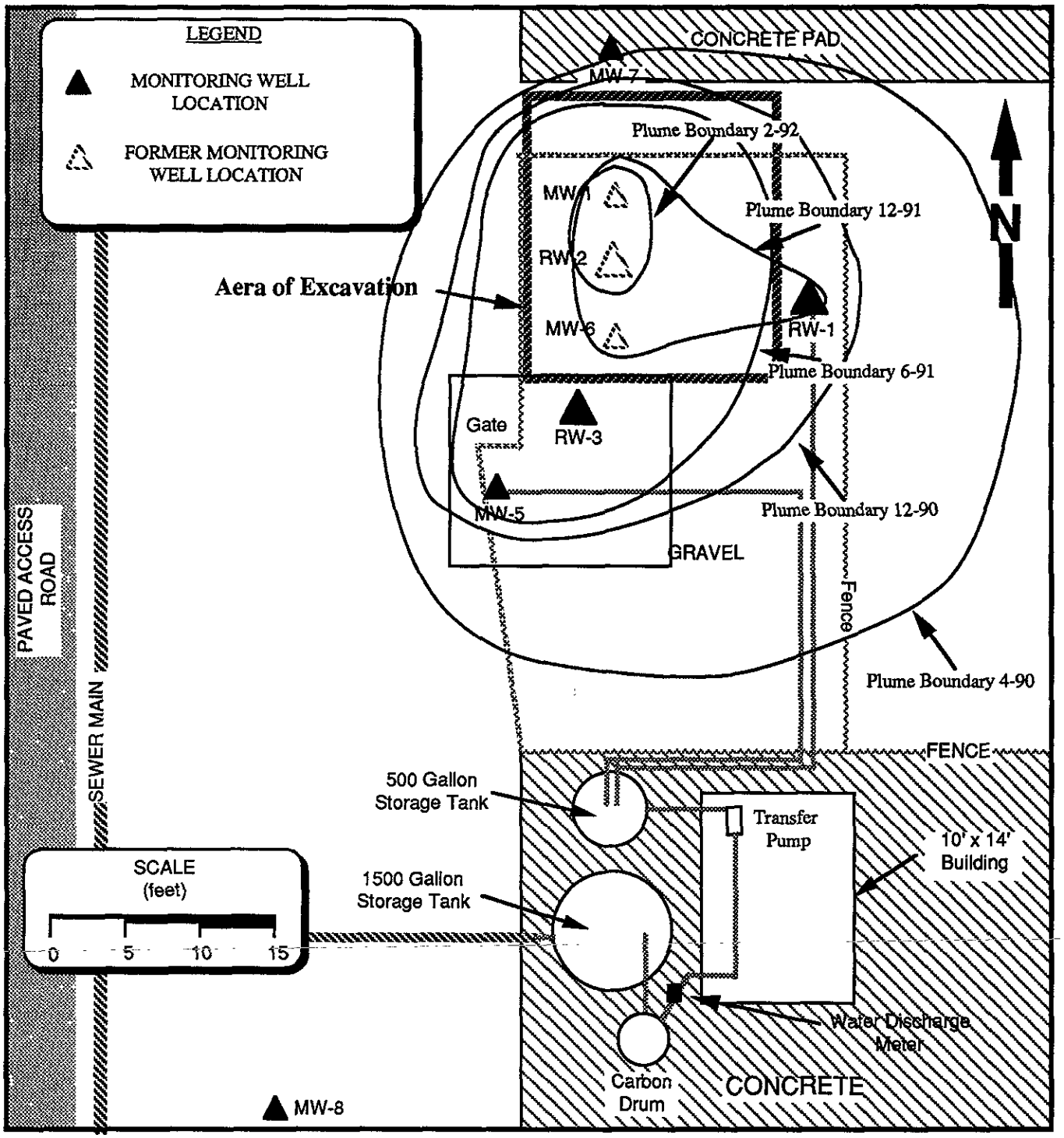
Project Number: B7172.42

6-4-91

SCOTSMAN CORP.
DUBLIN, CA.

DETAIL OF WELLS AND REMEDIATION EQUIPMENT LOCATIONS

PLATE
3



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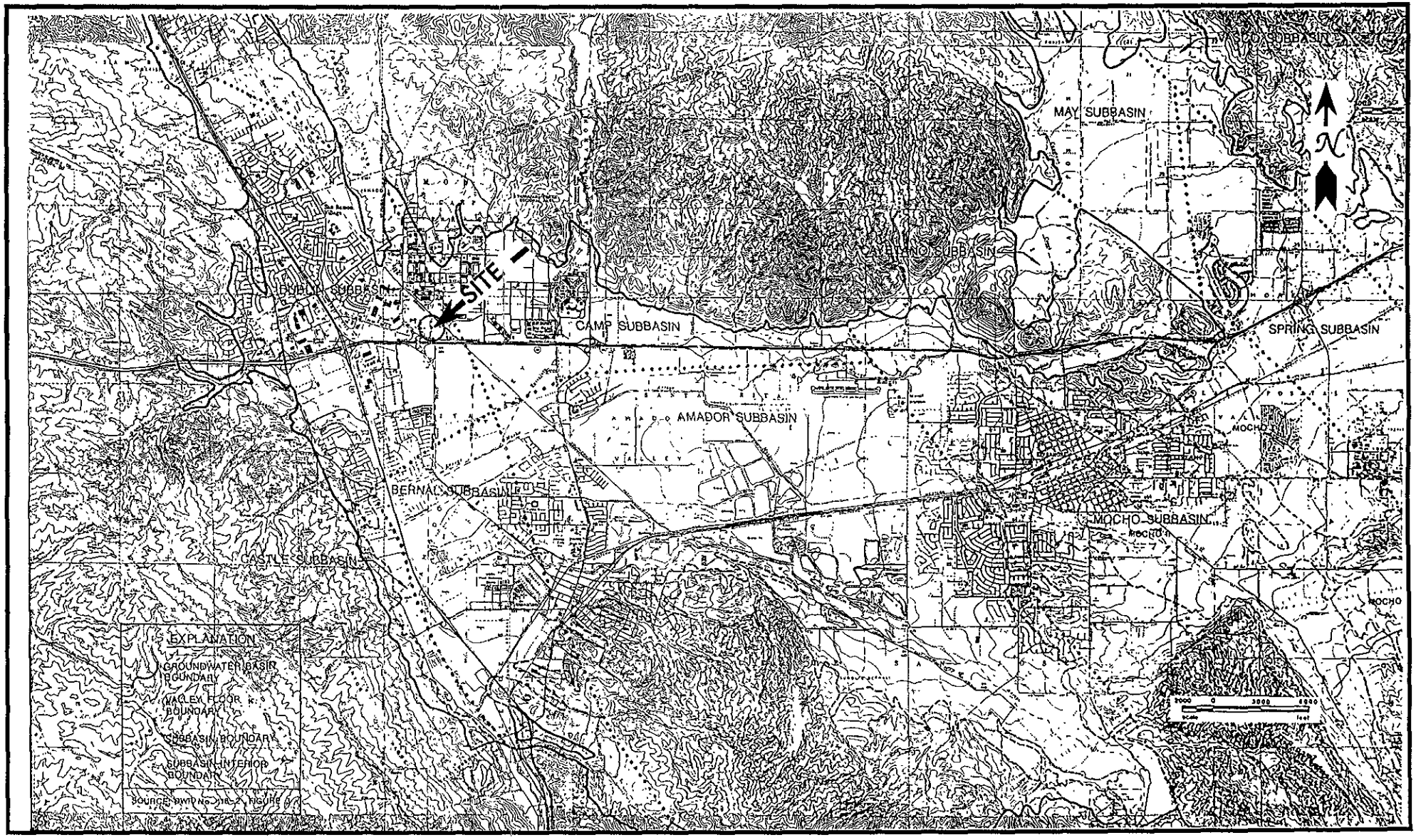
9-14-92

SCOTSMAN CORP. DUBLIN, CA.

TPH ISOPLETH MAP

PLATE

4



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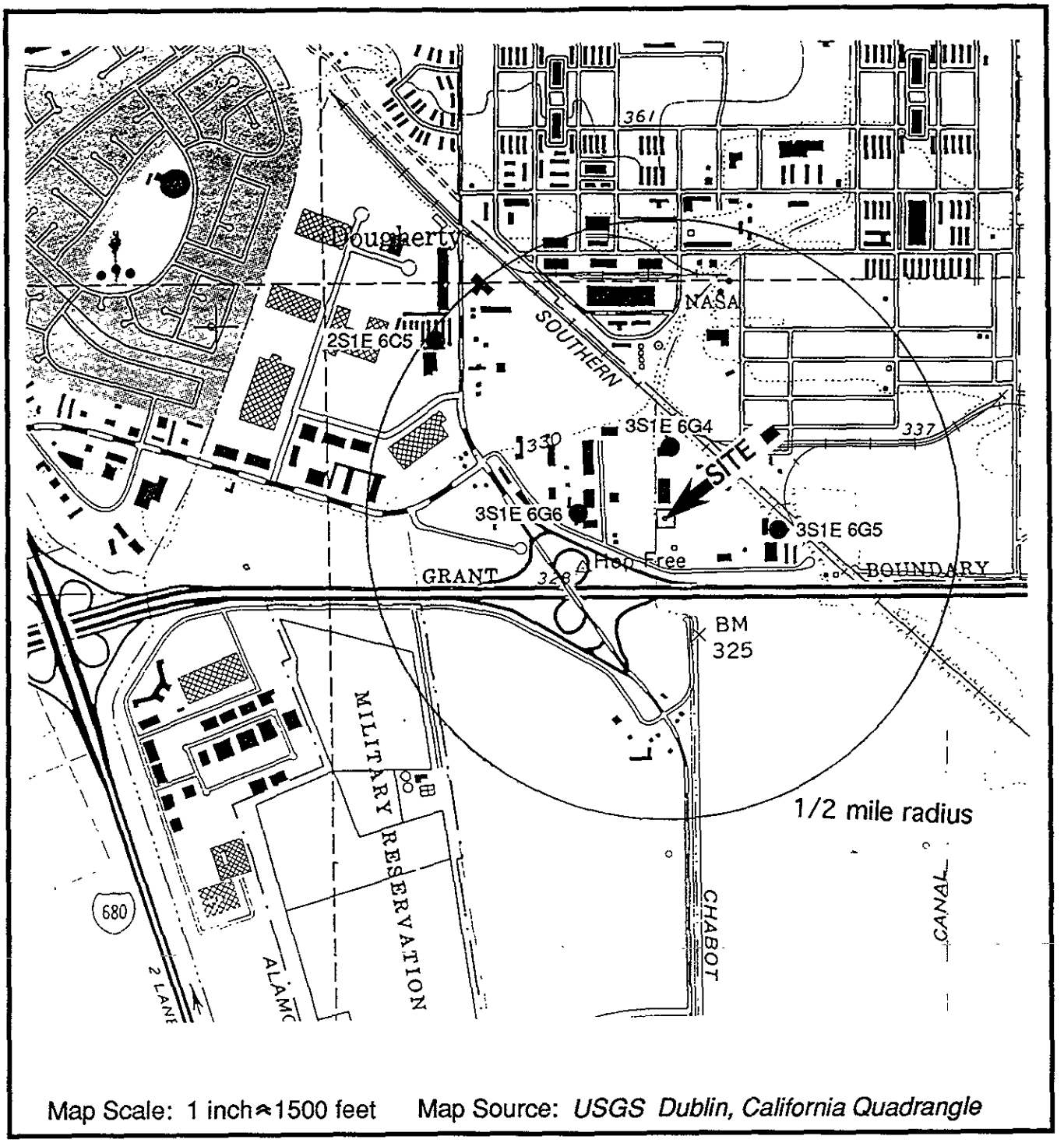
DATE: 7-16-93
PROJECT NUMBER: 7172..42

SCOTSMAN CORPORATION
6055 SCARLETT COURT
DUBLIN, CALIFORNIA

LIVERMORE VALLEY GROUNDWATER BASIN BOUNDARIES

Map Source: *Alameda County Flood Control Zone 7 , February, 1989*

PLATE
5



Map Scale: 1 inch≈1500 feet Map Source: *USGS Dublin, California Quadrangle*

RESNA
Working to Restore Nature

Project Number: B7172.42

7-16-93

SCOTSMAN CORP. DUBLIN, CA.

WATER WELLS WITHIN 1/2 MILE RADIUS OF PROJECT SITE

PLATE

6

Groundwater Elevation Chart for MW-7
(July 1989 to July 1993)

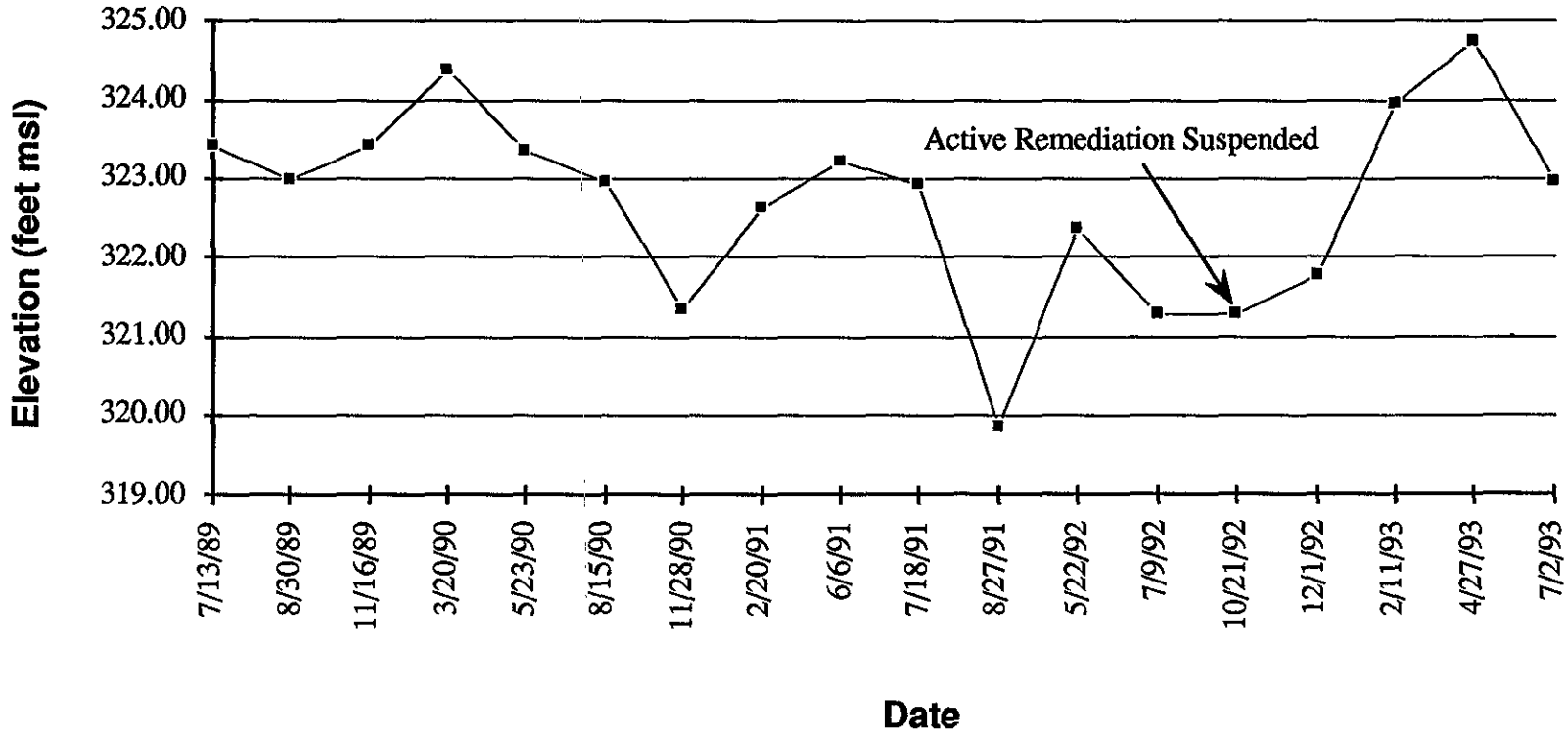


PLATE
7

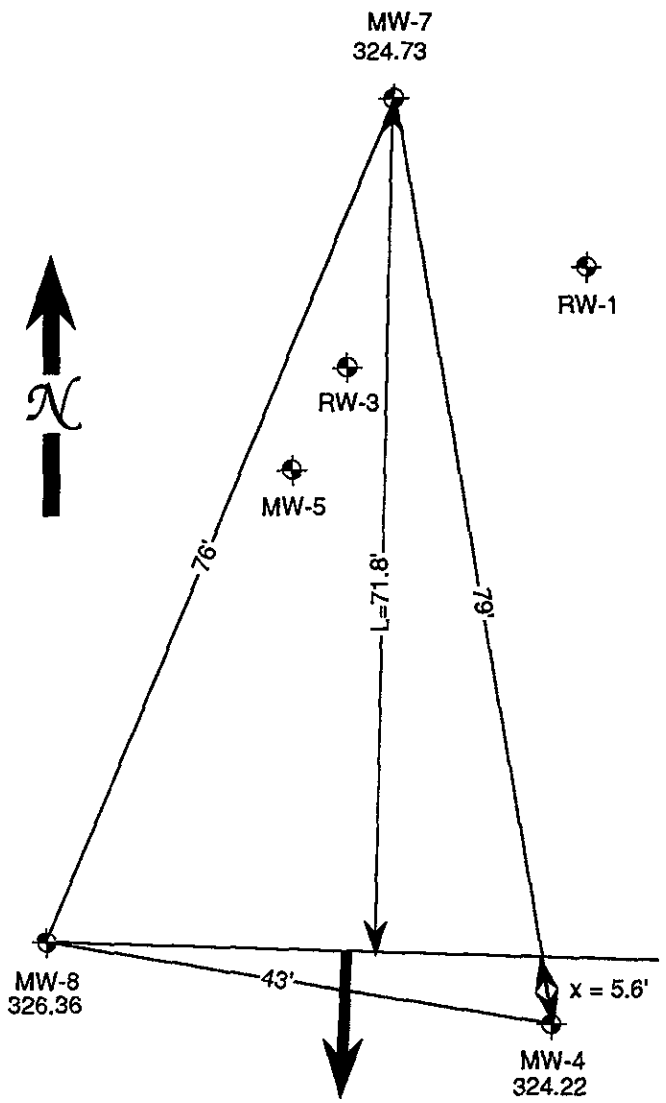
Scotsman Corporation

6055 Scarlett Ct.
Dublin, California

KEY WELL HYDROGRAPH

RESNA
Working to Restore Nature

DATE: 7-14-93
PROJECT NUMBER: B7172.42



LEGEND

Monitoring well location

SCALE
(feet)

0 10 20

Historic Gradient Directions
Using MW's 2,3 and 6

JAN 93
JUL 1992
NOV. 1991
NOV 1990
AUG 1990
MARCH 1990
SEPT. 1989

CALCULATIONS
(MW-7, MW-8, MW-4)

GRADIENT

$$\frac{324.73' - 324.36'}{71.8'}$$

$$\frac{h_i}{L} = \frac{0..37'}{71.8'} = \frac{0.52'}{100'}$$

DIRECTION

$$\frac{324.36' - 324.22'}{324.73' - 324.22'} = \frac{X}{79'}$$

X = 5.6'

RESNA
Working to Restore Nature

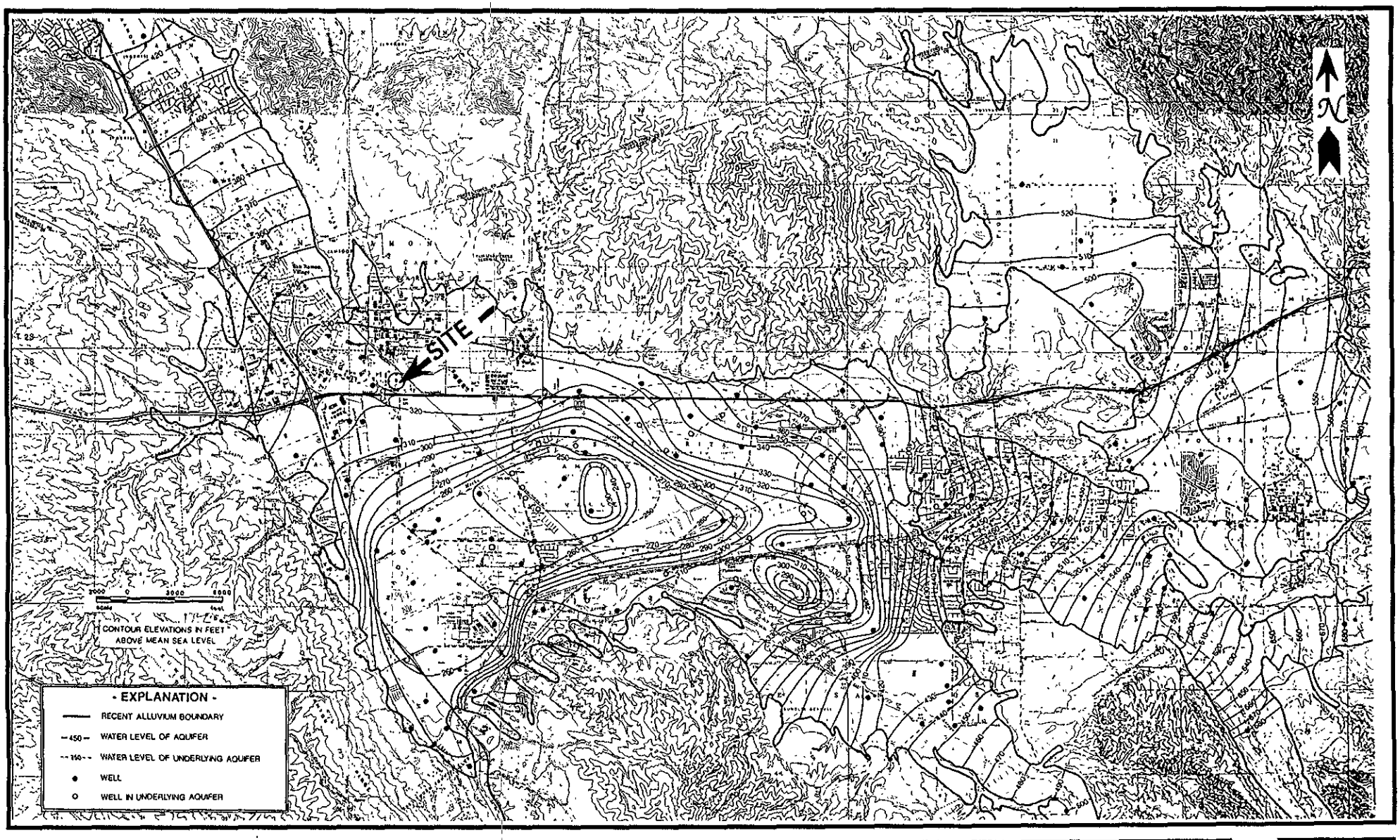
Project Number: B7172.42

7-16-93

SCOTSMAN CORP.
DUBLIN, CA.

SHALLOW GROUNDWATER
GRADIENT MAP
(April 27, 1993)

PLATE
8



RESNA

Working to Restore Nature

DATE: 7-16-93
PROJECT NUMBER: 7172..42

SCOTSMAN CORPORATION
6055 SCARLETT COURT
DUBLIN, CALIFORNIA

REGIONAL GROUNDWATER CONTOUR MAP

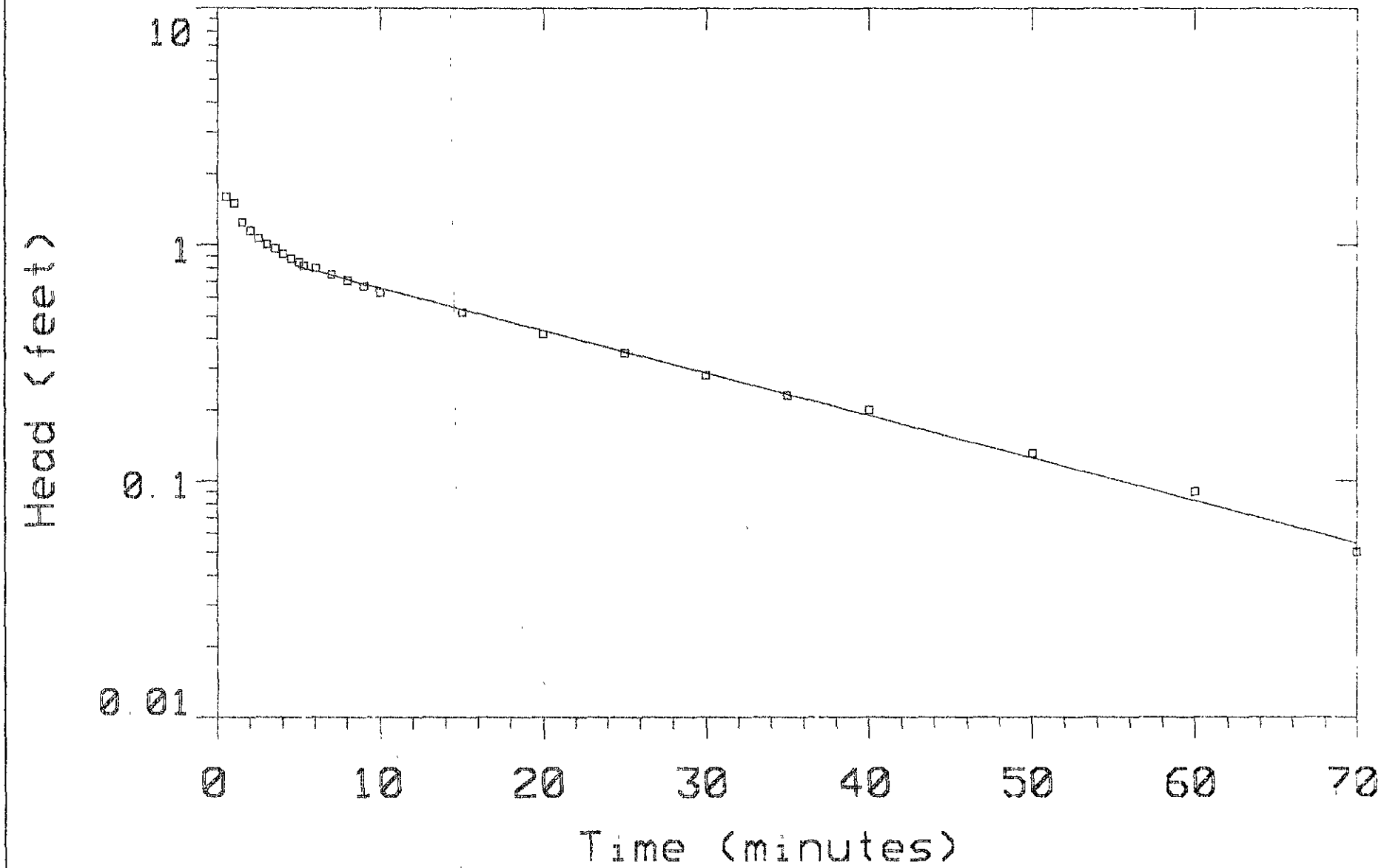
Map Source: *Alameda County Flood Control Zone 7 , June, 1993*

PLATE

9

APPENDIX A

Groundwater Discharge Velocity Calculations



MODEL TYPE: BOUWER and RICE

CONDUCTIVITY. 0006428 ft/min

TRANSMISSIVITY 05142 sq ft/min

INITIAL HEAD 2 650 ft

Data Set MW-6 | Date: 5-26-89

for Scotsman Corporation

by GROUND WATER RESOURCES

WELL DATA: Units ft

AQUIFER. Unconfined

THICKNESS: 80 00

SCREEN top 5 000 base 15.00

DIAMETER casing 6600 intake 6600

DEPTH Water Table. 5 250 TD: 15 00

Well Slug Test Data

Well MW-6
Dublin, CA
Alameda

DATA SET: SCOTMW-6

CLIENT:	Scotsman Corporation	DATE:	5-26-89
LOCATION:	Dublin, CA	WELL NO.:	MW-6
COUNTY:	Alameda	WELL DEPTH:	15.00 ft
PROJECT:	Well Slug Test Data	WATER TABLE:	5.250 ft
AQUIFER:	Unconfined	THICKNESS:	80.00 ft
INTAKE RADIUS:	0.330 ft	CASING RADIUS:	0.330 ft
SCREEN TOP:	5.000 ft	SCREEN BASE:	15.00 ft
INITIAL HEAD:	2.650 ft	TRANS. RATIO:	1.0000

MODEL PARAMETERS:

TRANSMISSIVITY: .0514 square ft/min

CONDUCTIVITY: .000643 ft/min

MODEL TYPE: UNCONFINED PARTIALLY PENETRATED AQUIFER (Bouwer & Rice)

No.	TIME (mins)	Head, H (ft) DATA
1	0.500	1.60
2	1.00	1.50
3	1.50	1.25
4	2.00	1.15
5	2.50	1.07
6	3.00	1.01
7	3.50	0.970
8	4.00	0.920
9	4.50	0.880
10	5.00	0.850
11	5.30	0.820
12	6.00	0.800
13	7.00	0.750
14	8.00	0.710
15	9.00	0.670
16	10.00	0.630
17	15.00	0.520
18	20.00	0.420
19	25.00	0.350
20	30.00	0.280
21	35.00	0.230
22	40.00	0.200
23	50.00	0.130

No.	TIME (mins)	Head, H (ft) DATA
24	60.00	0.0900
25	70.00	0.0500

CURRENT RESOLUTION MATRIIX NOT AVAILABLE

Calculations

Where:

V_d = Discharge Velocity
K = Conductivity
i = Gradient

Therefore:

$$V_d = Ki$$

$$V_d = (0.000643 \text{ ft/min})\ (0.52)$$

$$V_d = 3.34 \times 10^{-4} \text{ ft/min}$$

$$V_d = (3.34 \times 10^{-4} \text{ ft/min})\ (60 \text{ min/hr})\ (24 \text{ hr/day})\ (365 \text{ day/yr}) =$$

$$V_d = 176 \text{ ft/yr}$$

APPENDIX B

Laboratory Analyses Reports and Purge Data

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RECEIVED
JUL 2 2 1993

RESNA	Client Project ID:	B7172.42, Scotsman Corp	Sampled:	Jul 2, 1993
1500 South Union Avenue	Sample Matrix:	Water	Received:	Jul 6, 1993
Bakersfield, CA 93307	Analysis Method:	EPA 5030/8015/8020	Reported:	Jul 15, 1993
Attention: Tim Reid	First Sample #:	3G36101		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 3G36101 W-7.5-MW7	Sample I.D. 3G36102 W-RW-1	Sample I.D. 3G36103 W-RW-3	Sample I.D. 3G36104 W-12-MW5	Sample I.D. 3G36105 W-FB
Purgeable Hydrocarbons	50	N.D.	N.D.	83	N.D.	N.D.
Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	0.69
Ethyl Benzene	0.50	N.D.	1.6	2.8	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	Weathered Gas	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	7/13/93	7/13/93	7/13/93	7/13/93	7/13/93
Instrument Identification:	GCHP-1	GCHP-1	GCHP-1	GCHP-1	GCHP-1
Surrogate Recovery, %: (QC Limits = 70-130%)	107	105	101	110	115

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

VMTague

Vickie Tague
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RESNA	Client Project ID:	B7172.42, Scotsman Corp
1500 South Union Avenue	Matrix:	Water
Bakersfield, CA 93307		
Attention: Tim Reid	QC Sample Group: 3G36101-05	Reported: Jul 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	P. Madden	P. Madden	P. Madden	P. Madden
Conc. Spiked:	10	10	10	15
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	BLK071393	BLK071393	BLK071393	BLK071393
Date Prepared:	6/23/93	6/23/93	6/23/93	6/23/93
Date Analyzed:	7/13/93	7/13/93	7/13/93	7/13/93
Instrument I.D.#:	GCHP-1	GCHP-1	GCHP-1	GCHP-1
LCS % Recovery:	79	95	99	91
Control Limits:	76-111	82-114	83-118	87-117
MS/MSD Batch #:	MS071393	MS071393	MS071393	MS071393
Date Prepared:	7/13/93	7/13/93	7/13/93	7/13/93
Date Analyzed:	7/13/93	7/13/93	7/13/93	7/13/93
Instrument I.D.#:	GCHP-1	GCHP-1	GCHP-1	GCHP-1
Matrix Spike % Recovery:	102	107	109	100
Matrix Spike Duplicate % Recovery:	105	112	113	105
Relative % Difference:	2.9	4.6	3.6	4.9

SEQUOIA ANALYTICAL

VM Tague

Vickie Tague
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

RESNA

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO.: B7172.42

PROJECT NAME/SITE: SCOTSMAN CORP ~~#~~ DUBLIN CA

SAMPLERS (SIGN): Erin D. McLucas (PRINT) ERIN McLUCAS

P.O. #: A9478

ANALYSIS REQUESTED: BTEX (602/8020); TPHg (8015); TPHd (8015); TOG 418.1/5520; 601/8010; 624/8240; 625/8270; 9307361

SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES. USED	ICED	NO. CONTAINERS	SAMPLE TYPE	REMARKS
W-7.5-MW-7	7/2/93	1:45			HCL	✓	2		-01A,B
W-RW-1	7/2/93	12:30			HCL	✓	2		-02A,B
W-RW-3	7/2/93	12:45			HCL	✓	2		-03A,B
W-~~MW~~-MW-5	7/2/93	1:40			HCL	✓	2		-04A,B
W-FB	7/2/93				HCL	✓	1		-05A

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	LABORATORY:	PLEASE SEND RESULTS TO:
Erin D. McLucas	7/6/93	10:00	L. Henstrom		Tim Reid 1500 South Union Ave Bakersfield CA 93307
L. Henstrom	7-6-93	1150	RECEIVED BY:		
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	REQUESTED TURNAROUND TIME:	
RELINQUISHED BY:	DATE	TIME	RECEIVED BY LABORATORY:	RECEIPT CONDITION:	PROJECT MANAGER:
	7/6/93	1150	Steve Lee		

BC LABORATORIES

Purgeable Aromatics

RESNA
1500 S. UNION AVENUE
BAKERSFIELD, CA 93307
Attn.: TIM REED 805-835-7700

Date of Report: 06/09/93
Lab #: 93-05120-1

Sample Description: #B7172.42 SCOTTSMAN: RW-1 (WATER) 05-27-93 @ 1245 SAMPLED BY TIM REED

TEST METHOD: TPH by D.O.H.S. / L.U.F.T. Manual Method - Modified EPA 8015
Individual constituents by EPA Method 5030/8020.

Sample Matrix: Water

Date Sample Collected:	Date Sample Received @ Lab:	Date Analysis Completed:
05/27/93	05/28/93	06/04/93

Constituents	Analysis Results	Reporting Units	Minimum Reporting Level
Benzene	None Detected	µg/L	0.5
Toluene	None Detected	µg/L	0.5
Ethyl Benzene	None Detected	µg/L	0.5
Total Xylenes	None Detected	µg/L	1.
Total Petroleum Hydrocarbons (gas)	None Detected	µg/L	50.

California D.O.H.S. Cert. #1186

Stuart S. Buttram
Department Supervisor

BC LABORATORIES

Purgeable Aromatics

RESNA
1500 S. UNION AVENUE
BAKERSFIELD, CA 93307
Attn.: TIM REED 805-835-7700

Date of Report: 06/09/93
Lab #: 93-05120-2

Sample Description: #B7172.42 SCOTTSMAN: RW-3 (WATER) 05-27-93 @ 1250 SAMPLED BY TIM REED

TEST METHOD: TPH by D.O.H.S. / L.U.F.T. Manual Method - Modified EPA 8015
Individual constituents by EPA Method 5030/8020.

Sample Matrix: Water

Date Sample Collected:	Date Sample Received @ Lab:	Date Analysis Completed:
05/27/93	05/28/93	06/04/93

Constituents	Analysis Results	Reporting Units	Minimum Reporting Level
Benzene	0.6	µg/L	0.5
Toluene	None Detected	µg/L	0.5
Ethyl Benzene	None Detected	µg/L	0.5
Total Xylenes	None Detected	µg/L	1.
Total Petroleum Hydrocarbons (gas)	None Detected	µg/L	50.

California D.O.H.S. Cert. #1186

Stuart S. Sattiam
Department Supervisor

BC LABORATORIES

Purgeable Aromatics

RESNA
1500 S. UNION AVENUE
BAKERSFIELD, CA 93307
Attn.: TIM REED 805-835-7700

Date of Report: 06/09/93
Lab #: 93-05120-3

Sample Description: #B7172.42 SCOTTSMAN: RW-7 (WATER) 05-27-93 @ 1230 SAMPLED BY TIM REED

TEST METHOD: TPH by D.O.H.S. / L.U.F.T. Manual Method - Modified EPA 8015
Individual constituents by EPA Method 5030/8020.

Sample Matrix: Water

Date Sample Collected:	Date Sample Received @ Lab:	Date Analysis Completed:
05/27/93	05/28/93	06/04/93

Constituents	Analysis Results	Reporting Units	Minimum Reporting Level
Benzene	None Detected	µg/L	0.5
Toluene	None Detected	µg/L	0.5
Ethyl Benzene	0.9	µg/L	0.5
Total Xylenes	None Detected	µg/L	1.
Total Petroleum Hydrocarbons (gas)	None Detected	µg/L	50.

California D.O.H.S. Cert. #1186

Stuart S. Buttram
Department Supervisor

BC LABORATORIES

Purgeable Aromatics

RESNA
1500 S. UNION AVENUE
BAKERSFIELD, CA 93307
Attn.: TIM REED 805-835-7700

Date of Report: 06/09/93
Lab #: 93-05120-4

Sample Description: #B7172.42 SCOTTSMAN: RW-5 (WATER) 05-27-93 @ 1240 SAMPLED BY TIM REED

TEST METHOD: TPH by D.O.H.S. / L.U.F.T. Manual Method - Modified EPA 8015
Individual constituents by EPA Method 5030/8020.

Sample Matrix: Water

Date Sample Collected:	Date Sample Received @ Lab:	Date Analysis Completed:
05/27/93	05/28/93	06/04/93

Constituents	Analysis Results	Reporting Units	Minimum Reporting Level
Benzene	None Detected	µg/L	0.5
Toluene	None Detected	µg/L	0.5
Ethyl Benzene	0.5	µg/L	0.5
Total Xylenes	None Detected	µg/L	1.
Total Petroleum Hydrocarbons (gas)	None Detected	µg/L	50.

California D.O.H.S. Cert. #1186

Stuart S. Cattlam
Department Supervisor

BC LABORATORIES

Purgeable Aromatics

RESNA
1500 S. UNION AVENUE
BAKERSFIELD, CA 93307
Attn.: TIM REED 805-835-7700

Date of Report: 06/09/93
Lab #: 93-05120-TB

Sample Description: #B7172.42 SCOTTSMAN: TRIP BLANK

TEST METHOD: TPH by D.O.H.S. / L.U.F.T. Manual Method - Modified EPA 8015
Individual constituents by EPA Method 5030/8020.

Sample Matrix: Water

Date Sample Collected:	Date Sample Received @ Lab:	Date Analysis Completed:
	05/28/93	06/04/93

Constituents	Analysis Results	Reporting Units	Minimum Reporting Level
Benzene	None Detected	µg/L	0.5
Toluene	None Detected	µg/L	0.5
Ethyl Benzene	None Detected	µg/L	0.5
Total Xylenes	None Detected	µg/L	1.
Total Petroleum Hydrocarbons (gas)	None Detected	µg/L	50.

California D.O.H.S. Cert. #1186

Stuart S. Buttram
Department Supervisor

RESNA

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

PROJECT NO.	PROJECT NAME/SITE	P.O. #
B7172.42	SCOTSMAN	A5222

SAMPLERS (SIGN) Tim Reed (PRINT) TIM REED

	SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES USED	ICED	NO. CONTAINERS	SAMPLE TYPE	BTEX (602/8020)	TPHg (8015)	TPHd (8015)	TOG 418.1/5520	601/8010	624/8240	625/8270	REMARKS
	93-0512C																
-1	RW-1	5-27-93	12:45		X	HCl	X	2	W	X	X						
-2	RW-3	"	12:50		"	"	"	"	"	"	"						
-3	MW-7	"	12:30		"	"	"	"	"	"	"						
-4	MW-5	"	12:40		"	"	"	"	"	"	"						
-TB	TRAVEL BLANK							1	"	"	"						

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	LABORATORY:	PLEASE SEND RESULTS TO:
Tim Reed	5-28-93	10:50		BC LABS	RESNA
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:		
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	REQUESTED TURNAROUND TIME: NORMAL	
RELINQUISHED BY:	DATE 5-28-93	TIME 10:50	RECEIVED BY LABORATORY: Jean Mahaffy	RECEIPT CONDITION: Cold & seals intact	PROJECT MANAGER: TIM REED

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RESNA	Client Project ID:	B7172.42, Scotsman Corp.	Sampled:	Apr 27, 1993
1500 South Union Avenue	Sample Matrix:	Water	Received:	May 5, 1993
Bakersfield, CA 93307	Analysis Method:	EPA 5030/8015/8020	Reported:	May 12, 1993
Attention: Tim Reed	First Sample #:	3E25201		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 3E25201 RW-3	Sample I.D. 3E25202 RW-1	Sample I.D. 3E25203 MW-7	Sample I.D. 3E25204 MW-5	Sample I.D. 3E25205 TB
Purgeable Hydrocarbons	50	150	N.D.	N.D.	N.D.	N.D.
Benzene	0.50	0.65	N.D.	N.D.	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	12	N.D.	N.D.	4.7	N.D.
Total Xylenes	0.50	0.95	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		Gas	--	--	Discrete Peaks	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	5/10/93	5/10/93	5/10/93	5/10/93	5/11/93
Instrument Identification:	GCHP-3	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Surrogate Recovery, %: (QC Limits = 70-130%)	103	99	98	102	98

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RESNA	Client Project ID:	B7172.42, Scotsman Corp.
1500 South Union Avenue	Matrix:	Water
Bakersfield, CA 93307		
Attention: Tim Reed	QC Sample Group	3E25201-5

Reported: May 12, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Conc. Spiked:	10	10	10	30
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	BLK051093	BLK051093	BLK051093	BLK051093
Date Prepared:	N/A	N/A	N/A	N/A
Date Analyzed:	5/10/93	5/10/93	5/10/93	5/10/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
LCS % Recovery:	107	107	107	107
Control Limits:	80-120	80-120	80-120	80-120
MS/MSD Batch #:	3E15401	3E15401	3E15401	3E15401
Date Prepared:	N/A	N/A	N/A	N/A
Date Analyzed:	5/10/93	5/10/93	5/10/93	5/10/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Matrix Spike % Recovery:	110	110	110	103
Matrix Spike Duplicate % Recovery:	110	110	110	107
Relative % Difference:	0.0	0.0	0.0	3.2

SEQUOIA ANALYTICAL

VM Tague

Vickie Tague
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

RESNA
1500 South Union Avenue
Bakersfield, CA 93307
Attention: Tim Reed

Client Project ID: B7172.42, Scotsman Corp.
Matrix: Water
QC Sample Group 3E25201-5

Reported: May 12, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Conc. Spiked:	10	10	10	30
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	BLK051193	BLK051193	BLK051193	BLK051193
Date Prepared:	N/A	N/A	N/A	N/A
Date Analyzed:	5/11/93	5/11/93	5/11/93	5/11/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
LCS % Recovery:	110	110	100	107
Control Limits:	80-120	80-120	80-120	80-120
MS/MSD Batch #:	3E36602	3E36602	3E36602	3E36602
Date Prepared:	N/A	N/A	N/A	N/A
Date Analyzed:	5/11/93	5/11/93	5/11/93	5/11/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Matrix Spike % Recovery:	110	110	100	107
Matrix Spike Duplicate % Recovery:	110	110	110	107
Relative % Difference:	0.0	0.0	9.5	0.0

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

REBNA

PROJECT NO.	PROJECT NAME/SITE
B7172.42	SCOTSMAN CORP.

SAMPLERS (SIGN) / (PRINT) Dean Osaki / Dean Osaki

P.O. #: A5087

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	DATE	TIME	COMP	GRAB	PRES. USED	ICED	NO. CONTAINERS	SAMPLE TYPE	BTEX (602/8020)	TPHg (8015)	TPHd (8015)	TOG 418.1/5520	601/8010	624/8240	625/8270					930525 2 REMARKS
BW-3A, 3B	4/27/93	12:55			HCl	✓	2	W	✓	✓										W1304327
BW-1A, 3B	"	13:35			HCl	✓	2	W	✓	✓				VIALS		SAY	1A, 1B			328
MW-7A, 7B	"	14:05			HCl	✓	2	W	✓	✓										329
MW-5A, 5B	"	14:35			HCl	✓	2	W	✓	✓										330
TB-A, B	"	⊖			HCl	✓	2	W	✓	✓										331

Run TB only if positive on other samples VT per TR 4/29/93

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
Dean Osaki	4/29/93	12:30	
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
	4/29/93	1440	
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
RELINQUISHED BY:	DATE 4/29/93	TIME 1440	RECEIVED BY LABORATORY:

LABORATORY:
REBNA
42501 Albrae St.
Fremont, CA
94538

REQUESTED TURNAROUND TIME:
NORMAL TURNAROUND

RECEIPT CONDITION:
good / cool

PLEASE SEND RESULTS TO:
REBNA
1500 South Union Ave
Bakersfield, CA
93307
ATTN: TIM REED

PROJECT MANAGER:
Tim Reed

WATER SAMPLING DATA

RESNA Working to Restore Nature

Project No.	Project Name	Well Name	Date	Time	Initials
B7192.42	SCOTSMAN CORP	BW-3	4.27.93		DKO

WELL DATA

Well Depth (ft.) 29.90	Sounded Depth (ft.)	Well Type ☐ Monitor Well ☐ Sampling Port ☒ Other (describe) RECOVERY WELL
DTW (ft.) 6.08	Date/Time	
Well Diam. (in.) 6"	LHC Present? ☐ Yes ☒ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1	11:50	7.70	72.60	.43 X1 umhos
2	12:00	7.68	72.65	.40
3	12:45	7.65	73.90	.41

EVACUATION

Initial Height of Water in Casing (ft): 23.82

Volume (gal): 35

Volume to be Evacuated: ☒ x3 ☐ x4 — 105

Formulas and Conversions

r = well radius in ft.
h = ft. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal / ft³

- V_2 " casing = 0.163 gal / ft.
- V_3 " casing = 0.367 gal / ft.
- V_4 " casing = 0.653 gal / ft.
- $V_{4.5}$ " casing = 0.826 gal / ft.
- V_6 " casing = 1.470 gal / ft.
- V_8 " casing = 2.610 gal / ft.
- V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System: ☐ Bladder Pump ☐ Bailer

PVC Bailer: ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal) | Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	12:05	12:50		
Start Time	11:46	12:40		
Minutes	19	10		
Amt Evac'd	95 gal	50 gal	gal	gal

Total Evac'd: gal

Total Minutes: min

Evac Rate: 5.0 gpm

Pumped Dry? ☐ Yes ☒ No — After (gal)

Depth to Water During Pumping (ft) — Time

Depth to Water for 80% Recovery — Recovery Rate (gpm)

Sampled After: ☐ 80% Rec. ☐ 2 hours — % Recovery at Time of Sampling

Recovery

	Time	DTW
1	12:05	23.40
2	12:15	11.20
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 12:55 — Date: 4/27/93

Depth to Water (ft): 21.35 — Refrigerated? ☒ Yes ☐ No

Sample Color: cloudy — Odor: none

Sediment / Foreign Matter: small amounts of white/grayish silt

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
BW-3A	40	V	HCl	TPH-G/BETX	RESNA
3B	"	"	"	"	"

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

WATER SAMPLING DATA

RESNA Working to Restore Nature

Project No.	Project Name	Well Name	Date	Time	Initials
87172.42	SCOTSMAN CORP	BW-1	4.27.93		DKO

WELL DATA

Well Depth (ft)	Sounded Depth (ft)	Well Type
	31.95	☐ Monitor Well
DTW (ft)	Date/Time	☐ Sampling Port
5.81		☒ Other (describe) Recovery Well
Well Diam. (in.)	LHC Present?	LHC Thickness
6	☐ Yes ☒ No	

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1	13:15	8.40	73.85	.43 x1 umhos
2	13:20	8.38	73.95	.42
3	13:23	8.37	74.0	.42

EVACUATION

Initial Height of Water in Casing (ft)	Formulas and Conversions	Sampling Equipment
25.04	r = well radius in ft. h = ht. of water column in ft. vol. of column = $\pi r^2 h$ 7.48 gal / ft³	Dedicated System ☐ Bladder Pump ☐ Bailer PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in. Pump ✓
Volume (gal)	V_2 * casing = 0.163 gal / ft. V_3 * casing = 0.367 gal / ft. V_4 * casing = 0.653 gal / ft. $V_{4.5}$ * casing = 0.826 gal / ft. V_5 * casing = 1.470 gal / ft. V_6 * casing = 2.610 gal / ft. V_{10} * casing = 4.080 gal / ft.	Sampling Port No.
37.09		Volume (gal) / Rate (gpm)
Volume to be Evacuated ☒ x3 ☐ x4		
113		

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	13:35			
Start Time	13:10			
Minutes	25			
Amt Evac'd	125 gal	gal	gal	gal
Total Evac'd	gal			
Total Minutes	min			
Evac Rate	5.0 gpm			

Pumped Dry?	After (gal)
☐ Yes ☒ No	
Depth to Water During Pumping (ft)	Time
Depth to Water for 80% Recovery	Recovery Rate (gpm)
Sampled After: ☐ 80% Rec. ☐ 2 hours	% Recovery at Time of Sampling

Recovery

	Time	DTW
1	13:20	6.40
2		
3		
4		
5		

SAMPLING

Point of Collection	Time Samples Taken	Date
☐ PE Hose ☐ End of Bailer ☒ Other:	13:35	4.27.93
	Depth to Water (ft) 6.38	Refrigerated? ☒ Yes ☐ No
Sample Color: clear	Odor: none	
Sediment / Foreign Matter: none		
Sampling Sequence		

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
BW-1A	40	V	HCl	TPHG/BETX	RESNA
1B	"	"	"	"	"

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

WATER SAMPLING DATA

RESNA Working to Restore Nature

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN CORP	MW-7	4/27/93	13:45	DKO

WELL DATA

Well Depth (ft.): 13.5	Sounded Depth (ft.):	Well Type: ☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.): 4.05	Date/Time:	
Well Diam. (in.): 4	LHC Present? ☐ Yes ☒ No	LHC Thickness:

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1	13:50	7.5	78.2	.43 x1 umhos
2	13:55	7.3	77.9	.43
3	14:05	7.45	78.0	.42

EVACUATION

Initial Height of Water in Casing (ft): 9.45

Volume (gal): 6.17

Volume to be Evacuated: ☒ x3 ☐ x4: 18.51

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal / ft³

V_2 " casing = 0.163 gal / ft.
V_3 " casing = 0.367 gal / ft.
V_4 " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_6 " casing = 1.470 gal / ft.
V_8 " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated Systems: ☐ Bladder Pump ☐ Bailer

PVC Bailer: ☐ 1/2 in. ☒ 1 1/4 in. ☐ 3 in.

Sampling Port No.:

Volume (gal): | Rate (gpm):

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	13:55			
Start Time	13:50			
Minutes	5			
Amt Evac'd	30.25 gal	gal	gal	gal
Total Evac'd	gal			
Total Minutes	min			
Evac Rate	5.0 gpm			

Pumped Dry? ☐ Yes ☒ No — After (gal):

Depth to Water During Pumping (ft): — Time:

Depth to Water for 80% Recovery: — Recovery Rate (gpm):

Sampled After: ☐ 80% Rec. ☐ 2 hours — % Recovery at Time of Sampling:

Recovery

	Time	DTW
1	13:55	12.10
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☒ End of Bailer ☐ Other:

Time Samples Taken: 14:05 — Date: 4-27-93

Depth to Water (ft): 9.6 — Refrigerated? ☒ Yes ☐ No

Sample Color: cloudy — Odor: none

Sediment / Foreign Matter: silty

Sampling Sequence:

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
MW-7A	40	V	HCl	TPH-G/BETX	RESNA
78	"	"	"	"	"

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

WATER SAMPLING DATA

RESNA Working to Restore Nature

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN CORP	MW-5	4.27.93		DRO

WELL DATA

Well Depth (ft.)	Sounded Depth (ft.)	Well Type
13.7		☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.) 10.45	Date/Time	
Well Diam. (in.) 4"	LHC Present? ☐ Yes ☒ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1	14:25	7.55	78.6	.13 umhos X 1
2	14:30	7.54	78.40	.13
3	14:35	7.54	78.55	.13

EVACUATION

Initial Height of Water in Casing (ft) 3.05

Volume (gal) 2.25

Volume to be Evacuated ☒ x3 ☐ x4 6.76

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal / ft³

- V_2 " casing = 0.163 gal / ft.
- V_3 " casing = 0.367 gal / ft.
- V_4 " casing = 0.653 gal / ft.
- $V_{4.5}$ " casing = 0.826 gal / ft.
- V_6 " casing = 1.470 gal / ft.
- V_8 " casing = 2.610 gal / ft.
- V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal) | Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time	14.33			
Start Time	14.25			
Minutes	8			
Amt Evac'd	7 gal	gal	gal	gal

Total Evac'd _____ gal

Total Minutes _____ min

Evac Rate .875 gpm

Pumped Dry? ☐ Yes ☒ No — After (gal)

Depth to Water During Pumping (ft) — Time

Depth to Water for 80% Recovery — Recovery Rate (gpm)

Sampled After: ☐ 80% Rec. ☐ 2 hours — % Recovery at Time of Sampling

Recovery

	Time	DTW
1	14:30	13.40
2		
3		
4		
5		

SAMPLING

Point of Collection ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken 14:35 — Date 4-27-93

Depth to Water (ft) 11.70 — Refrigerated? ☒ Yes ☐ No

Sample Color SLIGHTLY Cloudy — Odor none

Sediment / Foreign Matter none

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
MW-5A	40	V	HCl	TPH / BETX	RESNA
5B	"	"	"	"	"

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

BAILED All The way down

WATER SAMPLING DATA

RESNA
Working to Restore Nature

Project No.	Project Name	Well Name	Date	Time	Initials
87172.42	SCOTSMAN CORP	TB	4/27/93		DKD

WELL DATA

Well Depth (ft.)	Sounded Depth (ft.)	Well Type
		☐ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft.)	Date/Time	
Well Diam. (in.)	LHC Present? ☐ Yes ☐ No	LHC Thickness

CHEMICAL DATA

	Time	Ph Probe No.	Temp Probe No.	Cond Probe No.
1				umhos
2				
3				

EVACUATION

Initial Height of Water in Casing (ft)

Volume (gal)

Volume to be Evacuated ☐ x3 ☐ x4

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft³

V_2 " casing = 0.163 gal / ft.
V_3 " casing = 0.367 gal / ft.
V_4 " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_5 " casing = 1.470 gal / ft.
V_6 " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer
PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal)	Rate (gpm)

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd ____ gal
Total Minutes ____ min
Evac Rate ____ gpm

Pumped Dry? ☐ Yes ☐ No
After (gal)

Depth to Water During Pumping (ft)
Time

Depth to Water for 80% Recovery
Recovery Rate (gpm)

Sampled After: ☐ 80% Rec. ☐ 2 hours
% Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 0 Date: 4/27/93

Depth to Water (ft): 0 Refrigerated? ☒ Yes ☐ No

Sample Color: clear Odor: none

Sediment / Foreign Matter: none

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab
TB-A	40	V	HCl	TPH-G/BETX	Resna
TB-B	"	"	"	"	"

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

LIQUID-LEVEL DATA SHEET

Project No.	Project Name	Well Name	Date	Time	Initials
87172.42	SCOTSMAN	MW-5	5-27-93		

WELL DATA

Well Depth (ft)	Sounded Depth (ft)	Well Type
14.0		☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft) 4.33	Date/Time	
Well Diam. (in) 4"	LHC Present? ☐ Yes ☒ No	LHC Thickness

CHEMICAL DATA

	Time	PH Probe No.	Temp Probe No.	Cond Probe No.
1	10:35	7.30	21.8	.41
2	10:40	7.35	21.5	.41
3	10:45	7.36	21.5	.41

umhos

EVACUATION

Initial Height of Water in Casing (ft): 9.67

Volume (gal): 6.31

Volume to be Evacuated: ☒ x 3 ☐ x 4 → 19

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft³

V_2 * casing = 0.163 gal / ft.
V_3 * casing = 0.367 gal / ft.
V_4 * casing = 0.653 gal / ft.
$V_{4.5}$ * casing = 0.826 gal / ft.
V_6 * casing = 1.470 gal / ft.
V_8 * casing = 2.610 gal / ft.
V_{10} * casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal): 20 | Rate (gpm):

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd ____ gal
Total Minutes ____ min
Evac Rate ____ gpm

Pumped Dry? ____ Amt (gal) ____

Depth to Water During Pumping (ft) ____ Time ____

Depth to Water for 80% Recovery ____ Recovery Rate (gpm) ____

Sampled After: ☐ 80% Rec. ☐ 2 hrs ____ % Recovery at Time of Sampling ____

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 12:40 Date: 5-27-93

Depth to Water (ft): ____ Refrigerated? ☒ Yes ☐ No

Sample Color: CLEAR Odor: NONE

Sediment / Foreign Matter: ____

Sampling Sequence: ____

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

RESNA
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LIQUID-LEVEL DATA SHEET

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN	MW-7	5-27-93		

WELL DATA

Well Depth (ft)	Sounded Depth (ft)	Well Type
13.5		☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft) 4.45	Date/Time	
Well Diam. (in) 4"	LHC Present? ☐ Yes ☒ No	LHC Thickness

CHEMICAL DATA

	Time	PH Probe No.	Temp Probe No.	Cond Probe No.	
1	11:00	7.31	21.5	.40	umhos
2	11:05	7.42	21.4	.42	
3	11:10	7.40	21.4	.41	

EVACUATION

Initial Height of Water in Casing (ft): 9.05

Volume (gal): 5.9

Volume to be Evacuated: ☒ x 3 ☐ x 4 — 18

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft^3

V_2 " casing = 0.163 gal / ft.
V_3 " casing = 0.367 gal / ft.
V_4 " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_6 " casing = 1.470 gal / ft.
V_8 " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal): 20 Rate (gpm):

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd _____ gal
Total Minutes _____ min
Evac Rate _____ gpm

Pumped Dry? ☐ After (gal)

Depth to Water During Pumping (ft) Time

Depth to Water @ 80% Recovery Recovery Rate (gpm)

Pumped After: ☐ 80% Rec. ☐ 2 hrs % Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken 12:30 Date 5-27-93

Depth to Water (ft) Refrigerated? ☐ Yes ☐ No

Sample Color CLOUDY Odor NONE

Sediment / Foreign Matter

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

RESNA
Working to Restore Nature

LIQUID-LI[illegible] DATA SHEET

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN	RW-1	5-27-93		

WELL DATA

Well Depth (ft)	Sounded Depth (ft)	Well Type
30'		☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft) 625	Date/Time	
Well Diam. (in) 6"	LHC Present? ☐ Yes ☒ No	LHC Thickness

CHEMICAL DATA

	Time	PH Probe No.	Temp Probe No.	Cond Probe No.	
1	11:35	7.75	21.2	.45	umhos
2	11:45	7.89	21.1	.41	
3	11:55	7.88	21.1	.40	

EVACUATION

Initial Height of Water in Casing (ft): 2375

Volume (gal): 35

Volume to be Evacuated: ☒ x 3 ☐ x 4 — 105

Formulas and Conversions
r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft³
V_2 " casing = 0.163 gal / ft.
V_3 " casing = 0.367 gal / ft.
V_4 " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_6 " casing = 1.470 gal / ft.
V_8 " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment
Dedicated System ☐ Bladder Pump ☐ Bailer
PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.
Sampling Port No.
Volume (gal): 105 Rate (gpm): ~5

Evacuation	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd ____ gal
Total Minutes ____ min
Evac Rate ____ gpm

Pumped Dry? ☐ Yes ☐ No — After (gal)

Depth to Water During Pumping (ft) — Time

Depth to Water @ 80% Recovery — Recovery Rate (gpm)

Pumped After: ☐ 80% Rec. ☐ 2 hrs — % Recovery at Time of Sampling

Recovery	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 12:45 Date: 5-27-93

Depth to Water (ft)

Refrigerated? ☒ Yes ☐ No

Sample Color: CLEAR Odor: NONE

Sediment / Foreign Matter

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

RESNA
Working to Restore Nature

LIQUID-LEVEL DATA SHEET

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN	RW-3	5-27-93		

WELL DATA

Well Depth (ft)	Sounded Depth (ft)	Well Type
30'		☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft) 6.52	Date/Time	
Well Diam. (in) 6"	LHC Present? ☐ Yes ☒ No	LHC Thickness

CHEMICAL DATA

	Time	PH Probe No.	Temp Probe No.	Cond Probe No.	
1	11:30	7.25	21.0	.45	umhos
2	11:40	7.35	21.0	.43	
3	11:50	7.36	21.0	.46	

EVACUATION

Initial Height of Water in Casing (ft): 23.48

Volume (gal): 34.5

Volume to be Evacuated: ☒ x 3 ☐ x 4 → 104

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft³

- V_2 " casing = 0.163 gal / ft.
- V_3 " casing = 0.367 gal / ft.
- V_4 " casing = 0.653 gal / ft.
- $V_{4.5}$ " casing = 0.826 gal / ft.
- V_6 " casing = 1.470 gal / ft.
- V_8 " casing = 2.610 gal / ft.
- V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal): 105 Rate (gpm): ~5

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd ____ gal
Total Minutes ____ min
Evac Rate ____ gpm

Pumped Dry? ____ After (gal) ____

Depth to Water During Pumping (ft) ____ Time ____

Depth to Water @ 80% Recovery ____ Recovery Rate (gpm) ____

Pumped After: ☐ 80% Rec. ☐ 2 hrs ____ % Recovery at Time of Sampling

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 12:50 Date: 5-27-93

Depth to Water (ft): ____ Refrigerated? ☒ Yes ☐ No

Sample Color: CLEAR Odor: NONE

Sediment / Foreign Matter:

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

RESNA
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LIQUID-LEVEL DATA SHEET

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN CORP.	MW-5	7-2-93		

WELL DATA

Well Depth (ft) 14.0	Sounded Depth (ft)	Well Type ☑ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft) ~5.0	Date/Time	
Well Diam. (in) 6"	LHC Present? ☐ Yes ☒ No	LHC Thickness

CHEMICAL DATA

	Time	PH Probe No.	Temp Probe No.	Cond Probe No.
1	10:15	7.50	70.5	1.08 umhos
2	10:20	7.62	71.9	1.25
3	10:30	7.69	72.3	1.32

EVACUATION

Initial Height of Water in Casing (ft): 9

Volume (gal): 5.9

Volume to be Evacuated: ☑ x 3 ☐ x 4 — 17.6

Formulas and Conversions
r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft³
V_2 " casing = 0.163 gal / ft.
V_3 " casing = 0.367 gal / ft.
V_4 " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_6 " casing = 1.470 gal / ft.
V_8 " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment
Dedicated System ☐ Bladder Pump ☐ Bailer
PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal): 30 Rate (gpm):

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd ____ gal
Total Minutes ____ min
Evac Rate ____ gpm

Pumped Dry? ____ After (gal) ____

Depth to Water During Pumping (ft) ____ Time ____

Depth to Water for 80% Recovery ____ Recovery Rate (gpm) ____

Sampled After: ☐ 80% Rec. ☐ 2 hrs — % Recovery at Time of Sampling ____

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 1:40 Date: 7-2-93

Depth to Water (ft): ____ Refrigerated? ☒ Yes ☐ No

Sample Color ____ Odor ____

Sediment / Foreign Matter ____

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

RESNA
Working to Restore Nature

LIQUID-LEVEL DATA SHEET

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN	MW-7	7-2-93		

WELL DATA

Well Depth (ft)	Sounded Depth (ft)	Well Type
13.51		☒ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft) 5.82	Date/Time	
Well Diam. (in) 4"	LHC Present? ☐ Yes ☒ No	LHC Thickness

CHEMICAL DATA

	Time	PH Probe No.	Temp Probe No.	Cond Probe No.
1	11:50	8.43	76.9	1.15 umhos
2	12:00	6.91	68.3	1.75
3	PUMPED DRY			

EVACUATION

Initial Height of Water in Casing (ft): 7.69

Volume (gal): 5.0

Volume to be Evacuated: ☒ x 3 ☐ x 4 — 15

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft³

V_2 " casing = 0.163 gal / ft.
V_3 " casing = 0.367 gal / ft.
V_4 " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_6 " casing = 1.470 gal / ft.
V_8 " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal): 8 | Rate (gpm):

Evacuation	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd _____ gal
Total Minutes _____ min
Evac Rate _____ gpm

Pumped Dry? Yes | After (gal): 8.0

Height to Water During Pumping (ft) | Time

Depth to Water for 80% Recovery | Recovery Rate (gpm)

Sampled After: ☐ 80% Rec ☐ 2 hrs | % Recovery at Time of Sampling

Recovery	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 1:45 | Date: 7-2-93

Depth to Water (ft) | Refrigerated? ☐ Yes ☐ No

Sample Color | Odor

Sediment / Foreign Matter

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

RESNA
Working to Restore Nature

LIQUID-LEVEL DATA SHEET

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN	RW-3	7-2-93		

WELL DATA

Well Depth (ft): 29.70	Sounded Depth (ft):	Well Type: ☐ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft): 9.00	Date/Time:	
Well Diam. (in): 6"	LHC Present? ☐ Yes ☐ No	LHC Thickness:

CHEMICAL DATA

	Time	PH Probe No.	Temp Probe No.	Cond Probe No.
1	10:30	7.34	72.1	1.22
2	10:40	7.41	70.7	1.19
3	10:50	7.56	69.3	1.22

umhos

EVACUATION

Initial Height of Water in Casing (ft): 20.7

Volume (gal): 30

Volume to be Evacuated: ☒ x 3 ☐ x 4 — 90

Formulas and Conversions

r = well radius in ft.
h = ht. of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft^3

V_2 " casing = 0.163 gal / ft.
V_3 " casing = 0.367 gal / ft.
V_4 " casing = 0.653 gal / ft.
$V_{4.5}$ " casing = 0.826 gal / ft.
V_6 " casing = 1.470 gal / ft.
V_8 " casing = 2.610 gal / ft.
V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.

Volume (gal): 100 Rate (gpm):

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd: gal
Total Minutes: min
Evac Rate: gpm

Pumped Dry? Amt (gal):

Depth to Water During Pumping (ft): Time:

Depth to Water @ 80% Recovery: Recovery Rate (gpm):

Sampled After: ☐ 80% Rec ☐ 2 hrs — % Recovery at Time of Sampling:

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 12:45 Date: 8-2-93

Depth to Water (ft): Refrigerated? ☑ Yes ☐ No

Sample Color: Odor:

Sediment / Foreign Matter:

Sampling Sequence

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab

Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

RESNA
Working to Restore Nature

LIQUID-LI[illegible]Z DATA SHEET

Project No.	Project Name	Well Name	Date	Time	Initials
B7172.42	SCOTSMAN	RW-1	7-2-93		

WELL DATA

Well Depth (ft): 31.22	Sounded Depth (ft):	Well Type: ☐ Monitor Well ☐ Sampling Port ☐ Other (describe)
DTW (ft): 8.89	Date/Time:	
Well Diam. (in): 6"	LHC Present? ☐ Yes ☐ No	LHC Thickness:

CHEMICAL DATA

	Time	PH Probe No.	Temp Probe No.	Cond Probe No.
1	11:15	7.73	72.5	1.09 umhos
2	11:20	7.63	71.9	1.01
3	11:25	7.59	73.9	1.05

EVACUATION

Initial Height of Water in Casing (ft): 22.33

Volume (gal): 32.9

Volume to be Evacuated: ☑ x 3 ☐ x 4 → 98

Formulas and Conversions

r = well radius in ft.
h = hL of water column in ft.
vol. of column = $\pi r^2 h$
7.48 gal/ft^3

- V_2 " casing = 0.163 gal / ft.
- V_3 " casing = 0.367 gal / ft.
- V_4 " casing = 0.653 gal / ft.
- $V_{4.5}$ " casing = 0.826 gal / ft.
- V_6 " casing = 1.470 gal / ft.
- V_8 " casing = 2.610 gal / ft.
- V_{10} " casing = 4.080 gal / ft.

Sampling Equipment

Dedicated System ☐ Bladder Pump ☐ Bailer

PVC Bailer ☐ 1/2 in. ☐ 1 1/4 in. ☐ 3 in.

Sampling Port No.:

Volume (gal): 120 Rate (gpm):

Evacuation

	Evacuated	Evacuated	Evacuated	Evacuated
Stop Time				
Start Time				
Minutes				
Amt Evac'd	gal	gal	gal	gal

Total Evac'd: gal

Total Minutes: min

Evac Rate: gpm

Pumped Dry? Amt (gal):

Depth to Water During Pumping (ft): Time:

Depth to Water @ 80% Recovery: Recovery Rate (gpm):

Sampled After: ☐ 80% Rec. ☐ 2 hrs % Recovery at Time of Sampling:

Recovery

	Time	DTW
1		
2		
3		
4		
5		

SAMPLING

Point of Collection: ☐ PE Hose ☐ End of Bailer ☐ Other:

Time Samples Taken: 12:30 Date: 7-2-93

Depth to Water (ft): Refrigerated? ☐ Yes ☐ No

Sample Color: Odor:

Sediment / Foreign Matter:

Sampling Sequence:

Sample ID No.	Volume (ml)	Container	Preservative	Analysis	Lab

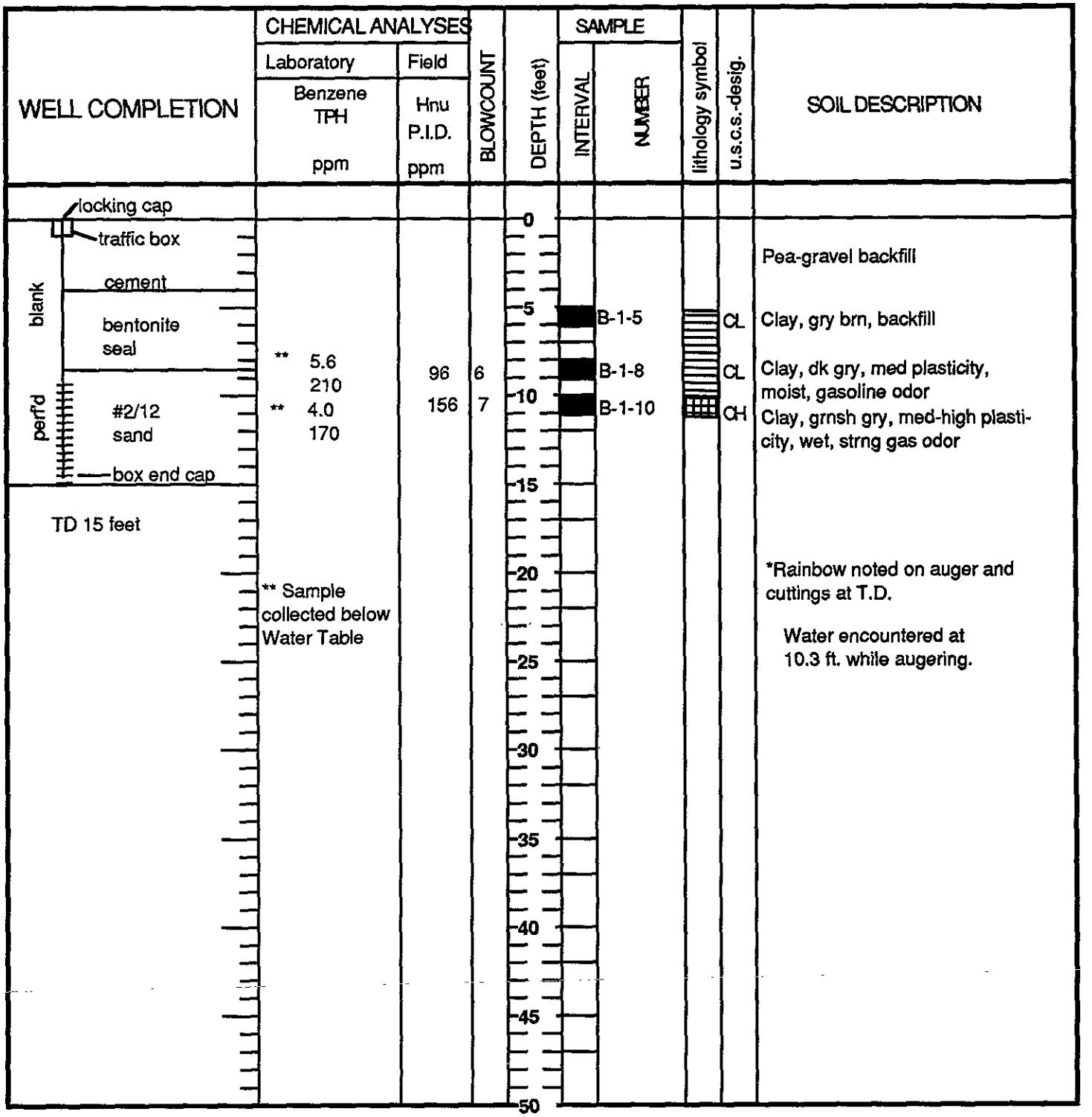
Container Codes: P = Plastic Bottle, V = VOA, B = Brown Glass, C = Clear Glass, Other: Describe

COMMENTS

RESNA
Working to Restore Nature

APPENDIX C

Boring and Well Logs



SURFACE ELEVATION: 325 feet
TOTAL DEPTH: 15 feet
DATE DRILLED: 12-09-88

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inches
WATER TABLE AT: 7.5 feet

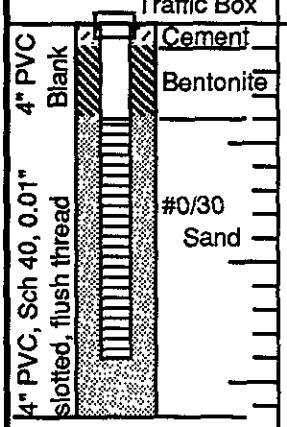
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:SCOTSMAN CORP.
CENTER OF EXCAVATION

LOG OF BORING MW-1 (B-1)

PLATE



WELL COMPLETION	ANALYSES Lab Benzene TPH ppm	ANALYSES Field Hnu P.I.D. ppm	BLOWCOUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	lithology symbol	u.s.c.s.-desig.	SOIL DESCRIPTION
	ND	0	6	5		MW-2-5		CL	CLAY- grysh brn, silty, tr vfn-med sand, damp, high plast, no odor, no stn
	ND		10	10		MW-2-10		CL	CLAY- grysh brn, silty, tr vfn-med sand, damp, high plast, no odor, no stn
	Water (ppb)			15				CL	CLAY- grysh brn, silty, tr vfn-med sand, damp, high plast, no odor, no stn
	15			20					
	52			25					
				30					
				35					
				40					
				45					
				50					

SURFACE ELEVATION: 329 ft
TOTAL DEPTH: 16.5 ft
DATE DRILLED: 5-24-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inch
WATER ENCOUNTERED AT: 4.9 ft

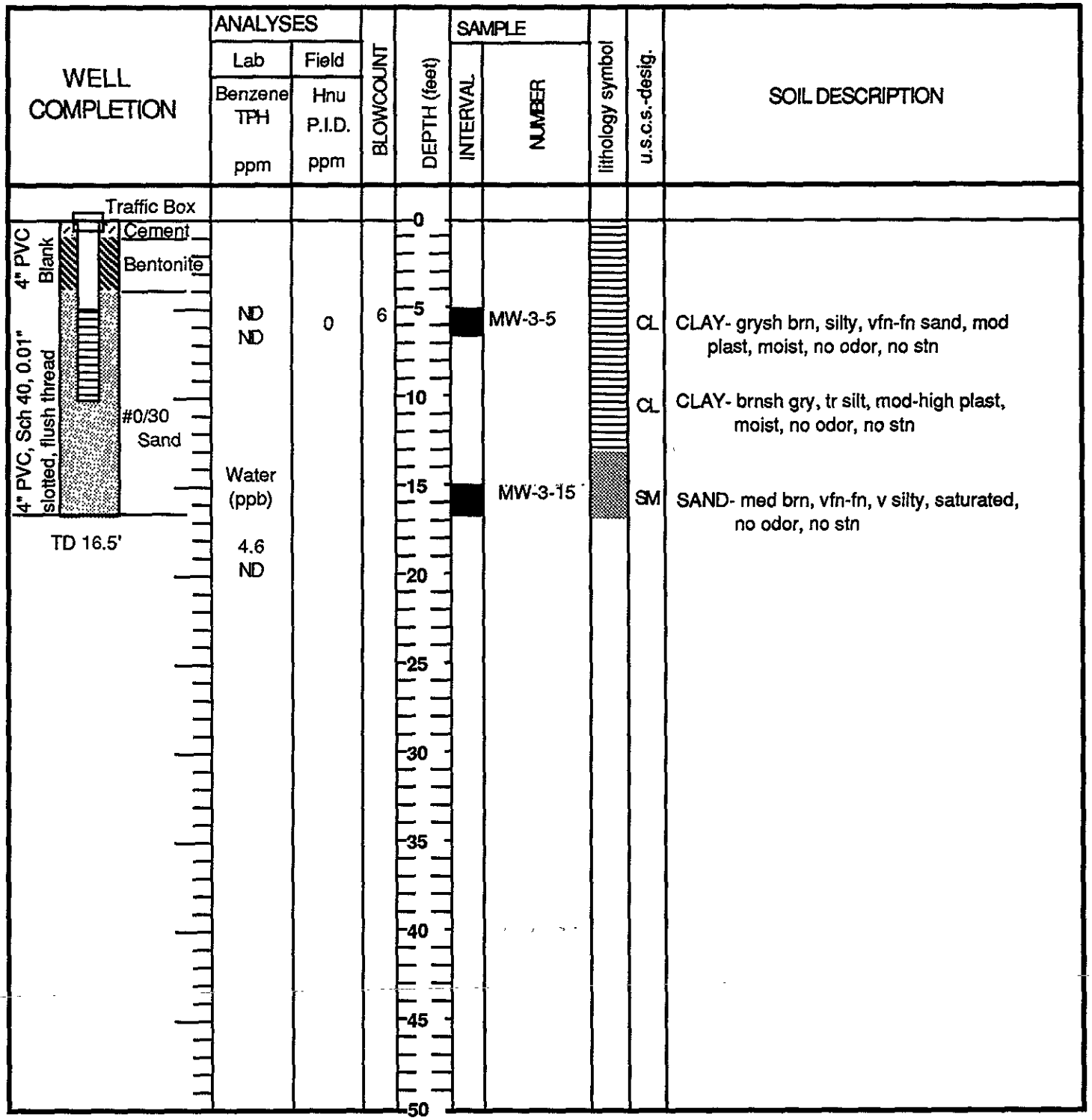
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:
334' NORTH OF MW-1

LOG OF BORING MW-2

PLATE



SURFACE ELEVATION: 327.7 ft
TOTAL DEPTH: 16.5 ft
DATE DRILLED: 5-24-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inch
WATER ENCOUNTERED AT: 3.5 ft

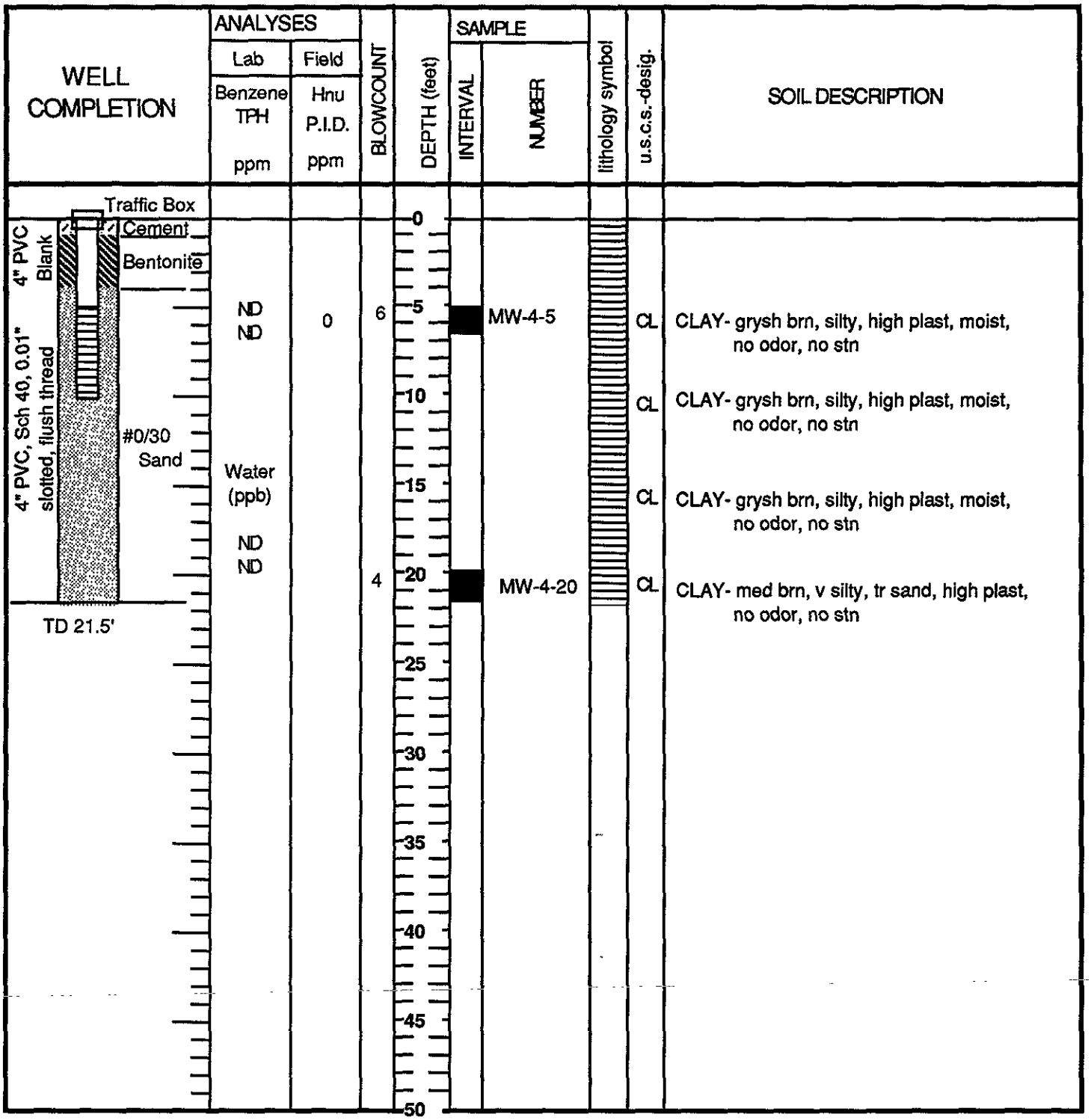
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:
285' NORTH EAST OF MW-1

LOG OF BORING MW-3

PLATE



SURFACE ELEVATION: 329.2 ft
TOTAL DEPTH: 21.5 ft
DATE DRILLED: 5-24-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inch
WATER ENCOUNTERED AT: 7.1 ft

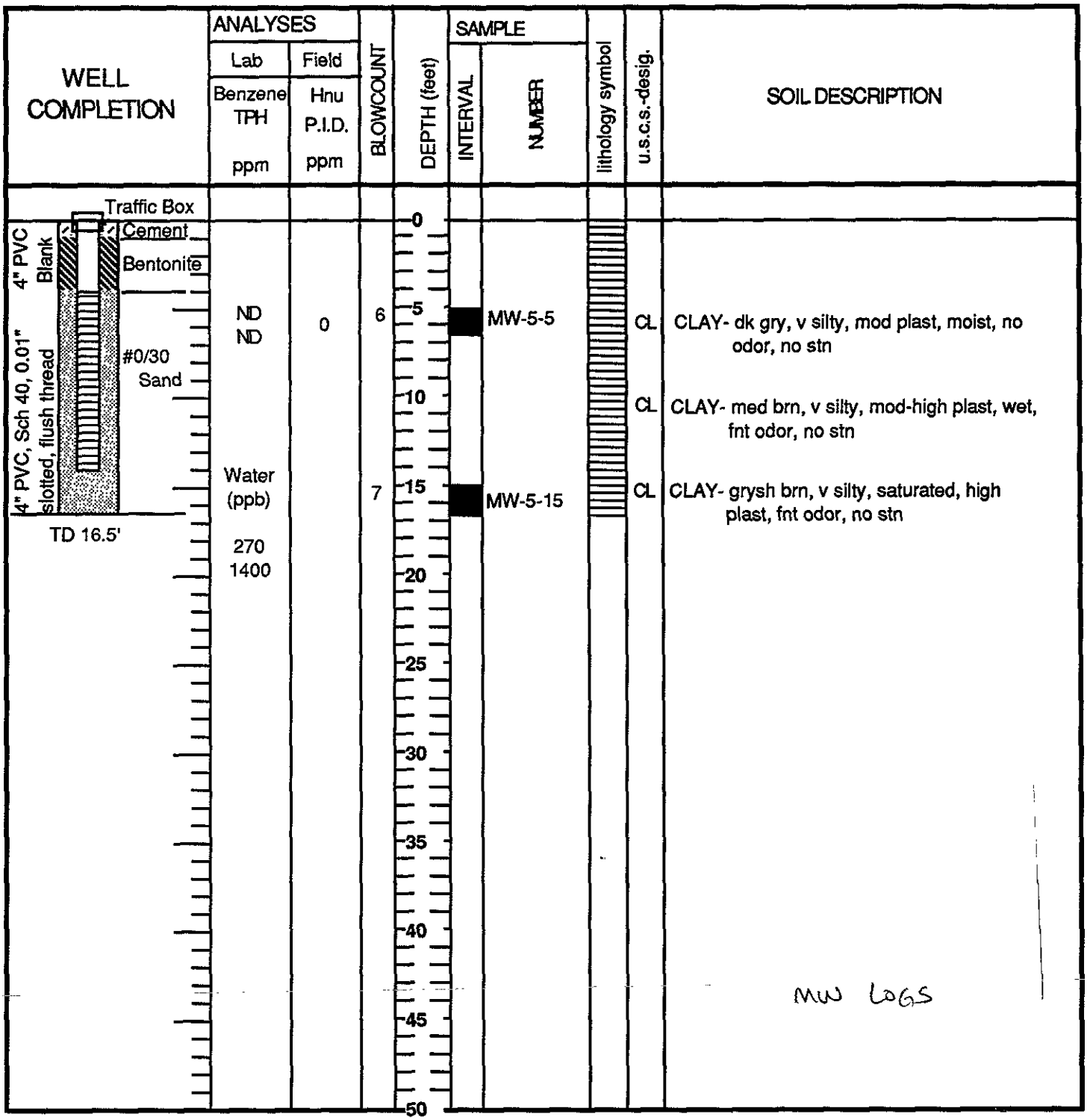
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:
60' SOUTH OF MW-1

LOG OF BORING MW-4

PLATE



SURFACE ELEVATION: 328.9 ft
TOTAL DEPTH: 16.5 ft
DATE DRILLED: 5-25-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inch
WATER ENCOUNTERED AT: 6 ft

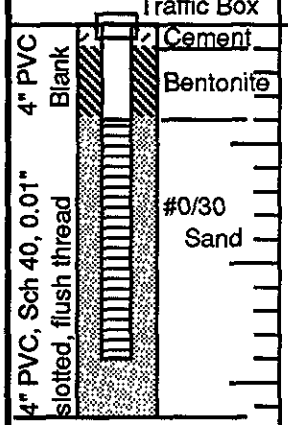
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:
20' SOUTH WEST OF MW-1

LOG OF BORING MW-5

PLATE



WELL COMPLETION	ANALYSES Lab Benzene TPH ppm	ANALYSES Field Hnu P.I.D. ppm	BLOWCOUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	lithology symbol	u.s.c.s.-desig.	SOIL DESCRIPTION
				0					
	ND	0	7	5		MW-6-5		CL	CLAY- dk grysh blk, silty, mod plast, vfnt odor, no stn (possible fill material)
	ND		8	10		MW-6-10		CL	CLAY- brnsh gry, silty, tr sand, mod plast, no odor, no stn
	Water (ppb)		6	15		MW-6-15		CL	CLAY- dk gry, tr silt, high plast, strng gas odor, no stn
	6200			20					
	76000			25					
				30					
				35					
				40					
				45					
				50					

SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 16.5 ft
DATE DRILLED: 5-24-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inch
WATER ENCOUNTERED AT: 5.8 ft

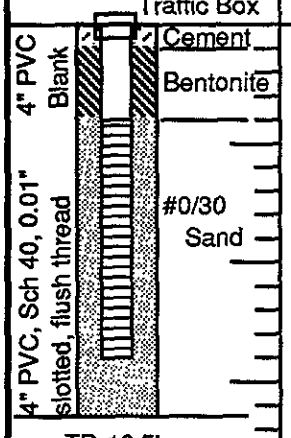
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:
10' SOUTH OF MW-1

LOG OF BORING MW-6

PLATE



WELL COMPLETION	ANALYSES Lab Benzene TPH ppm	ANALYSES Field Hnu P.I.D. ppm	BLOWCOUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	lithology symbol	u.s.c.s.-desig.	SOIL DESCRIPTION
	ND	0	8	5		MW-6-5		CL	CLAY- dk gry, v silty, mod plast, moist, no odor, no stn
	ND								
				10				CL	CLAY- med brn, v silty, mod-high plast, wet, no odor, no stn
	Water (ppb)			15				CL	CLAY- gnsh brn, v sitly, high plast, saturated, no odor, no stn
	67								
	1100								

SURFACE ELEVATION: 328.9 ft
TOTAL DEPTH: 16.5 ft
DATE DRILLED: 5-25-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inch
WATER ENCOUNTERED AT: 6 ft

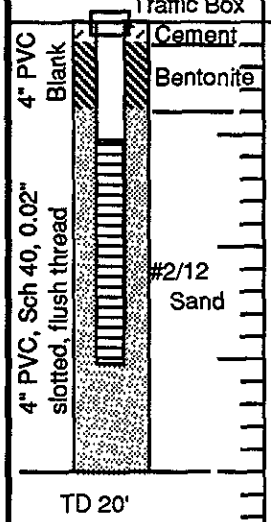
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:
10' NORTH OF MW-1

LOG OF BORING MW-7

PLATE



WELL COMPLETION	ANALYSES Lab Benzene TPH ppm	ANALYSES Field Hnu P.I.D. ppm	BLOWCOUNT	DEPTH (feet)	SAMPLE INTERVAL	SAMPLE NUMBER	lithology symbol	u.s.c.s.-desig.	SOIL DESCRIPTION
			9	0					
	ND	0	9	5		MW-8-5		CL	CLAY- dk gry w/ wht mottle, v silty, med-high plast, moist, no odor, no stn
	ND		12						
				10				CL	CLAY- dk gry, v silty, med-high plast, moist, no odor, no stn
	Water (ppb)			15				ML	SILT- lt grysh brn, v clayey, high plast, moist, no odor, no stn
	ND								
	ND			20				ML	SILT- lt grysh brn, v clayey, high plast, waxy, saturated, no odor, no stn
				25					
				30					
				35					
				40					
				45					
				50					

SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 20 ft
DATE DRILLED: 11-30-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inch
WATER ENCOUNTERED AT: 5.23 ft

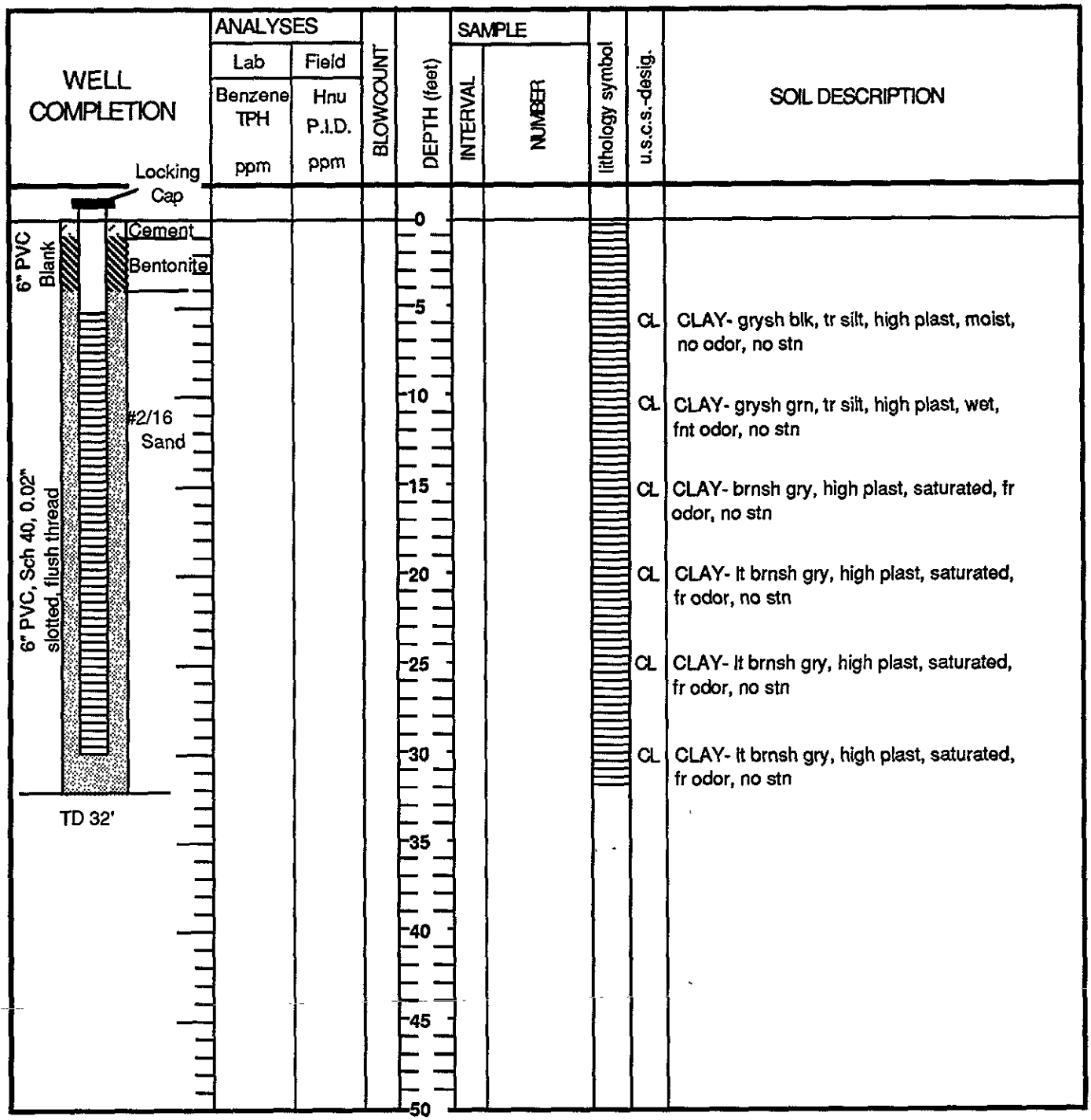
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:
45' DOWNGRADIENT OF MW-5

LOG OF BORING MW-8

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 32 ft
DATE DRILLED: 2-27-90

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 13 inch
WATER ENCOUNTERED AT: 6 ft

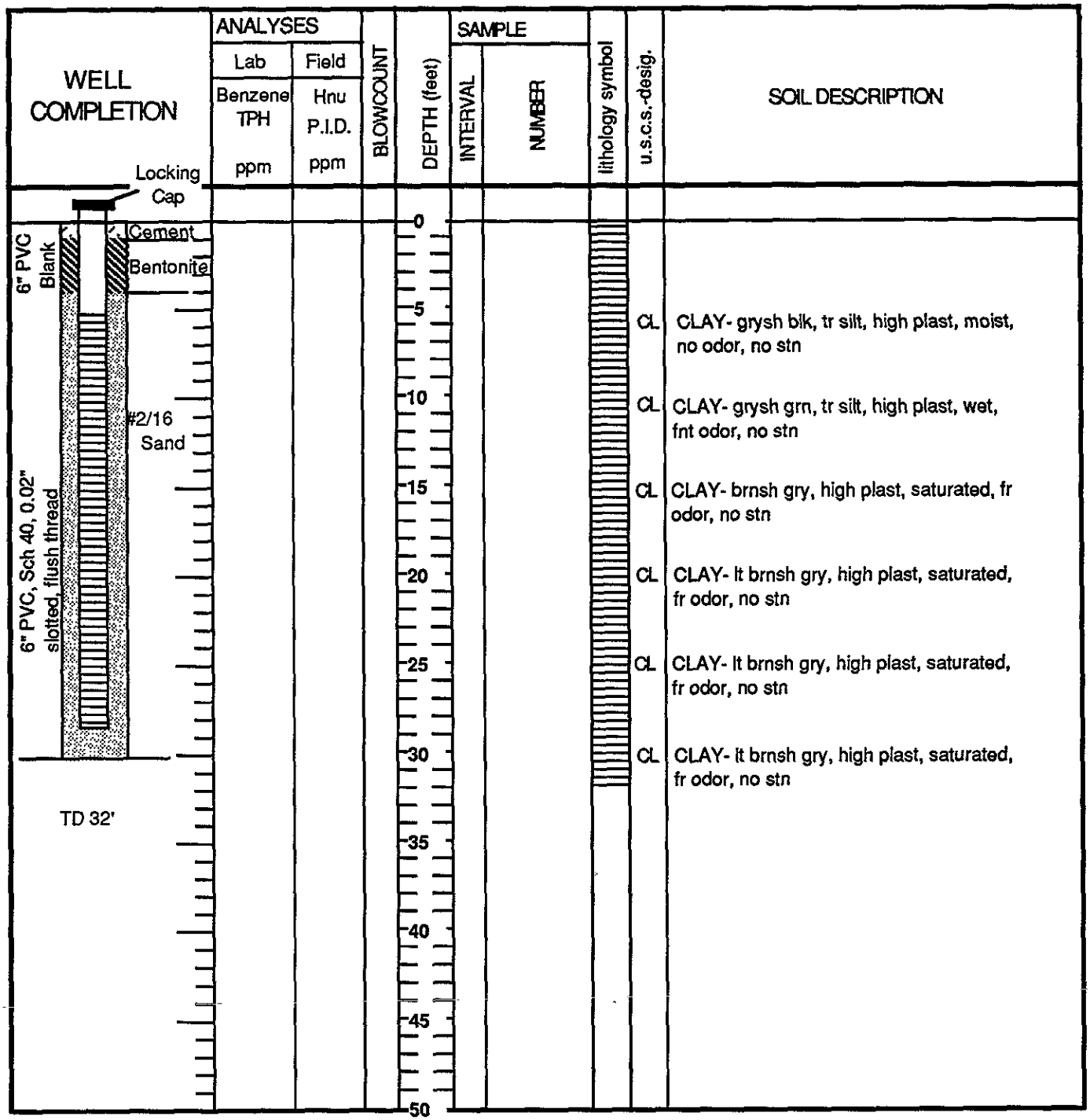
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:
SCOTSMAN CORPORATION

LOG OF BORING RW-1

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 30 ft
DATE DRILLED: 7-18-91

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 13 inch
WATER ENCOUNTERED AT: 7 ft

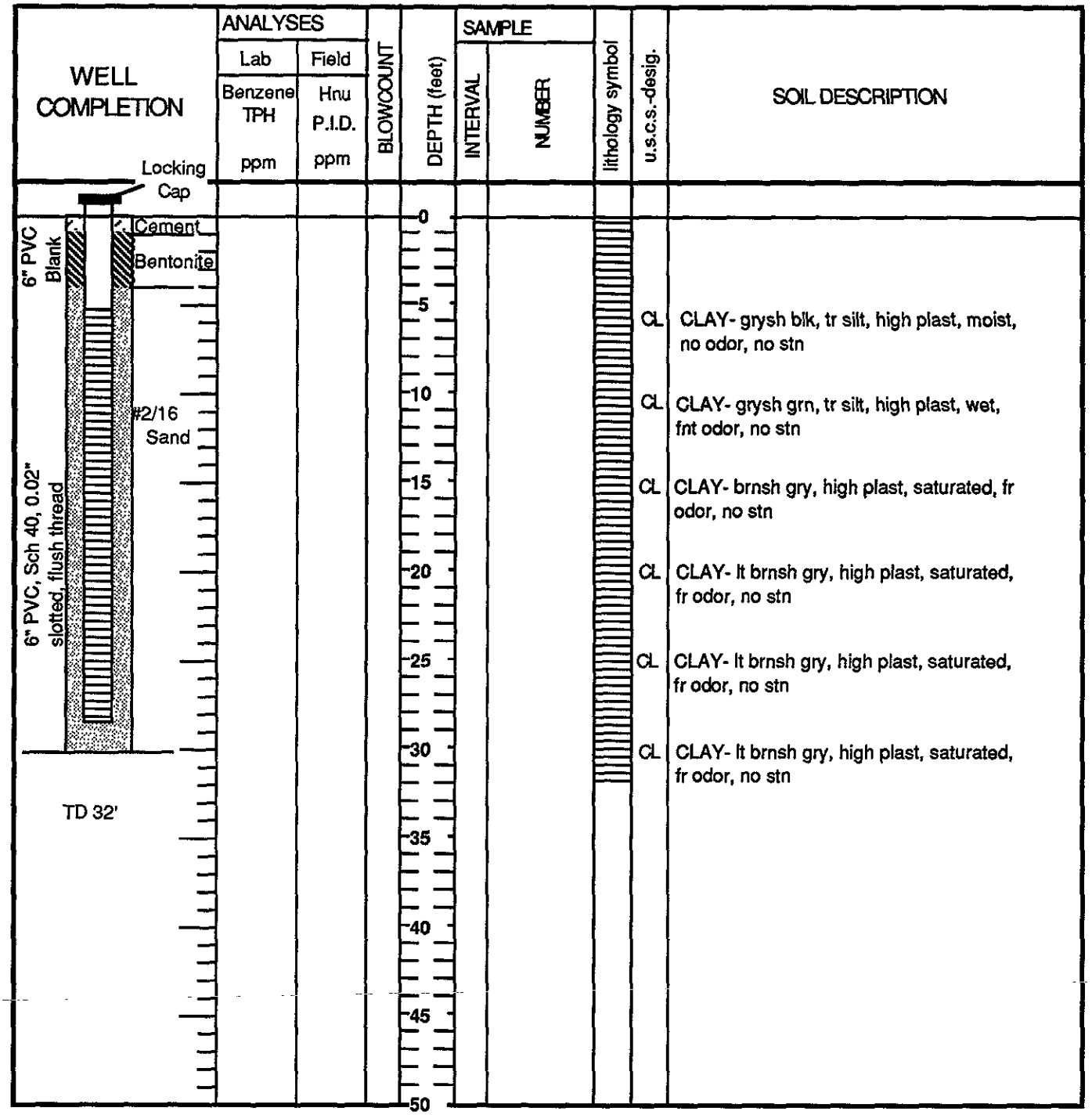
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 3721-42

LOCATION:
SCOTSMAN CORPORATION

LOG OF BORING RW-2

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 30 ft
DATE DRILLED: 7-18-91

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 13 inch
WATER ENCOUNTERED AT: 7 ft

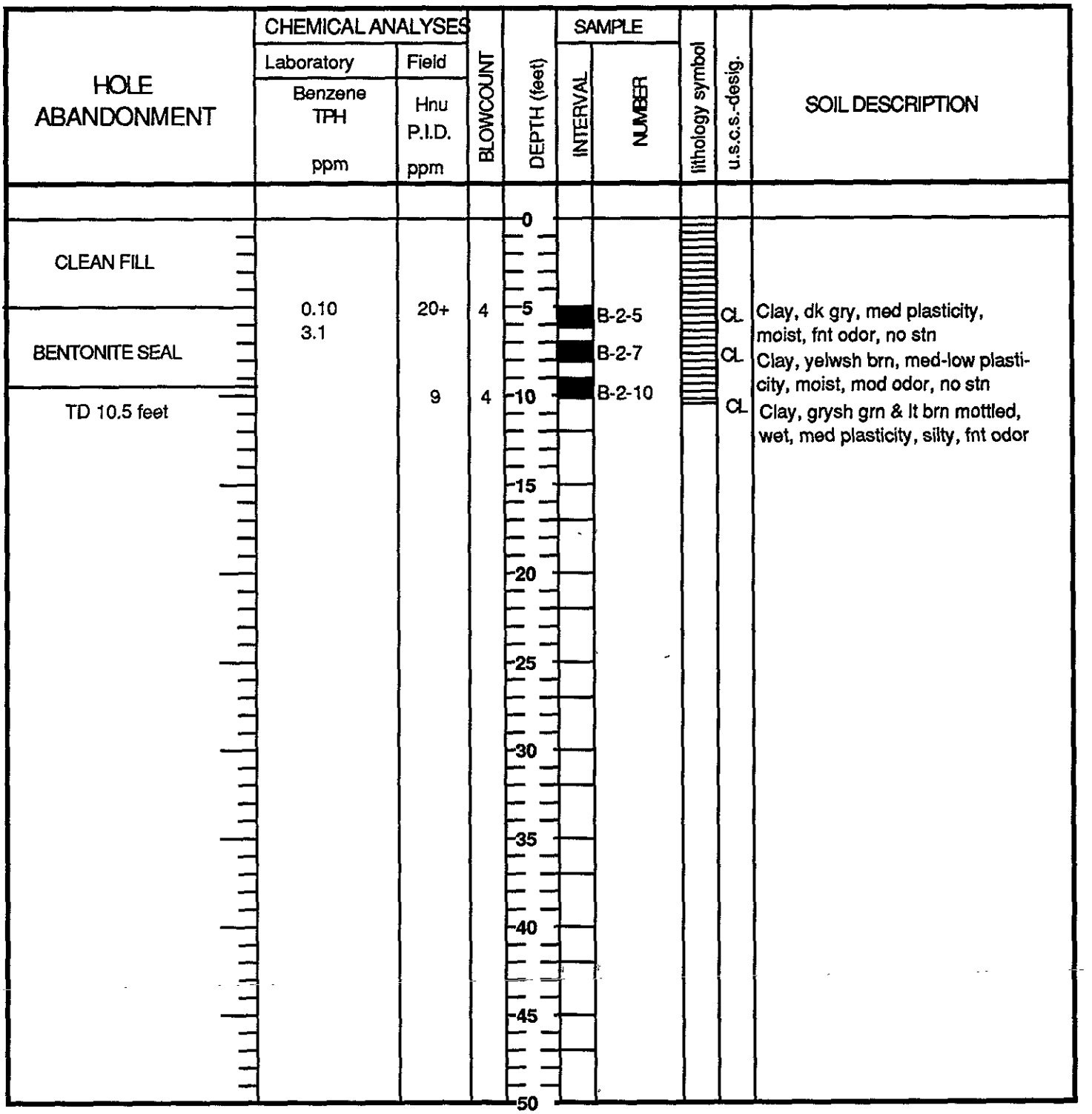
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 3721-42

LOCATION:
SCOTSMAN CORPORATION

LOG OF BORING RW-3

PLATE



SURFACE ELEVATION: 325 feet
TOTAL DEPTH: 10.5 feet
DATE DRILLED: 12-09-88

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inches
WATER TABLE AT: 6 feet

GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:SCOTSMAN CORP.
9.5' EAST OF MW-1

LOG OF BORING B-2

PLATE

HOLE ABANDONMENT	CHEMICAL ANALYSES		BLOWCOUNT	DEPTH (feet)	SAMPLE		lithology symbol	u.s.c.s.-desig.	SOIL DESCRIPTION
	Laboratory	Field			INTERVAL	NUMBER			
	Benzene TPH ppm	Hnu P.I.D. ppm							
CLEAN FILL	ND	0	9	0		B-3-3		CL	Clay, dk gry, silty, med plasticity, moist, no odor
	ND			5					
BENTONITE SEAL	** 2.8	0	6			B-3-6		CH	Clay, dk gry w/wht mott, high plasticity, moist, no odor
	65								
		5	6	10		B-3-9		CL	Clay, brnsh grn, silty, med plasticity, fnt odor, wet
TD 10.5 feet									
	** Sample collected below Water Table			15					
				20					
				25					
				30					
				35					
				40					
				45					
				50					

SURFACE ELEVATION: 325 feet
TOTAL DEPTH: 10.5 feet
DATE DRILLED: 12-09-88

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inches
WATER TABLE AT: 6.75 feet

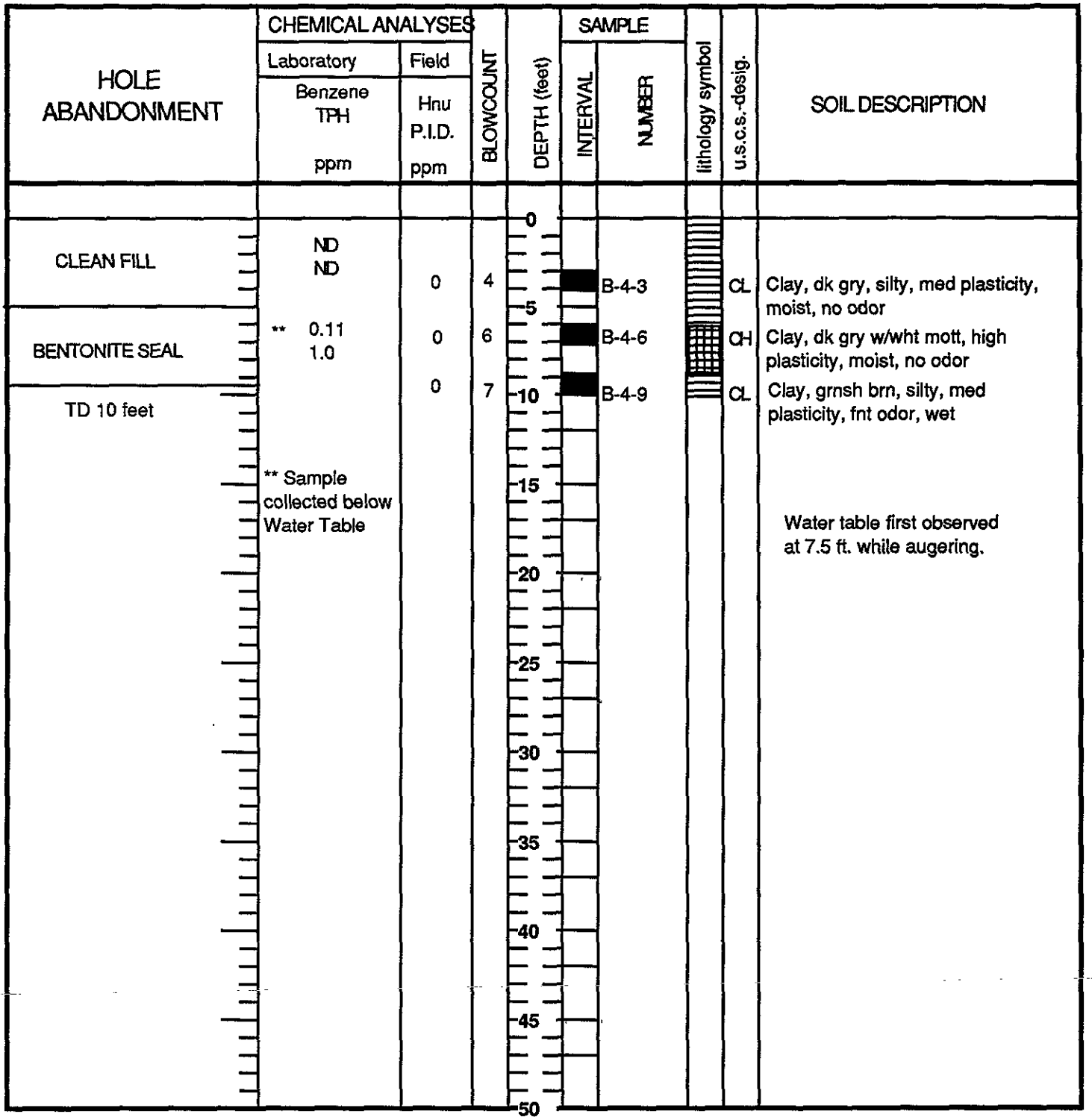
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:SCOTSMAN CORP.
12' SOUTH OF MW-1

LOG OF BORING B-3

PLATE



SURFACE ELEVATION: 325 feet
TOTAL DEPTH: 10 feet
DATE DRILLED: 12-09-88

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 8 inches
WATER TABLE AT: 6 feet

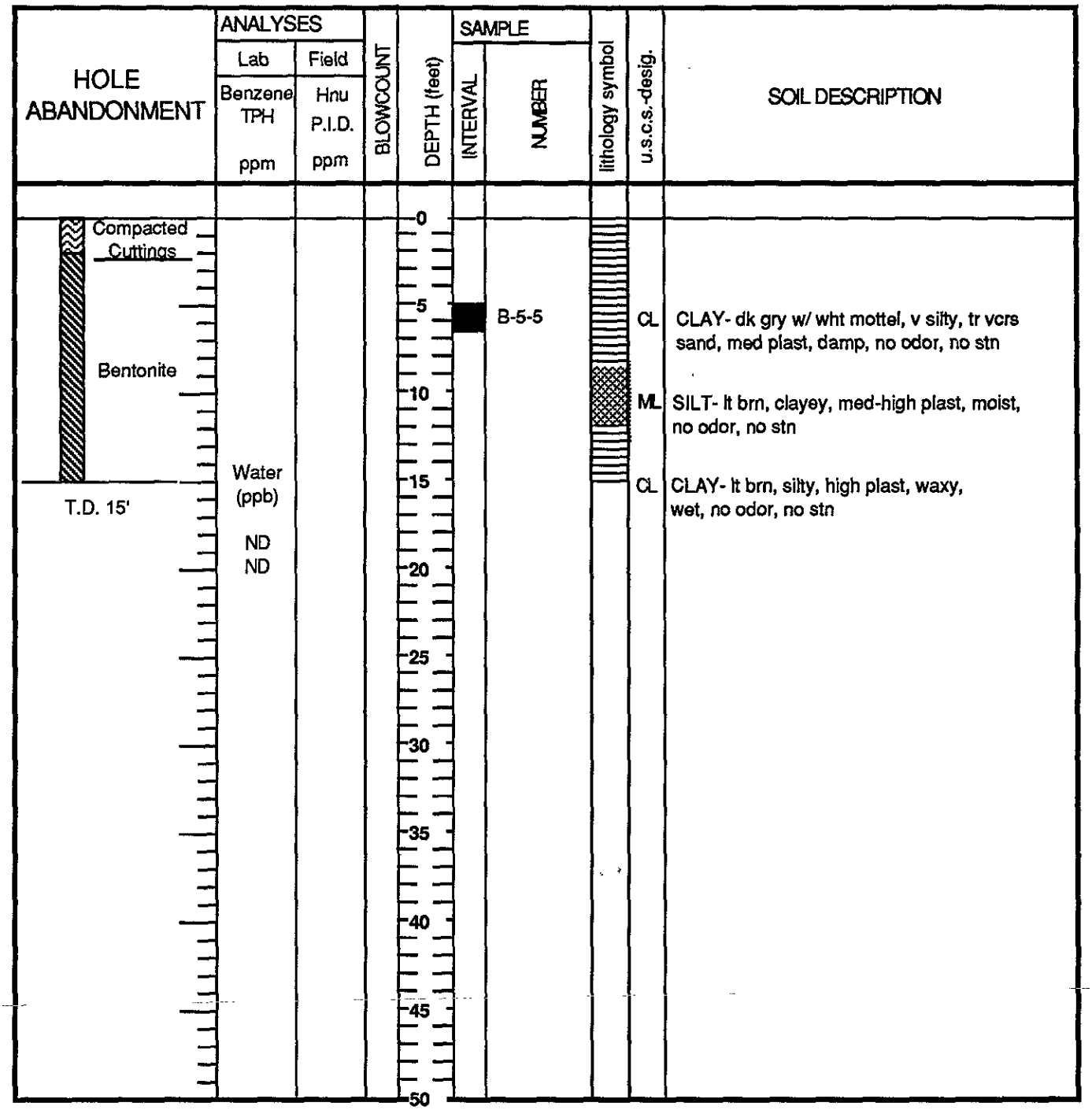
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55018

LOCATION:SCOTSMAN CORP.
10' WEST OF MW-1

LOG OF BORING B-4

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 15 ft
DATE DRILLED: 11-30-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 6 inch
WATER ENCOUNTERED AT: 5.5 ft

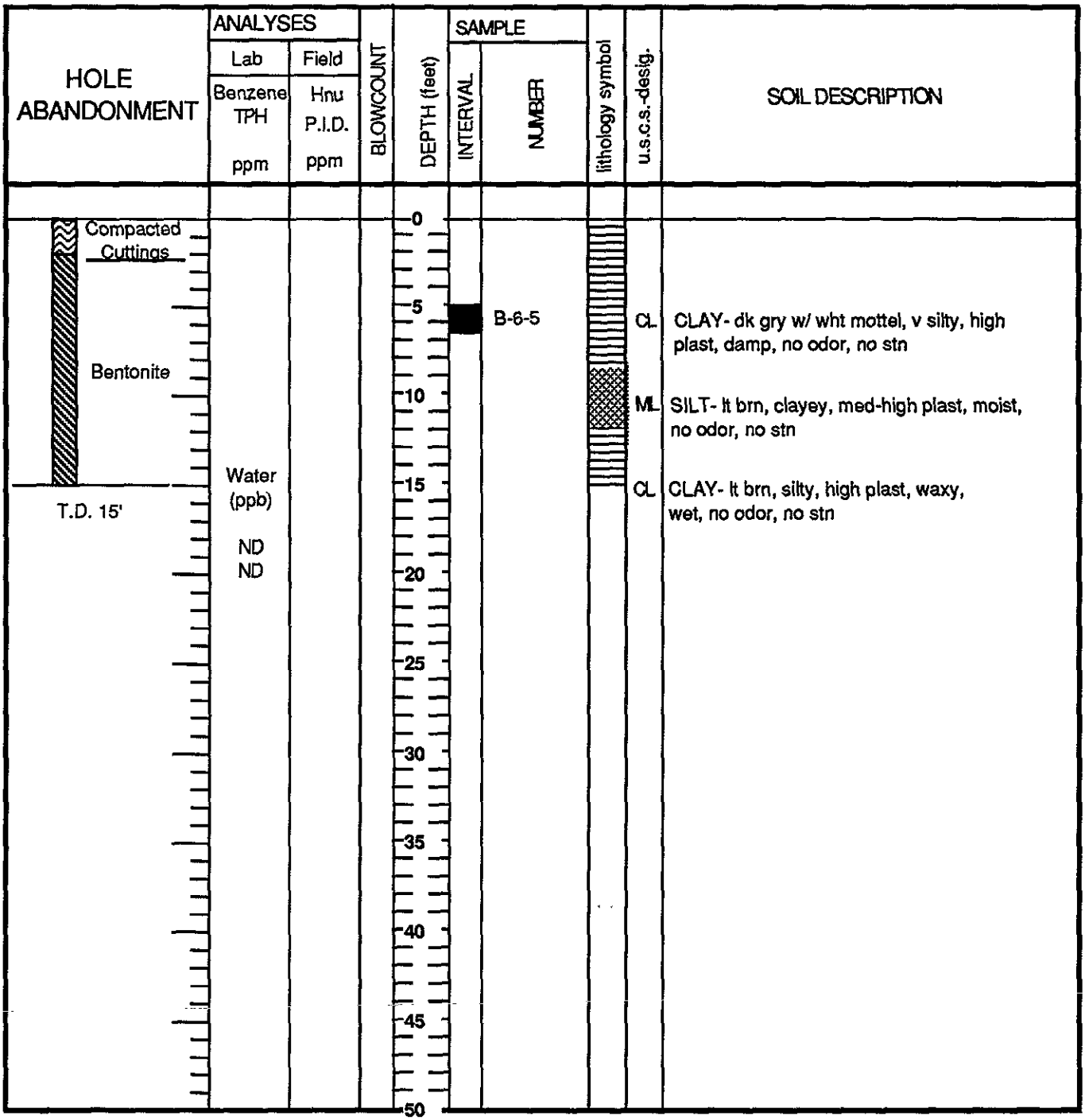
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:

LOG OF BORING B-5

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 15 ft
DATE DRILLED: 11-30-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 6 inch
WATER ENCOUNTERED AT: 5.5 ft

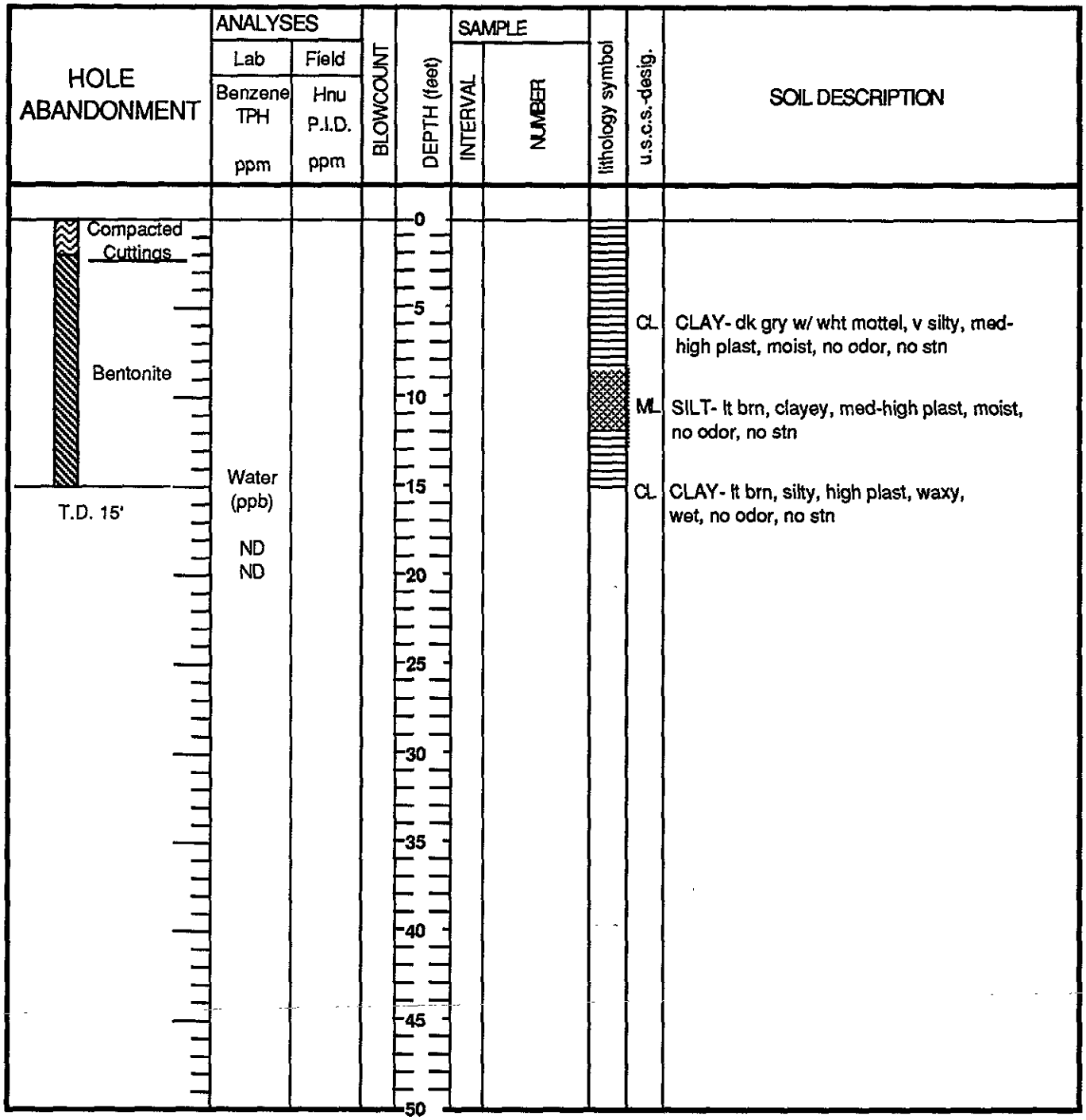
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:

LOG OF BORING B-6

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 15 ft
DATE DRILLED: 11-30-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 6 inch
WATER ENCOUNTERED AT: 5.5 ft

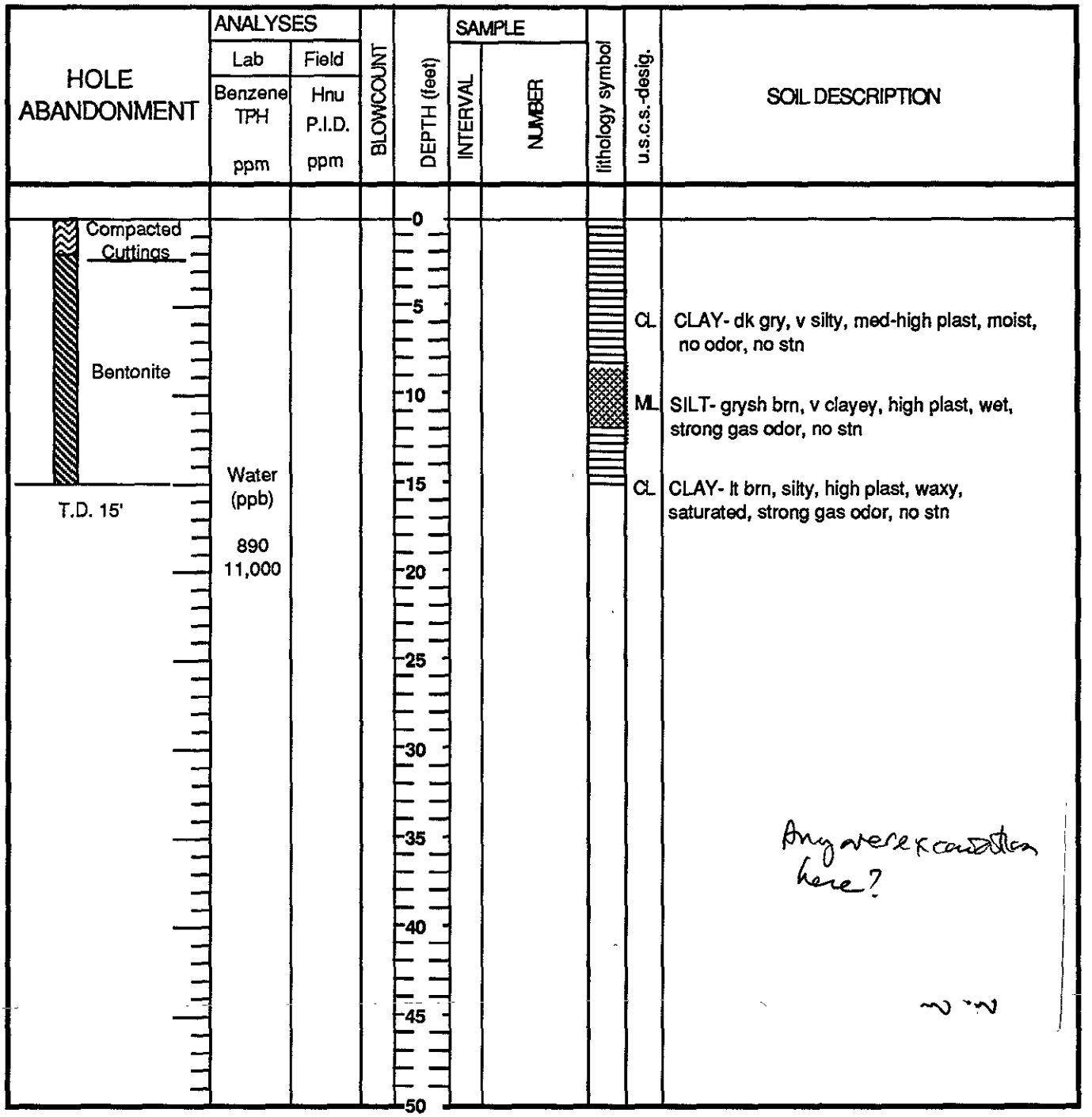
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:

LOG OF BORING B-7

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 15 ft
DATE DRILLED: 11-30-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 6 inch
WATER ENCOUNTERED AT: 5.5 ft

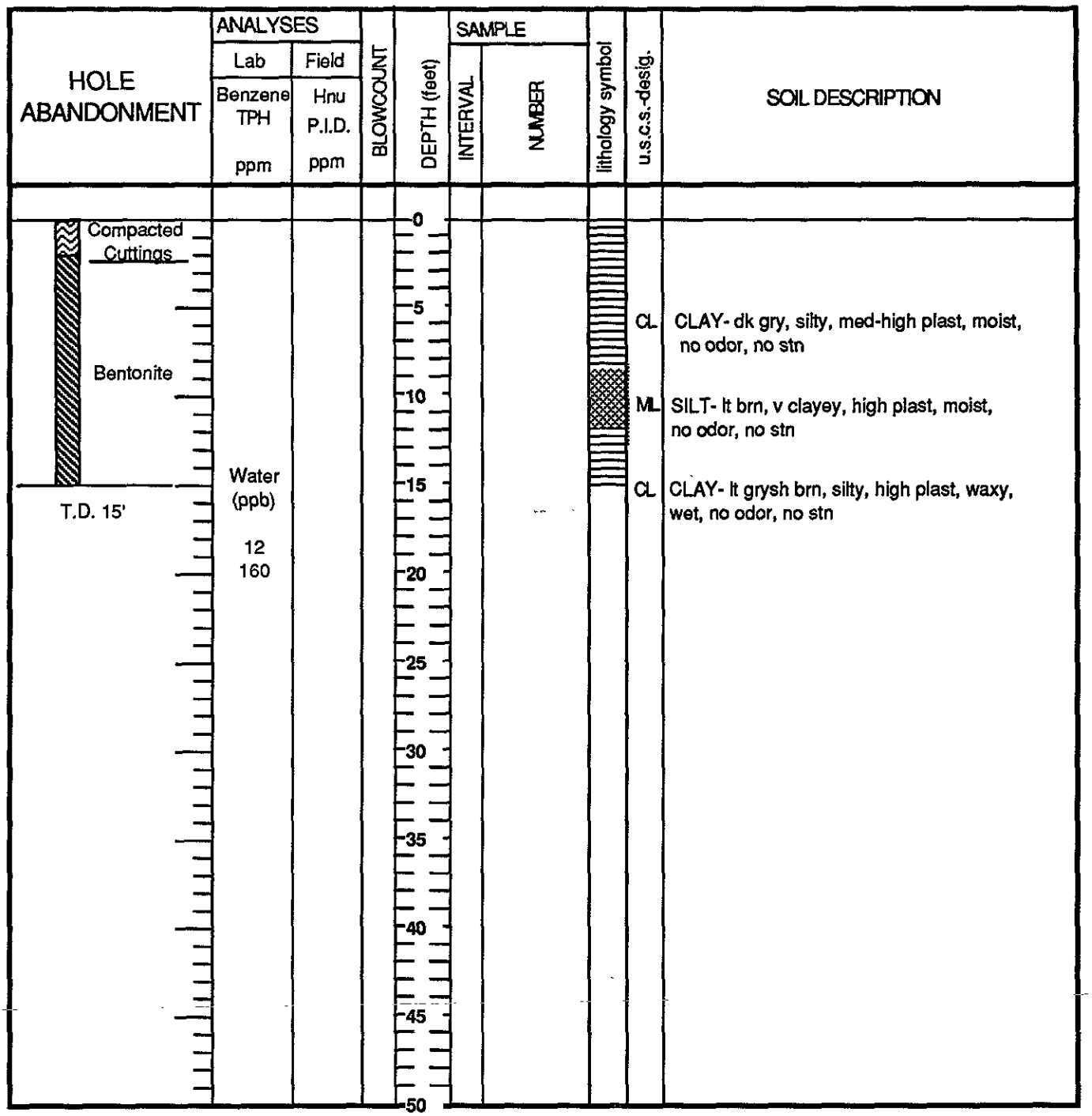
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:

LOG OF BORING B-8

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 15 ft
DATE DRILLED: 11-30-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 6 inch
WATER ENCOUNTERED AT: 5.5 ft

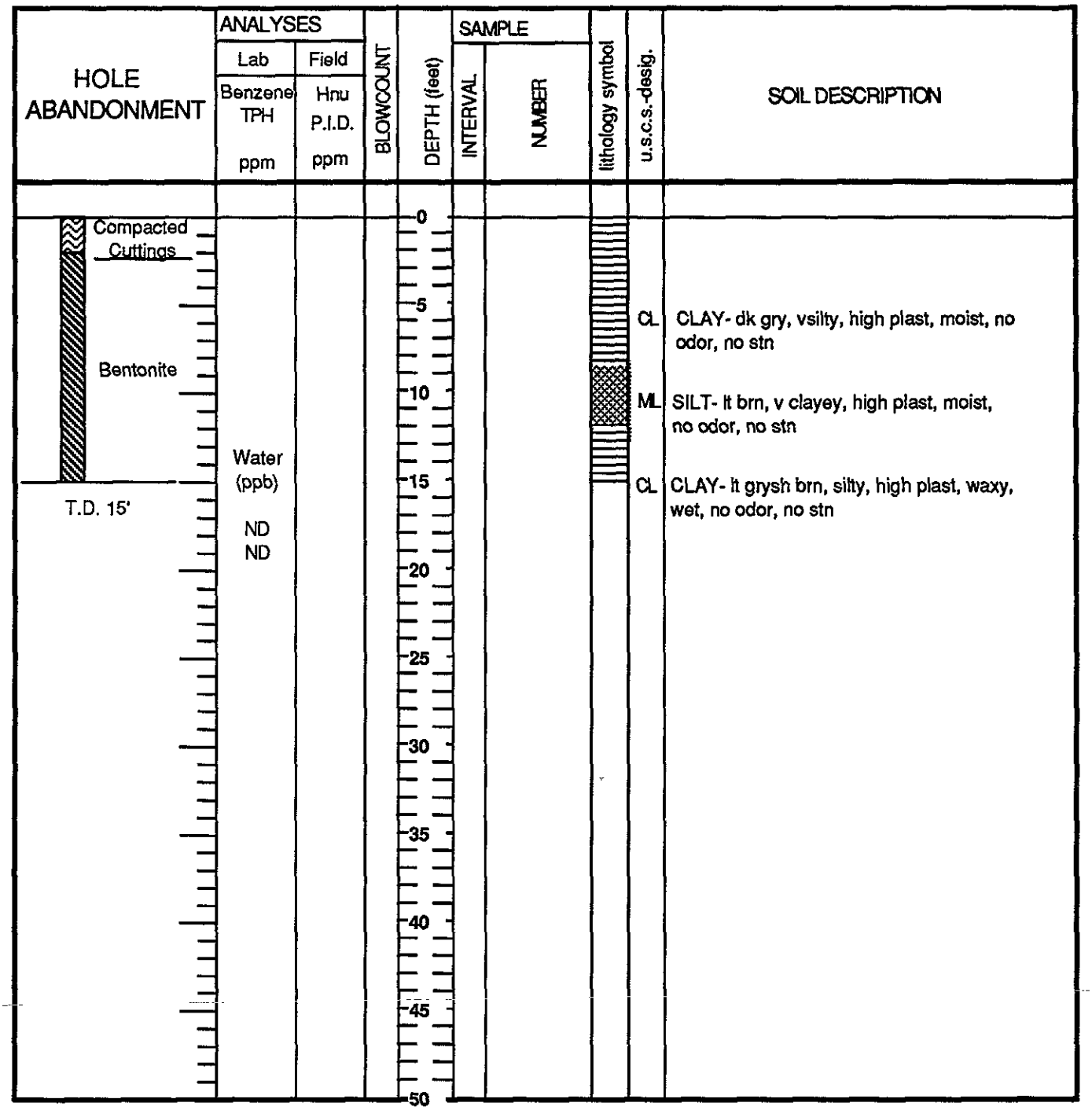
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:

LOG OF BORING B-9

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 15 ft
DATE DRILLED: 11-30-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 6 inch
WATER ENCOUNTERED AT: 5.5 ft

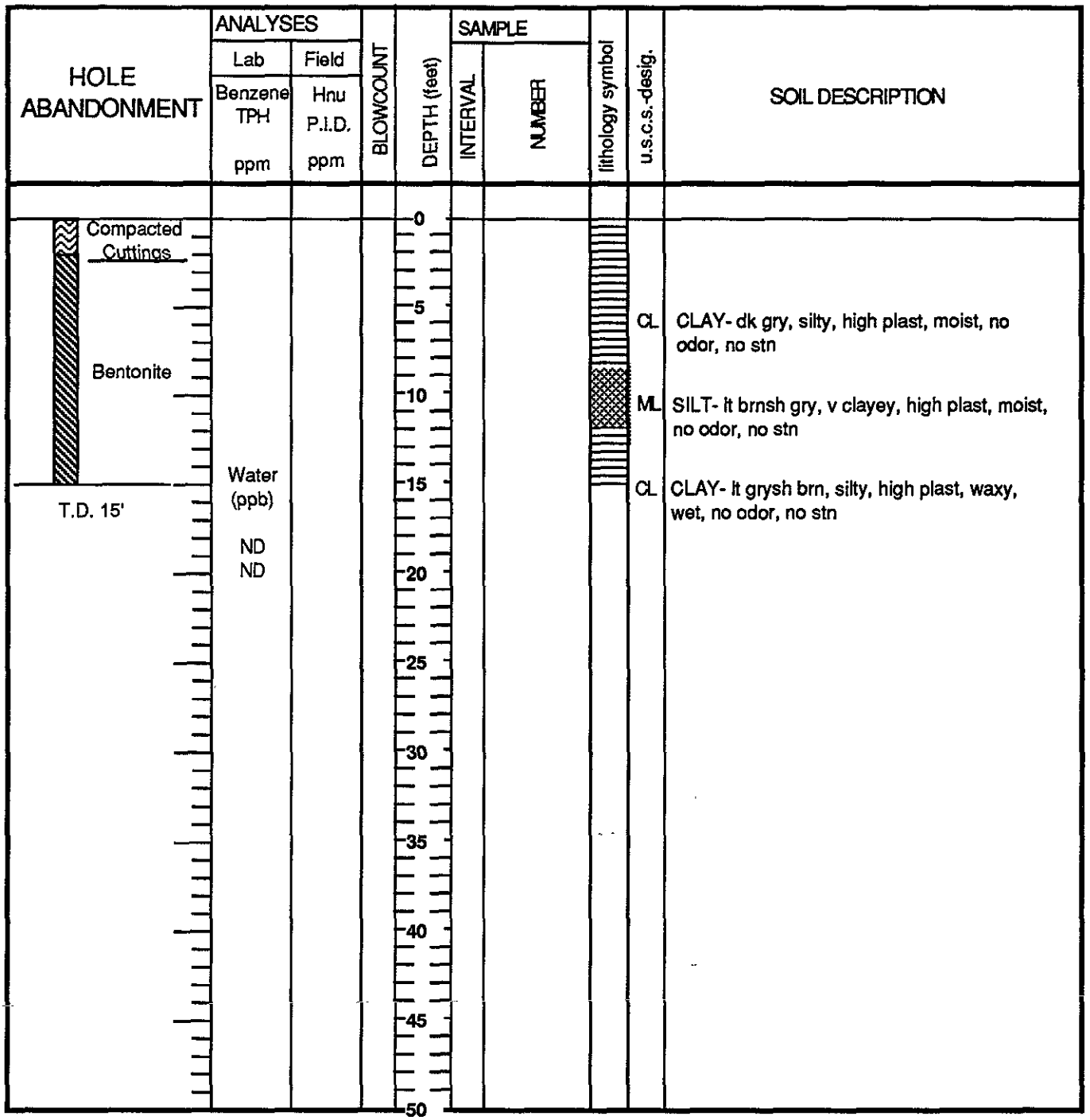
GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:

LOG OF BORING B-10

PLATE



SURFACE ELEVATION: 328.2 ft
TOTAL DEPTH: 15 ft
DATE DRILLED: 11-30-89

LOGGED BY: TCR
SUPERVISED BY: RJY
DIAMETER of BORING: 6 inch
WATER ENCOUNTERED AT: 5.5 ft

GROUNDWATER RESOURCES, INC.
(805)835-7700
environmental/geotechnical services

PROJECT NUMBER: 55029

LOCATION:

LOG OF BORING B-11

PLATE

APPENDIX D

Sampling Protocol

RESNA INDUSTRIES INC.
1500 SOUTH UNION AVENUE
BAKERSFIELD, CALIFORNIA 93307

SAMPLING PROTOCOL
QUALITY ASSURANCE & QUALITY CONTROL

(QAQC)

Revised April 1991

TABLE OF CONTENTS

TABLES

RESNA Industries Inc. (RESNA) has adopted the following Site Investigation Quality Assurance/ Quality Control (QA/QC) program intended to facilitate the acquisition of accurate and reliable data. Environmental data gathered during the investigation shall be collected and analyzed following procedures prescribed in the Quality Control Program. A Quality Assurance Program has been established to assure that the Quality Control Program is effective. Both programs are necessary to provide accurate data and documentation for investigations and laboratory analyses. The following field and laboratory procedures shall be implemented to ensure that QA/QC objectives are met.

1.0 RECORDING OF FIELD DATA

All information pertinent to the field investigation shall be kept in a field log book. In addition, boring log and chain-of-custody comprise the field documents in which all of the pertinent information about bore hole soil samples are recorded. Information to be documented includes at least the following:

- Sample number.
- Locations of sample collection.
- Soil boring or well numbers, as applicable.
- Depths at which samples were obtained.
- Names of collectors.
- Dates and times of collection.
- Purpose of sample.
- Sample distribution (e.g., laboratory, archive, etc.).
- Field observations.
- Field measurements (e.g., PID readings, pH, conductivity, water levels).
- Other data records (e.g., development log, soil sampling report, well log, etc.).

2.0 SAMPLE CONTAINERS

Groundwater samples shall be placed in containers supplied by RESNA or an analytical laboratory. Table 1 summarizes the required sample containers.

Soil samples shall be collected in either 8-once widemouth glass jars with screw-on caps lined with teflon or in brass or stainless steel tubes (Table 1). Screw-on caps for the tubes shall be fitted with teflon liners. Tubes shall be tightly capped and sealed with integrity tape.

3.0 QUALITY CONTROL OF WATER SAMPLES

A QC program independent from the laboratory's program shall be maintained. The program entails submittals of travel blanks, duplicates, and field blanks to a certified laboratory. No spiked samples shall be supplied from the field; the laboratory in-house QC program shall include analysis of spiked samples. Field blanks shall be assigned independent sample numbers and made indistinguishable from non quality control samples.

3.1 Travel Blanks

When sampling groundwater, travel blanks shall be used to detect the introduction of contaminants during transportation from the field to the laboratory. The travel blanks shall be provided by RESNA or the analytical laboratory. They shall be taken to the field and accompany the collected groundwater samples to the laboratory for analysis. The blanks shall consist of deionized water or analytically confirmed organic-free water. The blank is numbered, packaged, and sealed in the same manner as the other samples.

3.2 Duplicates

Five percent (1 in 20) or one (1) per sampling set, whichever is more, shall be submitted to the laboratory for analysis as duplicates. Therefore, if a job site has one (1) and up to twenty (20) wells to be sampled, one (1) duplicate shall be analyzed. If twenty-one (21) wells are to be sampled then two (2) duplicates shall be analyzed. The duplicate is acquired by filling two sample bottles from the same well bailer. If more than one bailer volume is required, each bailer volume shall be split between containers. The duplicates shall be labeled as duplicate without identifying the actual well location either on the chain-of-custody or on the actual sample. The actual well location of the duplicate shall be noted in the field log book.

3.3 Field Blanks

Field blanks shall be prepared and submitted to the analytical laboratory for analysis on the same frequency stated for duplicates. A field blank shall be acquired by sampling the deionized water used to rinse the sampling bailer in between sample points.

3.4 Sample Preservation

Sample containers shall be pre-cooled and transported to the site in coolers. All samples shall be preserved as indicated on Table 1 and placed in coolers immediately after collection. Sealed chemical ice shall be used in the coolers to maintain samples at a temperature of 4 degrees celsius. A high level recording thermometer shall accompany the samples during transport conditions.

4.0 GROUNDWATER SAMPLING PROTOCOL

Immediately prior to sampling, the depth to water (DTW) in the well shall be recorded. If there is free product in the well, the thickness of product on top of the groundwater shall be measured using an interface probe.

If free product is detected, analysis of groundwater at the interface for dissolved product shall not be conducted. A product sample shall be collected for source identification. If all free product cannot be removed, an interval-specific sampling device may be utilized to collect a sample from below the

zone of free product. The well shall be purged until indicator parameters (temperature, conductivity and pH) are stabilized. This shall entail the removal of at least four well-casing volumes by bailing or pumping. The criteria for determining well-casing volumes and temporary storage of purged water is outlined in Section 9.0, (Well Development Protocol). The indicator parameter measurements shall be taken both before and after purging of each well-casing volume. Once the well is purged and indicator parameters have stabilized, a sample may be collected after the water level has reached 80 percent of its initial elevation. Where water level recovery is slow, the sample may be collected after stabilization is achieved and enough water is present to fill sample containers.

Cross contamination from transferring pumps (or bailers) from well to well shall be avoided by utilizing dedicated equipment. Where this is not feasible, thorough cleaning of equipment shall be performed between sampling rounds. Sampling shall proceed from the least contaminated to the most contaminated well, if that information is available before sample collection, or if it is indicated by field evidence. Where several types of analysis shall be performed for a given well, individual samples shall be collected in the following order:

1. Volatile organics
2. Purgeable organics
3. Purgeable organic halogens
4. Total organics
5. Total organic halogens
6. Extractable organics
7. Total metals
8. Dissolved metals
9. Phenols
10. Cyanide

The specific analytical methods to be utilized for the common volatile/semi-volatile analyses are shown on Table 2.

Duplicate samples shall be transferred to vials or containers that meet Regional Board specifications (Table 1). Groundwater from the bailer shall be transferred to the sample container by allowing the fluid to flow slowly along the sides of the vessel. All containers shall be filled above the top of the opening to form a positive meniscus. No head space should be present in the sample container once it is sealed. After the vial is capped it should be inverted to check for air bubbles. If bubbles are present the sample should be discarded and replaced. If it is not possible to collect a sample without air bubbles, the problem shall be noted in the field log book.

5.0 CHAIN-OF-CUSTODY PROCEDURES

5.1 Sample Labels

Each sample container shall be labeled prior to filling to prevent misidentification. The label shall contain at least the following information:

- Sample number which uniquely identifies the sample
- Project title or number
- Location of sample collection
- Soil boring or well number, as applicable
- Name of collector
- Date and time of collection

5.2 Chain-of-Custody Record and Sample Analysis Request Form

A chain-of-custody record for each container or sample shall be used to track possession of the samples from the time they were collected in the field until the time they are analyzed in the laboratory.

The chain-of-custody record shall contain the following information:

1. Site name or project number
2. Signature of collector
3. Date and time of collection
4. Sample identification number(s)
5. Number of containers in sample set
6. Description of sample and container(s)
7. Name and signature of persons, and the companies or agencies they represent, who are involved in the chain-of-custody
8. Inclusive dates and times of possession
9. Type of analysis requested

5.3 Delivery of Samples to Laboratory

Samples shall be delivered to the laboratory on a daily basis. Samples shall be maintained at approximately 4 degrees celsius for shipping. Shipping containers shall be sealed with security tape to assure sample integrity during shipping. Delivered samples shall be accompanied by a chain-of-custody record. The laboratory shall note on the chain-of-custody that samples were properly preserved and security tape was intact upon arrival.

6.0 SAMPLING AND DRILLING EQUIPMENT DECONTAMINATION

Prior to arriving at the sampling site, all sampling equipment shall be cleaned with laboratory grade detergent (Alconox or equivalent) and rinsed twice with tap water. This procedure shall also be carried out on-site before sampling of any additional monitoring wells.

All decontamination shall be conducted on an impermeable surface and all decontamination effluent shall be contained. All surfaces of the equipment shall be thoroughly decontaminated using a steam cleaner. The equipment shall be placed on a drying rack for air drying. The water used for decontamination shall be stored in containers certified for hazardous materials storage and disposed of in an approved manner.

7.0 FIELD EQUIPMENT CALIBRATION AND MAINTENANCE

The following measuring equipment may be used during the Site Investigation and/or sample collection. Calibration procedures and frequency are listed for each piece.

Soil Borings and Well Dimensions - Steel and coated cloth tape. Calibration: none.

Water Level Measurements in Wells - Water Sensing tape. Calibration: Manufacturer supplied temperature correction shall be applied as applicable for field conditions. Electrical well sounders.

Total Organic Vapors - Foxboro OVA, flame ionization detector (FID). Calibration: Daily field calibration using manufacturer recommended procedures.

Organic Vapors - Photovac, photoionization detector (PID). Calibration: Daily field calibration using an isobutylene standard as per manufacturer instructions.

Groundwater pH Measurement - Digital pH meter. Calibration: Standard pH solutions of 4, 7, and 10 shall be utilized for daily field calibration according to manufacturer instructions.

Electrical Conductivity - Electrical conductivity meter. Calibration: Factory-calibrated annually and periodically calibrated against laboratory prepared standard calibration solution.

Water Temperature - Alcohol or digital thermometers. Calibration: Factory-calibrated once.

Combustible Gas/Oxygen - Gastech LEL, combustible gas/oxygen meter calibration: Factory calibrated, field calibrated monthly, zeroed daily according to manufacturer's instructions.

Miscellaneous Measuring Devices - Calibration procedures for any other measuring device used shall be documented at the request of the regulatory authority.

All equipment shall be checked before use and replaced as necessary. Instrument manuals and an instrument log book shall accompany equipment into the field. Any calibrations, repairs or related information shall be recorded in the log book.

8.0 GROUNDWATER MONITORING PROTOCOL

Monitoring of depth to water and free product thickness within wells at the site shall be conducted using an interface probe or conductivity meter. For consistency, all measurements shall be taken from

the north side of the wellhead at the survey mark. To assess potential infiltration of fine-grained sediments, total well depth shall also be sounded.

Newly installed wells shall be allowed to stabilize for 24 hours after development prior to free product inspection. A clean bailer or sampler shall be used for visual inspection of the groundwater in order to note sheens (difficult to detect with the interface probe), odors, microbial action and sediments.

To reduce the potential for cross contamination between wells, the monitoring shall take place in order from the least to the most contaminated, if known. Wells containing free product shall be monitored last. Between each well monitoring, the equipment shall be decontaminated.

Water level data collected from the wells shall be used to develop a groundwater contour map for the project site. Groundwater flow shall be estimated to be perpendicular to equipotential lines drawn on the map.

9.0 WELL DEVELOPMENT PROTOCOL

Groundwater monitoring wells shall be surged and developed prior to setting the surface seal. Approximately 3 to 5 times the volume of water in the casing shall be withdrawn if possible. Casing volumes shall be calculated in the following manner:

Volume of Schedule 40 PVC Pipe

Diameter (inches)	I.D. (inches)	Volume (gal/linear ft.)
2	2.067	0.17
4	4.026	0.66

If the aquifer is slow to recharge, development shall continue until recharge is too slow to practically continue. The volume of water produced, versus time, shall be recorded.

All withdrawn groundwater shall be stored on-site in 55-gallon waste drums unless permission is granted by the appropriate regulatory agency to discharge the water to the ground surface or sanitary sewer. Drummed water shall be labeled with the source of the water to help ensure appropriate disposal based on contamination levels.

10.0 QUALITY CONTROL OF SOIL SAMPLES

10.1 Travel Blanks

Travel blanks shall not be used for soil sample transportation due to problems associated with obtaining a blank material.

10.2 Duplicates

The effort to collect duplicate soil samples from a bore hole may be compromised by variations of soil texture. This shall be minimized by selecting a duplicate sample location as near as possible to the actual sample. In a split-spoon sampler the lowest tube shall be a duplicate when needed. The middle tube shall be the actual sample. All soil sample tubes shall be marked to show from which end the tube is to be sampled. The ends, where the two sample tubes joined shall be marked. The laboratory shall be instructed to sample the marked end. The upper tube shall be used for soil characterization.

The frequency with which soil duplicates are taken shall be at a minimum five (5) percent (1 in 20). In bore-holes the samples are best collected below the five foot depth in zones of either low or no transition.

When sampling soil piles or tank pits the top inch or two shall be remove before sampling. Efforts shall be made to avoid areas where soil texture changes. Fill the sample jar completely full avoiding any unnecessary head space in the sample jar.

Duplicate soil samples shall be labeled as duplicate without any other identification. A record of its actual sampling point shall be kept in the field log book.

10.3 Field Blanks

A soil field-blank from a bore hole would be best sampled from the top of the bore hole i.e. the first sample depth (not to be greater than five feet) and only if there is no indication of contaminates. The blank should be labeled as to the boring number, depth, and B for blank. For example, a blank obtained from soil boring number two (2), at a depth of five feet would be labeled as SB2-5B. The frequency of blanks may different than that of duplicates, but when possible they shall be of the same frequency, five (5) percent (1 in 20).

A blank from a soil pile or tank pit shall be taken from the surface material only. It shall be taken in a zone where no contamination is indicated.

11.0 SOIL SAMPLING PROTOCOL

11.1 Sample Collection During Drilling Activities

A proposal shall be submitted to the lead Regulatory Authority with proposed boring/sampling locations. The exact location and number of borings at each site shall be determined in the field by the Project Geologist/Engineer.

Prior to arriving at the sample site, the drill rig/augers shall be steam cleaned and all sample equipment shall be cleaned. Cleaning between samples shall be conducted on-site on all sampling equipment.

Soil samples shall be obtained using a California modified split-spoon sampler containing three, six inch long, two inch diameter brass tubes. The sampler shall be driven 18 inches ahead of the hollow stem auger by a 140-pound hammer with a 30-inch drop in accordance with American Society for Testing and Materials (ASTM Method D 1586-84) for split-barrel sampling of soil and (ASTM Method D 1587-83) for thin-walled tube sampling of soils. The blows required to drive the sampler each six-inch interval shall be recorded on the boring log. The sampler shall be removed from the boring and opened to reveal the brass tubes. The middle tube shall be covered with teflon and plastic end caps, taped, labeled, and placed into a cooler containing frozen chemical. A high level temperature recording thermometer shall accompany sample shipments to ensure proper temperature maintenance. The samples shall be delivered to a state certified laboratory, with a chain-of-custody, following all protocols, within 48 hours of sampling.

Soil in the uppermost brass tube shall be described according to ASTM standard practice for physical description and identification of soils (ASTM Method D 2488-84). Stratigraphic, genetic and other data/interpretations shall also be recorded on a log prepared for each boring/well. The second sample tube may be used with the lowermost tube for preparation of duplicates.

Soil samples shall be collected at five foot intervals, at significant changes in lithology and intervals of obvious contamination in order to develop a complete profile of soil contamination.

11.2 Sample Collection During Tank Removal

Soil samples shall be collected as soon as possible after removal of the tank. Where feasible, all preparations for soil sampling shall be made prior to tank removal. Soil samples collected from a backhoe bucket or directly from the excavation floor shall be collected in glass sampling jar with a Teflon lined screw cap. When sampling, the jar should be filled with soil as completely as possible.

11.3 Sampling from Soil Piles or Shallow Soil Pits

Soil samples shall be collected and transported from excavated material in the manner described in the previous section, however, a backhoe shall not be utilized. If composite samples are collected, four sample jars shall be collected for every 50 cubic yards of material to be sampled unless otherwise specified by the lead regulatory agency. The samples shall be composited by the state certified analytical laboratory personnel prior to testing.

TABLE 1

Sample Containers, Holding Times and Preservation

Parameter	Matrix	Container	Holding Time	Preservation
Total Petroleum Hydrocarbons	Soil	3" stainless steel or brass cylinder	14 days[1] 40 days[3]	4°C
	Water	(2) 40ml glass vial teflon-faced silicon septum	7 days[1] 14 days[2]	4°C, HCl to pH 2
Benzene Toluene Xylene Ethylbenzene	Soil	3" stainless steel or brass cylinder	14 days[1]	4°C
	Water	(2) 40ml glass vial teflon-faced silicon septum	7 days[1] 14 days[2]	4°C, HCl to pH 2
Purgeable Hydrocarbon	Soil	3" stainless steel or brass cylinder	14 days[1]	4°C
	Water	(2) 40ml glass vial teflon-faced silicon septum	7 days[1] 14 days[2]	4°C, HCl to pH 2
Organiclead	Soil	3" stainless steel or brass cylinder	14 days[1]	4°C
	Water	(2) 40ml glass vial *teflon-faced silicon* septum	14 days[1]	4°C
Ethylene Dibromide	Soil	3" stainless steel or brass cylinder	14 days[3]	4°C
	Water	(2) 40ml glass vial teflon-faced silicon septum	14 days[1]	4°C
Polynuclear Aromatic Hydrocarbons	Soil	8 oz. wide mouth glass with teflon seal	14 days[2] 40 days[3]	4°C
	Water	1000 ml amber glass with teflon seal	7 days[1] 40 days[3]	4°C

Notes:

[1] Maximum holding time for sample (sample must be extracted within this time or analyze if extraction is not required).

[2] Maximum holding time for sample if preserved with HCl,
Caution: HCl is a strong acid, avoid eye and skin contract

[3] Maximum holding time for extract (sample must be analyzed within this time)

TABLE 1

Sample Containers, Holding Times and Preservation

Parameter	Matrix	Container	Holding Time	Preservation
Poly-Chlorinated Biphenyls	Soil	8 oz. wide mouth glass with teflon seal	7 days[1] 40 days[3]	4°C
	Water	1000 ml amber glass with teflon seal	7 days[1] 40 days[3]	4°C
Total Metals	Soil	3" stainless steel or brass cylinder	6 months	
	Water	1000 ml plastic	6 months	pH < 2 HNO_3
Dissolved Metals	Water	1000 ml plastic .45 Micron Filtration	6 months	pH < 2 HNO_3
Pesticides	Soil	3" stainless steel or brass cylinder	14 days[3]	4°C
	Water	1000 ml amber glass	7 days[1] 40 days[3]	4°C

Notes:

[1] Maximum holding time for sample (sample must be extracted within this time or analyze if extraction is not required).

[2] Maximum holding time for sample if preserved with HCl,
Caution: HCl is a strong acid, avoid eye and skin contract

[3] Maximum holding time for extract (sample must be analyzed within this time)

TABLE 2

Laboratory Test Methodology
Underground Tank Sites

Type Hydrocarbon	Soil Analysis		Water Analysis	
Unknown Fuel	TPH-G TPH-D BTX&E	GCFID(5030) GCFID(3550) 8020 or 8240	TPH-G TPH-D BTX&E	GCFID(5030) GCFID(3510) 602 or 624
Leaded Gas	TPH-G BTX&E	GCFID(5030) 8020 or 8240	TPH-G BTX&E	GCFID(5030) 602 or 624
		——Optional——		
	TEL EDB	DHS-LUFT DHS-AB1803	TEL EDB	DHS-LUFT DHS-AB1803
Unleaded Gas	TPH-G BTX&E	GCFID(5030) 8020 or 8240	TPH-G BTX&E	GCFID(5030) 602 or 624
Diesel	TPH-D BTX&E	GCFID(3550) 8020 or 8240	TPH-D BTX&E	GCFID(3510) 602 or 624
Jet Fuel	TPH-D BTX&E	GCFID(3550) 8020 or 8240	TPH-D BTX&E	GCFID(3510) 602 or 624
Kerosene	TPH-D BTX&E	GCFID(3550) 8020 or 8240	TPH-D BTX&E	GCFID(3510) 602 or 624
Fuel Oil	TPH-D BTX&E	GCFID(3550) 8020 or 8240	TPH-D BTX&E	GCFID(3510) 602 or 624
Chlorinated Solvents	Cl HC BTX&E	8010 or 8240 8020 or 8240	Cl HC BTX&E	601 or 624 602 or 624
Non Chlorinated Solvents	TPH-D BTX&E	GCFID(3550) 8020 or 8240	TPH-D TX&E	GCFID(3510) 602 or 624
Waste Oil or Unknown	TPH-G TPH-D BTX&E O & G Cl HC	GCFID(5030) GCFID(3550) 8020 or 8240 418.1 8010 or 8240	TPH-G TPH-D BTX&E O & G Cl HC	GCFID(5030) GCFID(3510) 602 or 624 418.1 601 or 624
Metals: Cadium (Cd) Cromimum (Cr) Lead (Pb) Zinc (Zn)	ICAP or AA		ICAP or AA	
Polychlorinated Biphenyls (PCB) Poly Nuclear Aromatic (PNA) (PCP)	8270		8270	

TABLE 3

ABBREVIATIONS

TPH-G	=	Total Petroleum Hydrocarbon as Gasoline
TPH-D	=	Total Petroleum Hydrocarbon as Diesel
BTX&E	=	Benzene, Toluene, Xylenes, & Ethylbenzene
GCFID	=	Gas Chromatograph with a Flame Ionization Detector
Cl HC	=	Chlorinated Hydrocarbons
ICAP	=	Inductively Coupled Argon Plasma
AA	=	Atomic Absorption
O&G	=	Oil & Grease
DHS	=	Department of Health Services
AB1803	=	Assembly Bill 1803
418.1	=	EPA Method for Total Recoverable Petroleum Hydrocarbons
601	=	EPA Method for Volatile Halogenated Ogranics
602	=	EPA Method for Volatile Aromatics
624	=	EPA Method for Purgeables Halogenated & Aromatics
3510	=	EPA Method Extraction by Liquid-Liquid Separatory Funnel
3550	=	EPA Method Extraction by Sonication
5030	=	EPA Method Extraction by Purge and Trap
8010	=	EPA Method for Halogenated Volatile Organics
8015	=	EPA Method for Nonhalogenated Volatile Organics
8020	=	EPA Method for Aromatic Volatile Organics
8240	=	EPA Method for Volatile Organics/Mass Spectrometry
8270	=	EPA Method for Semivolatile Organic/Capillary Column