

MONITORING WELL INSTALLATION REPORT

TEXACO SERVICE STATION
15101 Freedom Avenue
San Leandro, California

JUN 11 2002

June 5, 2002

Project 2552

Prepared for

Mr. Mohammed Pazdel
Texaco Service Station
San Leandro, California

Prepared by

SOMA Environmental Engineering, Inc.
2680 Bishop Drive, Suite 203
San Ramon, California



ENVIRONMENTAL ENGINEERING, INC
2680 Bishop Drive • Suite 203 • San Ramon, CA 94583
TEL (925) 244-6600 • FAX (925) 244-6601

June 6, 2002

Mr. Scott O. Seery
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

JUN 11 2002

Subject: STID 4473/RO0000473
Texaco Gasoline Service Station (Formerly Freedom ARCO Station)
Site Address: 15101 Freedom Avenue, San Leandro, California

Dear Mr. Seery:

Enclosed for your review is SOMA's report entitled "Monitoring Well Installation" at the subject site.

Thank you for your time in reviewing this report. If you have any questions or comments, please call me at (925) 244-6600.

Sincerely,


Mansour Sepehr, Ph.D., P.E.
Principal Hydrogeologist

Enclosure

cc: Mr. Mohammad Pazdel w/enclosure
Mr. Farrokh Hosseinyoun w/enclosure

Certification

This report has been prepared by SOMA Environmental Engineering, Inc. on behalf of Mr. Mohammad Pazdel, the property owner of 15101 Freedom Boulevard, San Leandro, California to comply with Alameda County Health Care Services' letter dated March 11, 2002.



Mansour Sepehr, Ph.D., P.E.
Principal Hydrogeologist



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1.0 INTRODUCTION

This report has been prepared by SOMA Environmental Engineering, Inc., (SOMA) on behalf of Mr. Mohammed Pazdel, the property owner. The subject property is known as the Texaco Service Station. As shown in Figure-1, the property is located at 15101 Freedom Avenue, at the intersection of Fairmont and Freedom Avenues in San Leandro, California (the "Site"). This investigation has been conducted in accordance with the approved workplan dated October 2, 2001. The workplan was prepared in response to the Alameda County Health Care Services' (ACHCS) letter dated August 23, 2001.

1.1 Background

Since the 1960's, the Site has been used as a gasoline service station. In 1985, Mr. Mohammad Pazdel purchased the business and in 1992 he purchased the property from Mr. Mohammad Mashhoon. From 1985 until 1997 when Mr. Pazdel sold the business, the Site operated as the "Freedom ARCO Station". To comply with the underground storage tank (UST) upgrade regulation in 1999, three 10,000-gallon single walled USTs were removed and replaced by new double-walled fuel tanks. During the UST upgrade, petroleum hydrocarbon contaminants were detected in subsurface soils beneath the old USTs.

This report describes the installation of five groundwater monitoring wells at the Site and analytical results of soil samples collected during the installation of the groundwater monitoring wells.

1.2 Previous Activities

On May 20, 1999, Geo-Logic oversaw the removal of three 10,000-gallon USTs, approximately 250 feet of product piping, and six dispensers at the Site. Paradiso Mechanical, Inc. removed and over-excavated the old USTs. The on-site overseeing agency was the ACHCS.

After excavation and removal, the three USTs and product piping were transported to the ECI facility in Richmond, California for proper disposal. Soil samples were collected from beneath the USTs, product piping, and dispensers by Geo-Logic on May 20 and May 21, 1999. On May 20, 1999, seven soil samples (T1W, T2W, T3W, T1E, T2E, T3E, and an additional soil sample at T1W) were collected from the west and east sides of the tank excavation pit ranging in depth from 12 to 14 feet below ground surface (bgs). In addition, six soil samples (P1, P2, P4, P5, P6, and P7) were collected from beneath the dispensers ranging in depth from 2.5 to 3 feet bgs. One soil sample (P3) was collected beneath the product lines at 2.5 feet bgs. On May 21, 1999, eight additional soil samples (P8, P9, P10, P11, P12, P13, P14, and P15) were collected beneath the product piping and in the area of the dispensers at depths ranging from 3 to 3.5 feet bgs. Stockpile soil samples were also collected on May 21, 1999.

On June 2, 1999, additional soil samples were collected during over-excavation of the product piping and bottom of tank excavation pit. An additional soil sample (P12) was collected beneath the product piping at a depth of 5 feet bgs. Three additional soil samples were collected in the western portion of the tank cavity and ranged in depth from 16.5 to 24.5 feet bgs to define the vertical extent of hydrocarbon contamination.

The soil samples collected during the removal and over-excavation activities were submitted to Calcoast Analytical in Emeryville, California. Soil samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) using EPA Method 8015, benzene, toluene, ethylbenzene and xylene (BTEX) and Methyl tertiary Butyl Ether (MtBE) using EPA Method 8020, the presence of MtBE was confirmed using EPA Method 8260B, and total lead using EPA Method 6010A.

The concentration of TPH-g in soil samples ranged from 0.76 mg/Kg (P3-2.5 ft bgs) to 4,000 mg/Kg (T1W-24.5 ft bgs). Benzene concentrations ranged from 28 mg/Kg (T1W-13.5 ft bgs) to non-detectable levels (P2 through P6, and P14) at depths ranging from 2.5 to 3 feet bgs.

On July 7, 1999, Paradiso Mechanical, Inc. installed a 20,000-gallon gasoline UST, an 8,000-gallon gasoline UST, and a 6,000-gallon diesel tank inside the tank cavity.

In July 2001, CSS Environmental Services of San Rafael, California (CSS), at the request of the ACHCS, conducted an additional site investigation to further investigate potential petroleum hydrocarbon contamination discovered during the removal and upgrade of USTs at the Site. During that investigation, CSS drilled five hydropunches (SB-1 through SB-5) using the direct-push method. The soil borings were advanced to the maximum depth of 31 feet. It appeared that the groundwater beneath the Site is semi-confined so that after drilling, groundwater stabilized at depths of 17 to 20 feet bgs. The results of that investigation indicated that petroleum-impacted soils are generally encountered below a 19-foot depth interval and they are predominantly present within the capillary fringe, just above the saturated zone. The maximum concentrations of TPH-g and BTEX in soil samples collected between 19 and 25.5 feet bgs were 470, 2.6, 16, 12, and 73 mg/Kg, respectively. MtBE was not detected in any of the soil samples at the analytical method reporting limit of 0.005 mg/Kg. The maximum concentrations of TPH-g and BTEX in groundwater samples collected from the soil borings were 83, 19, 1.8, 1.5, and 73 mg/L, respectively. MtBE was detected in the groundwater at each of the borings except SB-4. The maximum reported concentration was 87 mg/L at SB-2.

2.0 SCOPE OF WORK

In a letter dated August 23, 2001, the ACHCS requested a workplan to conduct a subsurface investigation that would include the collection and testing of soil and groundwater samples in and around the location of the former USTs. Based on the ACHCS's request, the scope of work originally included delineation of the horizontal extent of MtBE in the soil and groundwater beneath the Site. However, elevated levels of petroleum hydrocarbons in the on-site groundwater indicate substantial offsite migration. With the high probability of offsite contamination migrating from the Site, the depth and areal extent of the petroleum hydrocarbon contamination cannot be properly delineated. SOMA's forthcoming Second Quarter 2002 Groundwater Monitoring Report will show the on-site extent of the groundwater contamination. Further investigations will be necessary to properly delineate the hydrocarbon plumes.

The purpose of this document is to report the details of the monitoring well installation and to determine the extent of the soil contamination at the Site. SOMA performed the following tasks:

- Task 1: Permit Acquisition and Preparation of Site Health and Safety Plan**
- Task 2: Installing Groundwater Monitoring Wells and Conducting Groundwater Sampling**
- Task 3: Laboratory Analysis**
- Task 4: Report Preparation**

3.0 FIELD ACTIVITIES

Prior to conducting field activities, SOMA obtained drilling permits from the Alameda County Public Works Agency (ACPWA) and prepared a site-specific Health and Safety Plan. The permits are presented in Appendix A.

3.1 Monitoring Well Borehole Sampling

A total of five monitoring well boreholes (MW-1 through MW-5) were drilled to a total depth of 30 feet bgs at locations shown in Figure 2. The monitoring well boreholes were drilled using hollow stem auger (HSA) technology in order to accommodate the 4-inch diameter monitoring well casings. Boreholes MW-1 and MW-5, located at the north and south ends of the Site, were continuously cored and relatively undisturbed soil samples were collected at 5-foot minimum depth intervals throughout those boreholes. Boreholes MW-3 and MW-4 were continuously cored below approximately 20 to 22 feet bgs with soil samples collected at 5-foot minimum depth intervals. Due to equipment failure during the drilling of Borehole MW-2, this borehole was continuously cored below 26 feet bgs.

SOMA's field geologist oversaw the drilling operation and logged all the monitoring well boreholes. The boreholes were cored by driving a Modified California Sampler into the soils using a 140-pound hammer with a 30-inch drop. Soil samples for laboratory analysis were collected by lining the sampler with stainless steel sleeves. After driving the sampler into the sedimentary formation, the sampler was withdrawn from the borehole and one representative soil-filled sleeve was removed from the sampling shoe. The ends of the sleeve were then covered with Teflon tape and plastic caps, labeled, placed in a re-sealable plastic bag and stored in a cold ice chest in order to minimize loss of any volatile compounds. The soil samples were delivered to a state-certified hazardous waste laboratory accompanied by a chain-of-custody record.

3.2 Sampling for Organic Carbon Content and Bulk Density

In a letter dated March 11, 2002, the ACHCS requested SOMA to collect a soil sample from the shallow vadose zone between 1 to 2 meters bgs for organic carbon and other related physical parameters. These parameters would be used for fate and transport modeling, if warranted.

In order to clear the monitoring well boreholes of utilities, the driller hand-augured each borehole to a depth of approximately 5 feet bgs. This procedure left only the 5- to 6-foot interval from which to collect a relatively undisturbed and representative soil sample. Due to the sampling technology, subsequent sampling at the 5- to 7-foot interval compressed the soil into the lower one or two 6-inch liners. The upper-most undisturbed soil-filled liner was labeled according to the depth below ground surface (MW-5@6.0') even though the soils most likely represent the 5 to 6' sampling interval. Because bulk density, organic carbon and lead analyses required two separate soil samples, one soil-liner from the six-foot depth (MW-5 @ 6.0') was selected for total organic carbon and lead and the next subjacent sample (MW-5 @ 9.0') was scheduled for bulk density. Two vertically adjacent soil samples from the saturated zone (MW-5 @ 19.5' and MW-5 @ 20.0') were also selected for these analyses.

3.3 Installation of Groundwater Monitoring Wells

The monitoring well boreholes were cased with threaded, factory-slotted and blank schedule 40 PVC pipes. The bottom 15 feet of each well casing consisted of 0.02 inch wide by 1.5-inch long slot size with 42 slots per foot. The upper 15 feet of each well consisted of blank PVC. A PVC cap was fitted to the bottom casing, without adhesives or tape, and the top of the casing was fitted with a locking well plug.

After the casing was set into the borehole, the monitoring well filter pack was emplaced by slowly pouring 17 feet of kiln-dried sand material into the annular space from the bottom of the borehole to approximately two feet above the

screened interval – spanning a height of 30 to 13 feet bgs. A one-foot thick bentonite plug was placed above this filter material, from 12 to 13 feet bgs, to prevent grout from infiltrating down into the filter material. Approximately one to two gallons of distilled water was then added to hydrate the bentonite pellets. After the bentonite seal was well hydrated, the well was sealed from the top of the bentonite layer to the surface with neat cement containing approximately 5% bentonite. Monitoring well construction details are shown in the Geologic Logs of Monitoring Well Boreholes attached as Appendix B.

3.4 Monitoring Well Development and Surveying

On May 1 and 2, 2002, SOMA's field crew developed the five groundwater monitoring wells. The field crew used a submersible 3-inch diameter Grundfoss™ pump and a stainless steel bailer to surge the wells and remove suspended sediments until the groundwater quality improved substantially and groundwater quality parameters stabilized. Well development details are presented in Appendix C.

On May 7, 2002 a California registered surveyor (Kier & Wright) surveyed the newly installed wells. The survey results, shown in Appendix D, will be used to determine the groundwater flow direction beneath the Site during the groundwater monitoring event. **SOMA field personnel sampled the five wells on May 10, 2002.** The results of the groundwater sampling will be presented in SOMA's Second Quarter 2002 Groundwater Monitoring.

3.5 Laboratory Analysis

The soil samples were analyzed for TPH-g, BTEX, and MtBE using EPA Methods 8015 Modified and 8021 followed by 8260B to confirm the presence of MtBE. Soil samples selected from the vadose and saturated zones were also analyzed for total organic carbon, total lead and bulk density. Due to elevated

levels of MtBE and benzene at this Site, this data may be used in conducting groundwater flow and chemical transport modeling.

4.0 RESULTS

The following are the results of this investigation during the installation of the groundwater monitoring wells in connection with the Site's geology/hydrogeology and results of the laboratory analyses on soil samples collected from the unsaturated and saturated sediments beneath the Site.

4.1 Lithology and Hydrogeology

Based on the monitoring well borehole logs, the lithologic sequence of underlying sediments generally consists of stiff to hard silty clay and clayey silt with intervening layers of medium dense to very dense sand/gravel sediments.

In boreholes MW-1 and MW-2, on the west side of the Site, silt/clayey sediments predominate with an occasional discontinuous layer of sand/gravel sediments. In these boreholes and borehole MW-4, below approximately 20 to 25 feet bgs, slight to moderate petroleum hydrocarbon odors were encountered that decreased substantially with depth in the underlying silty clay aquitard.

In boreholes MW-3, MW-4, MW-5, on the east side of the Site, a two- to nine-foot thick sand/gravel layer was encountered below approximate depths of 13 to 16 feet bgs. Below approximately 20 feet bgs, strong petroleum hydrocarbon vapors were encountered in boreholes MW-3 and MW-5 that also decrease substantially in the subjacent clay aquitard.

Groundwater was first encountered at approximately 25 to 29 feet bgs. Groundwater levels later stabilized to approximately 21 to 23 feet bgs, indicating the presence of confined/semi-confined water-bearing zones.

4.2 Soil Analytical Results

The following are the results of the laboratory analyses on soil samples collected from the subsurface and analyzed for petroleum hydrocarbons.

4.2.1 Petroleum Hydrocarbon Analyses

Curtis & Tompkins, Ltd., a state-certified laboratory, reported that soil samples collected from the capillary fringe contained TPH-g ranging from 23,000 micrograms per kilogram ($\mu\text{g}/\text{Kg}$) in Borehole MW-1 to 1,500,000 $\mu\text{g}/\text{Kg}$ in Borehole MW-5. Analytical soil results are summarized in Table 1 and presented in Appendix E.

The laboratory reported benzene ranging from non-detectable levels (less than 5.3 $\mu\text{g}/\text{Kg}$) in Borehole MW-2 to 750 $\mu\text{g}/\text{Kg}$ in Borehole MW-3. Elevated levels of toluene, ethylbenzene and xylenes and strong petroleum hydrocarbon odors were reported in soil samples collected from Borehole MW-5. At MW-5 toluene was reported to range from 30 $\mu\text{g}/\text{Kg}$ (Borehole MW-4) to 5,200 $\mu\text{g}/\text{Kg}$ (Borehole MW-5). Ethylbenzene was reported to range from 220 $\mu\text{g}/\text{Kg}$ (Borehole MW-1) to 20,000 $\mu\text{g}/\text{Kg}$ (Borehole MW-5) and xylenes were reported to range from 167 $\mu\text{g}/\text{Kg}$ (Borehole MW-2) to 67,000 $\mu\text{g}/\text{Kg}$ (Borehole MW-5).

MtBE was reported at non-detectable levels for all the soil samples. However, it should be noted that the laboratory reporting limits were as high as 2,000 $\mu\text{g}/\text{Kg}$.

4.2.2 Other Analytical Results

The laboratory reported that the selected vadose zone soil samples contained total organic carbon (TOC) at 0.13% (MW-5 @ 6.0') and 0.07% (MW-5 @ 10.0') and total lead at 1.6 mg/Kg (MW-5 @ 6.0') and 0.55 mg/Kg (MW-5 @ 10.0'). Bulk density for the vadose zone sample (MW-5 @ 9.5') was reported as 1.83 grams per cubic centimeter (g/cc), indicating a calculated porosity of 30.9%.

For the saturated zone soil sample (MW-5 @ 19.5'), the laboratory reported TOC content at 0.05% and total lead at 0.22 mg/Kg. Bulk density for the saturated zone sample (MW-5 @ 20') was 1.89 g/cc indicating a calculated porosity of 28.7%. Table 2 includes the results of the laboratory's analysis.

5.0 CONCLUSIONS and RECOMMENDATIONS

Results of this investigation indicate that the underlying lithology consists predominantly of clay/silt sediments with intervening sand/gravel layers. Sand/gravel sediments occur as thicker layers on the east side of the Site with strong petroleum hydrocarbon odors below approximately 20 feet bgs. The underlying clay aquitard has apparently mitigated downward migration of the petroleum hydrocarbons.

The observed rise in groundwater levels after drilling indicates that the Site is underlain by a confined to semi-confined water-bearing zone. The groundwater gradient/flow direction and groundwater analytical results will be presented and discussed in SOMA's forthcoming Second Quarter 2002 Groundwater Monitoring Report.

Elevated levels of petroleum hydrocarbons in the onsite groundwater indicate substantial offsite contamination. Based on the findings of this monitoring well installation, SOMA cannot properly delineate the depth and areal extent of the petroleum hydrocarbon contamination. The groundwater analytical results and the areal extent of on-site petroleum hydrocarbon contamination will be presented in SOMA's forthcoming Second Quarter 2002 Groundwater Monitoring Report.

Our recommendations will be presented in the Second Quarter 2002 groundwater monitoring report. However, our observation during the installation

of the groundwater monitoring wells indicated that the groundwater beneath the Site has been heavily impacted by the petroleum hydrocarbons. Due to the presence of elevated levels of TPH-g, toluene, ethylbenzene, and total xylenes in the most downgradient monitoring well of MW-5, it is believed that the extent of petroleum hydrocarbon contamination in the groundwater has already migrated beyond the Site's boundary.

6.0 REFERENCES

Geo-logic , Geotechnical and Environmental Consulting Services, June 11, 1999. "Report of Soil Sampling During Tank Removal and Station Upgrade".

CSS Environmental Services, Inc., August 15, 2001. "Preliminary Site Assessment for the Property Located at 15101 Freedom Avenue, San Leandro, California".

Alameda County Health Care Services, August 23, 2001. A Letter in Connection with Request for Conducting Subsurface Investigation.

SOMA Environmental Engineering, Inc., October 5, 2000. "Workplan to Conduct Monitoring Well Installation at Texaco Service Station Located at 15101 Freedom Avenue, San Leandro, California".

FIGURES

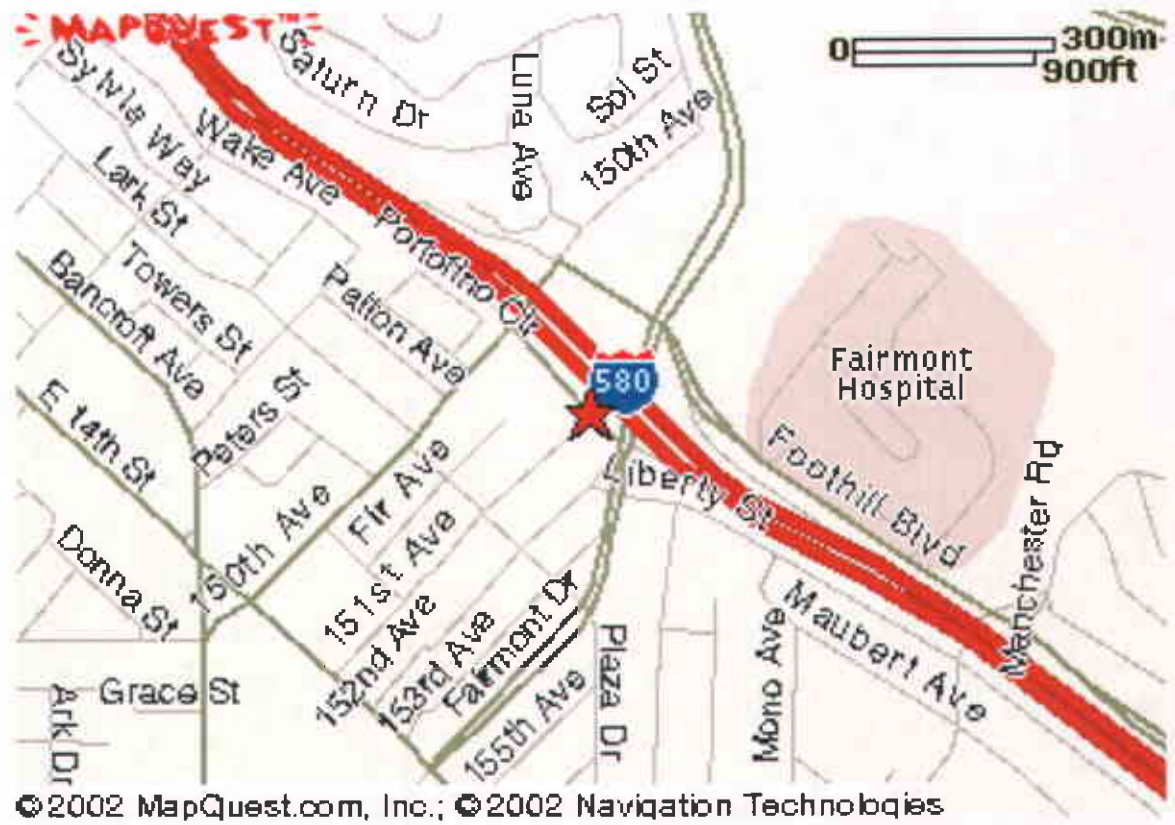


Figure 1: Site vicinity map

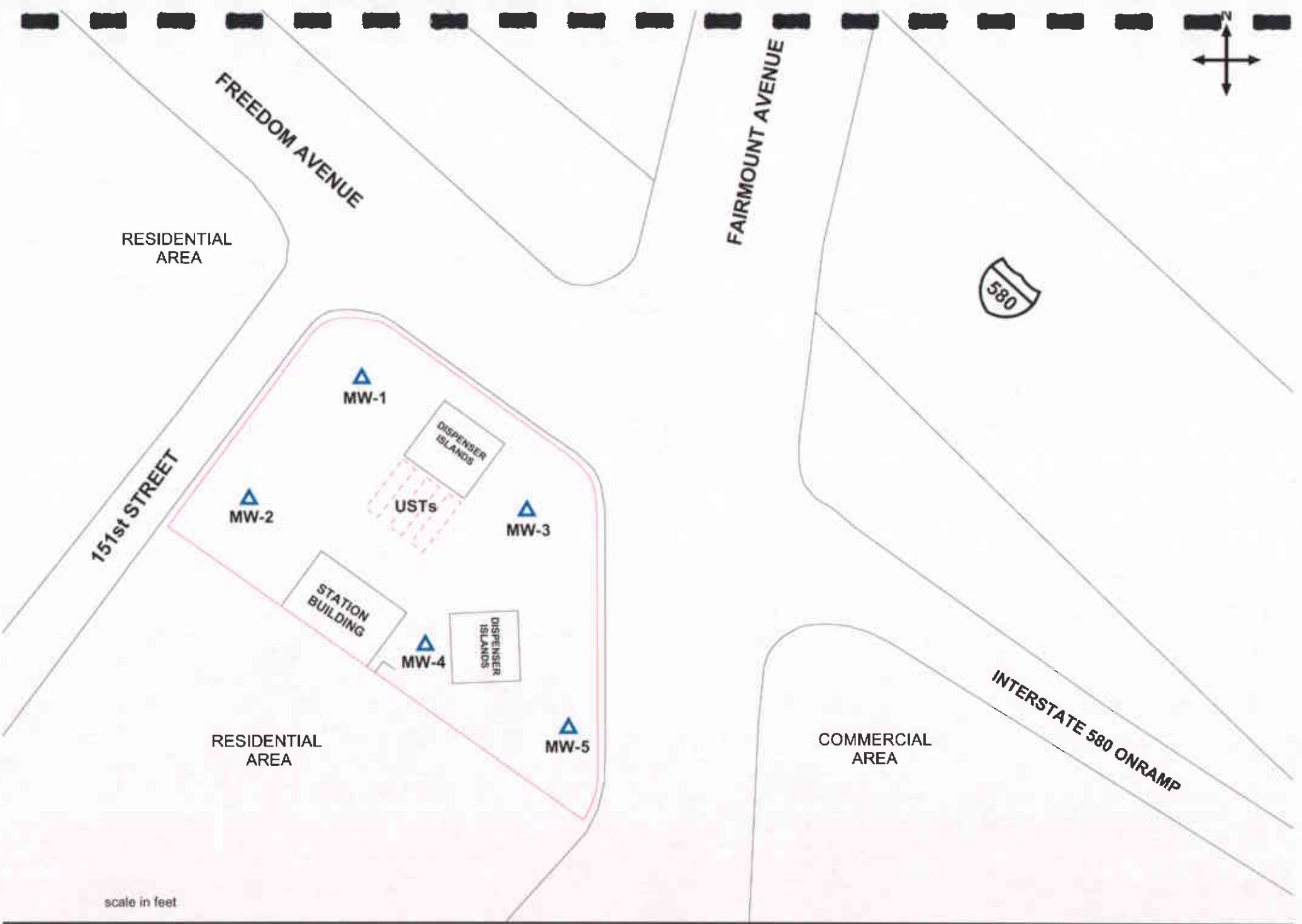


Figure 2: Site map showing locations of groundwater monitoring wells.

TABLES

Table 1
Soil Analytical Data : Petroleum Hydrocarbon Analyses
April 22 and 23, 2002
15101 Freedom Avenue, San Leandro, California

Sample Id.	TPH-g (ug/kg)	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl-Benzene (ug/kg)	Total Xylenes (ug/kg)	MtBE* (ug/kg)
MW-1 @ 26'	23,000	54	40 ^c	220	207	<5.2
MW-2 @ 21'	55,000	<5.3	190 ^c	720	167 ^c	<4.8
MW-3 @ 25'	910,000	750	2900	15,000	65,000	<1,000
MW-4 @ 26'	66,000	180	30 ^c	540	2,350	<5.2
MW-5 @ 23.5'	1,500,000	<500	5,200	20,000	67,000	<2000

Notes:

- * : MtBE confirmed by EPA Method 8260B except for MW-3@25.0' and MW-5@23.5' due to non-detectable results using EPA Method 8021
- < : not detected above laboratory reporting limits.
- C : Presence confirmed, but confirmation concentration differed by more than a factor of two.

Table 2
Soil Analytical Data : Fate and Transport Testing
April 22 and 23, 2002
15101 Freedom Avenue, San Leandro, California

Sample Id.	Bulk Density (g/cc)	Total Lead (mg/kg)	TOC (%)
MW-5 @ 6.0'	NA	1.60	0.13
MW-5 @ 9.5'	1.83	NA	NA
MW-5 @ 10.0'	NA	0.55	0.07
MW-5 @ 19.5'	NA	0.22	0.05
MW-5 @ 20.0'	1.89	NA	NA

Notes:

NA : Not analyzed

Appendix A

ACPWA Drilling Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY



WATER RESOURCES SECTION
851 FIDLER COURT, SUITE 201, MAYWARD, CA 94545-2651
PHONE (510) 670-5275 ANDREAS GODFREY FAX (510) 670-5262
(510) 670-5248 ADMIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE
LOCATION OF PROJECT 15101 Freedom Avenue
San Leandro, CA

FOR OFFICE USE
PERMIT NUMBER WD2-0325
WELL NUMBER _____
APN _____

California Coordinates Source _____ ft. Accuracy ± _____ ft.
CCN _____ ft. CCF _____ ft.
APN _____

CLIENT Name Mohammed Pazdel
Address 35840 Alcazar Phone _____
City East Fremont CA Zip 94536

APPLICANT Name Naser Pakou
SOMA Env Eng Fax 425 244 6601
Address 2680 Bishop Dr Phone 425 244 6600
City San Ramon CA Zip 94583

TYPE OF PROJECT
Well Construction _____ Geotechnical Investigation _____
Cathodic Protection General
Water Supply Contamination
Monitoring Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic Replacement Domestic
Municipal Irrigation
Industrial Other _____

DRILLING METHOD:
Mud Rotary Air Rotary Auger
Cable Other

DRILLER'S LICENSE NO. C57 710079
Waldman Dms ERP-73103

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum _____
Casing Diameter 4 in. Depth 30 ft.
Surface Seal Depth 12 ft. Number ONE MW-1

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum _____
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 4/22/02
ESTIMATED COMPLETION DATE 4/23/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-6B.

APPLICANT'S SIGNATURE [Signature] DATE 3/20/02

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL

1. A permit application should be submitted to us to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 30 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL

Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC

Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION

See attached.

G. SPECIAL CONDITIONS

APPROVED [Signature] DATE 3-20-02

Mar 20 02 02:21p

ALAMEDA COUNTY PUBLIC WORKS AGENCY



WATER RESOURCES SECTION
357 TURNER COURT, SUITE 200, HAYWARD, CA 94545-2437
PHONE (510) 670-3575 ANDREW COBERY FAX (510) 670-6262
(510) 670-3248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 15101 Freedom Avenue

San Leandro, CA
California Coordinates Source ft. Accuracy ± 0
CCN n. CCS n.
APN

CLIENT Name Mohammed Pazel
Address 35840 Alvarado
City Contra Fremont CA Zip 94536

APPLICANT Name Naser Pakrou
Address 3000 E. Hwy. Eng. Phone 925 241 6601
2680 Bishop Dr Phone 925 244 6600
City San Ramon CA Zip 94583

TYPE OF PROJECT
Well Construction Geotechnical Investigation
Cathodic Protection General
Water Supply Contamination
Monitoring Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic Replacement Domestic
Municipal Irrigation
Industrial Other

DRILLING METHOD:
Mud Rotary Air Rotary Auger
Cable Other

DRILLER'S LICENSE NO. C57 710079
Woodward Drilling exp. 7-31-03

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum Depth 30 ft.
Casing Diameter 4 in. Number ONE MW-2
Surface Seal Depth 12 ft.

GEOTECHNICAL PROJECTS
Number of Borings Maximum Depth ft.
Hole Diameter in.

ESTIMATED STARTING DATE 4/22/02
ESTIMATED COMPLETION DATE 4/23/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-58.

APPLICANT'S SIGNATURE [Signature] DATE 3/20/02

FOR OFFICE USE

PERMIT NUMBER 102-0326
WELL NUMBER
APN

PERMIT CONDITIONS

Circled Permit Requirements Apply

- A. GENERAL
 1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
 2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and insertion sketch for geotechnical projects.
 3. Permit is void if project not begun within 90 days of approval date.
- B. WATER SUPPLY WELLS
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
- D. GEOTECHNICAL

Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material, in areas of known or suspected contamination, tremie cement grout shall be used in place of compacted cuttings.
- E. CATHODIC

Fill hole above anode zone with concrete placed by tremie.
- F. WELL DESTRUCTION

See attached.
- G. SPECIAL CONDITIONS

APPROVED [Signature] DATE 3/20/02



ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
951 TURNER COURT, SUITE 200, HAYWARD, CA 94542-3251
PHONE (510) 670-6575 ANDREAS GODERLY FAX (510) 670-6262
(510) 616-2144 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 15101 Freedom Avenue
San Leandro, CA

PERMIT NUMBER W02-0327
WELL NUMBER _____
APN _____

California Coordinates Source _____ ft. Accuracy ± _____ ft.
CCN _____ n. COE _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

CLIENT Name Mohammed Pazdel
Address 35840 Alcazar
City Contra Costa CA Zip _____

A. GENERAL

1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

APPLICANT Name Naser Pakrou
Address 2680 Bishop Dr Fax 925 244 6601
City San Ramon CA Zip _____
Phone 925 244 6600

B. WATER SUPPLY WELLS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

TYPE OF PROJECT

Well Construction	Geotechnical Investigation
Cathodic Protection <input type="checkbox"/>	General <input type="checkbox"/>
Water Supply <input checked="" type="checkbox"/>	Contamination <input type="checkbox"/>
Monitoring <input checked="" type="checkbox"/>	Well Destruction <input type="checkbox"/>

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

PROPOSED WATER SUPPLY WELL USE

New Domestic <input type="checkbox"/>	Replacement Domestic <input type="checkbox"/>
Municipal <input type="checkbox"/>	Irrigation <input type="checkbox"/>
Industrial <input type="checkbox"/>	Other _____ <input type="checkbox"/>

D. GEOTECHNICAL

Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremie cement grout shall be used in place of compacted cuttings.

DRILLING METHOD:

Mud Rotary <input type="checkbox"/>	Air Rotary <input type="checkbox"/>	Auger <input checked="" type="checkbox"/>
Cable <input type="checkbox"/>	Other <input type="checkbox"/>	

E. CATROPIC

Fill hole above sand zone with concrete placed by tremie.

DRILLER'S LICENSE NO. C57 710079

WELL PROJECTS

Drill Hole Diameter <u>10</u> in.	Maximum Depth <u>30</u> ft.
Casing Diameter <u>4</u> in.	Number <u>ONE MW-3</u>
Surface Seal Depth <u>12</u> ft.	

F. WELL DESTRUCTION

See attached.

GEOTECHNICAL PROJECTS

Number of Borings _____	Maximum Depth _____ ft.
Hole Diameter _____ in.	

G. SPECIAL CONDITIONS

ESTIMATED STARTING DATE 4/22/02
ESTIMATED COMPLETION DATE 4/23/02

APPROVED _____ DATE 3-20-02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [Signature] DATE 3/20/02

Mar 20 02 02:21p

P. 3

ALAMEDA COUNTY PUBLIC WORKS AGENCY



WATER RESOURCES SECTION
551 TURNER COURT, SUITE 300, HAYWARD, CA 94541-3451
PHONE (510) 678-5515 ANDREAS GOMBERG FAX (510) 678-5262
(510) 678-5248 ALVIN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 15101 Freedom Avenue
San Leandro, CA

PERMIT NUMBER W02-0328
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

California Coordinates Source _____ ft. Accuracy ± _____ ft.
CCN _____
APN _____

CLIENT Name Mohammed Pazdel
Address 35840 Alcazar Phone _____
City Contra Costa CA Zip 94536

APPLICANT Name Naser Parrou
Address 2680 Bishop Dr. Phone 925 2446601
City San Ramon CA Zip 94583

TYPE OF PROJECT
Well Construction
Cathodic Protection Geotechnical Investigation
Water Supply Contamination
Monitoring Well Destruction

PROPOSED WATER SUPPLY WELL USE
New Domestic Replacement Domestic
Municipal Irrigation
Industrial Other _____

DRILLING METHOD:
Mud Rotary Air Rotary Auger
Cable Other

DRILLER'S LICENSE NO. C57 710079

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum Depth 30 ft.
Casing Diameter 4 in. Number ONE MW-4
Surface Seal Depth 12 ft.

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum Depth _____ ft.
Hole Diameter _____ in.

ESTIMATED STARTING DATE 4/22/02
ESTIMATED COMPLETION DATE 4/23/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-58.

APPLICANT'S SIGNATURE [Signature] DATE 3/20/02

A. GENERAL

1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL

Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, treated cement grout shall be used in place of compacted cuttings.

E. CATHODIC

Fill hole above anodic zone with concrete placed by tremie.

F. WELL DESTRUCTION

See attached.

G. SPECIAL CONDITIONS

APPROVED [Signature] DATE 3-20-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY



WATER RESOURCES SECTION
701 TURNER COURT, SUITE 308, BAYWARD, CA 94545-2651
PHONE (510) 670-5277 ~~ANDREAS GODFREY~~ FAX (510) 670-5262
(510) 670-5248 ALVEN KAN

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 15101 Freedom Avenue
San Leandro, CA

PERMIT NUMBER W02-0329
WELL NUMBER _____
APN _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

California Coordinates Source _____ ft. Accuracy ± _____ ft.
GCN _____ N. COE _____
APN _____

CLIENT Name Mohammed Pazzel
Address 35840 Alcazar Phone _____
City Court Fremont CA Zip 94536

- A. GENERAL
 1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
 2. Submit to ACPWA within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
 3. Permit is void if project not begun within 90 days of approval date.

APPLICANT Name Naser Pakrou
SAHA Env. Eng. Fax 925 244 6601
Address 2680 Bishop Dr Phone 925 244 6600
City San Ramon CA Zip 94583

- B. WATER SUPPLY WELLS
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

TYPE OF PROJECT
Well Construction Geotechnical Investigation
Cathodic Protection General
Water Supply Contamination
Monitoring Well Destruction

- C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
 1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

PROPOSED WATER SUPPLY WELL USE
New Domestic Replacement Domestic
Municipal Irrigation
Industrial Other _____

- D. GEOTECHNICAL
Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, trowled cement grout shall be used in place of compacted cuttings.

DRILLING METHOD:
Mud Rotary Air Rotary Auger
Cable Other

- E. CATHODIC
Fill hole above smud zone with concrete placed by tremie.
- F. WELL DESTRUCTION
See attached.
- G. SPECIAL CONDITIONS

DRILLER'S LICENSE NO. C57 710079
WELL PROJECTS hardward Drilling exp 17-31-03
Drill Hole Diameter 10 in. Maximum _____
Casing Diameter 4 in. Depth 30 ft.
Surface Seal Depth 12 ft. Number ONE MW-5

GEOTECHNICAL PROJECTS
Number of Borings _____ Maximum _____
Hole Diameter _____ in. Depth _____ ft.

ESTIMATED STARTING DATE 4/22/02
ESTIMATED COMPLETION DATE 4/23/02

APPROVED [Signature] DATE 3/20/02

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE [Signature] DATE 3/20/02

APPENDIX B

Geologic Logs of Monitoring Well Boreholes



Boring Location:
See Site Map.

Project: 2552

Date Drilled: April 22, 2002

Site Location: 15101 Freedom Rd, San Leandro

Drilling Method: HSA

Casing Elevation: 51.71 MSL

Driller: Woodward (Tony Salazar)

Depth to Groundwater: see notes

Logged By: R Papler

Approved By: Dr M Sepehr

PID	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLE ID & GW LEVEL	SAMPLED	WELL DIAGRAM
				3" asphalt over 6" silty gravel			
3			CL	SILTY CLAY: dark gray brown; firm-stiff; moist med.-high plasticity; low estimated permeability (LEK). No petroleum hydrocarbon (PHC) odor. (Artificial Fill)			
2	5		CL/ML	CLAYEY SILT/SILTY CLAY with some Sand: olive gray, stiff-v.stiff; moist; low-med. plasticity; LEK. No PHC odor.			
2			CL/ML	CLAYEY SILT/SILTY CLAY: light brown mottled olive gray; v. stiff-hard; damp; low-med. plasticity; with some caliche. LEK. No PHC odor			
1	10		CL/ML	CLAYEY SILT/SILTY CLAY: olive gray, hard; damp; low-med. plasticity; with gravelly sandstringer at 10.25' - 10.75'; LEK. No PHC odor.			
1				As above			
17	15		CL	SILTY CLAY WITH SOME GRAVEL: olive gray and gray, hard, damp; med. plasticity; with rounded gravel to 1.5" dia. below 15'; LEK. No PHC odor.			
15			CL/ML	CLAYEY SILT/SILTY CLAY with some sand: olive gray, hard; damp; low-med. plasticity; LEK. Slight-moderate PHC odor.			
10	20			As Above			
55				As Above			
25				As Above			
258	25		SC	CLAYEY SAND: Gray to olive gray, medium dense, damp-moist, low plasticity; low-medium estimated permeability (L-MEK) Strong PHC odor.	MW-1 @26'		
			CL/ML	CLAYEY SILT/SILTY CLAY: olive gray, hard; damp; low-med. plasticity. LEK. Moderate PHC odor.			
33	30		GW	SANDY GRAVEL: light gray brown, medium dense; wet; high estimated permeability HEK. Moderate PHC odor.			
			CL/ML	CLAYEY SILT/SILTY CLAY: olive gray, stiff; wet; med. plasticity; LEK. No PHC odor.			
	35						

NOTES:
Total depth: 30'
First encountered groundwater: 27'
Groundwater later stabilized at 22.85' (May 9, 2002)
Sample ID refers to sample analyzed by Laboratory

Boring Location:
See Site Map.

Project: 2552

Date Drilled: April 23, 2002

Site Location: 15101 Freedom Rd, San Leandro

Drilling Method: HSA

Casing Elevation: 49.66 MSL

Driller: Woodward (Tony Salazar)

Depth to Groundwater: see notes

Logged By: R Papler

Approved By:

PID	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLE ID & GW LEVEL	SAMPLED	WELL DIAGRAM
				3" asphalt over 6" silty gravel			
4	5		CL	SILTY CLAY: dark gray brown, very stiff, moist; med.-high plasticity; angular gravel to 1/2" low estimated permeability (LEK). No petroleum hydrocarbon (PHC) odor.			
			ML	CLAYEY SILT with some sand: gray brown; stiff, moist; low-medium plasticity; v. fine sand; low-medium estimated permeability (L-MEK). No PHC odor.			
			SW	GRAVELLY SAND: gray brown, medium dense; damp; subangular-sub-rounded gravel to 1/4"; high estimated permeability (HEK). No PHC odor.			
			ML	CLAYEY SILT with some sand: gray brown; v. stiff-hard, damp; low-medium plasticity; L-MEK. No PHC odor.			
5	10		SW	GRAVELLY SAND: gray brown, very dense; damp; subangular-subrounded gravel to 1/4"; high estimated permeability (HEK). No PHC odor.			
			ML	CLAYEY SILT with some sand: gray brown; mottled olive gray; v. stiff-hard, damp; low-medium plasticity; LEK. No PHC odor.			
5	15		ML	As above			
23	20		CL/ML	CLAYEY SILT: gray brown; v. stiff-hard, damp; low-medium plasticity; L-MEK. No PHC odor.	MW-2 @21'		
436			CL/ML	SILTY CLAY/CLAYEY SILT gray brown, v. stiff-hard; damp-moist, medium plasticity; with abundant caliche; LEK. No PHC odor.			
2	25		CL/ML	As above			
1	30			As above			
	35						

NOTES:
Total depth: 30'
First encountered groundwater: 27'
Groundwater later stabilized at 22.83' (May 9, 2002)
Sample ID refers to sample analyzed by Laboratory



Boring Location:

See Site Map.

Project: 2552

Site Location: 15101 Freedom Rd, San Leandro

Drilling Method: HSA

Driller: Woodward (Tony Salazar)

Logged By: R Papler

Date Drilled: April 23, 2002

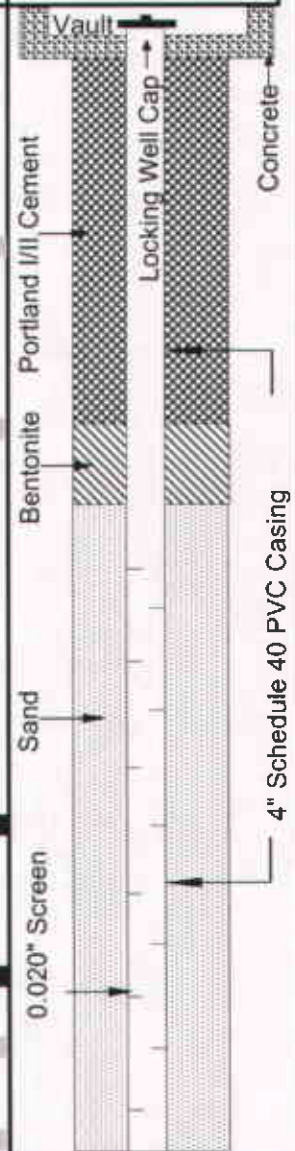
Casing Elevation: 51.66 MSL

Depth to Groundwater: see notes

Approved By: Dr M Sepehr

PID	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLE ID & GW LEVEL	SAMPLED	WELL DIAGRAM
				2" asphalt over 4" baserock			
58			GW	SILTY GRAVEL: orange brown, dense, moist; with occasional brick fragments; medium estimated permeability (MEK) No petroleum hydrocarbon (PHC) odor. (Artificial Fill)			
			GW-CL	GRAVEL mixed with SILTY CLAY: bluish gray and brown, moist; med. plasticity; angular gravel to 2"; low-medium permeability (L-MEK). No PHC odor. (Artificial Fill)			
	5		CL	GRAVELLY CLAY: brown; moist; med. plasticity; angular gravel to 1"; L-MEK. No PHC odor.			
			CL/ML	SILTY CLAY/CLAYEY SILT: gray brown, v. stiff-hard; damp-moist, medium plasticity; with abundant caliche; LEK. No PHC odor.			
5	10			As above			
				As above			
67	15		SW/GW	GRAVELLY SAND/SANDY GRAVEL: gray, dense, wet, medium-coarse sand; angular-subrounded gravel to 1"; high estimated permeability (HEK). No PHC odor.			
			CL	SILTY CLAY: olive gray; v. stiff; moist; med. to high plasticity; LEK. Medium PHC odor.			
122	20			As above			
571			SC	CLAYEY SAND: olive gray, medium dense, damp-moist, low plasticity; v. fine sand; L-MEK. Medium PHC odor.	MW-3 @21'		
1094	25		SW	GRAVELLY SAND: gray, dense; wet; medium-coarse sand; subangular-subrounded gravel to 1"; HEK. No PHC odor.	MW-3 @25'		
78				As above			
909				As above			
37	30		CL	SILTY CLAY: gray brown; hard; med.-high plasticity; LEK. Medium PHC odor.			
	35						

NOTES:
 Total depth: 30'
 First encountered groundwater: 25'
 Groundwater later stable at 22.28' (May 9, 2002)
 Sample ID refers to sample analyzed by Laboratory





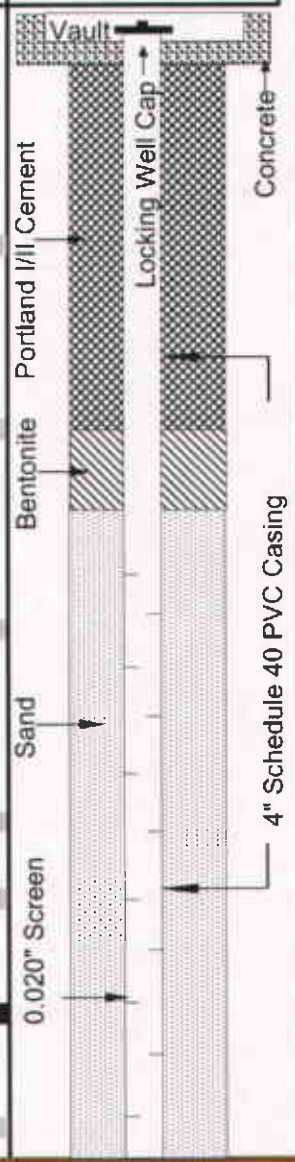
Boring Location:
See Site Map.

Project: 2552
Site Location: 15101 Freedom Rd, San Leandro
Drilling Method: HSA
Driller: Woodward (Tony Salazar)
Logged By: R Papler

Date Drilled: April 23, 2002
Casing Elevation: 450.54 MSL
Depth to Groundwater: see notes
Approved By: Dr M Sepehr

PID	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLE ID & GW LEVEL	SAMPLED	WELL DIAGRAM
				3" asphalt over 3" Sandy Gravel			
5	5		CL	SILTY CLAY mixed with GRAVELLY CLAY: dark gray brown, stiff-v. stiff; moist; med. plasticity; angular gravel to 2"; low-medium permeability (L-MEK). No PHC odor. (artificial fill).			
			CL	SILTY CLAY: dark gray brown grading to light gray with depth; stiff-v. stiff; moist; med. to high plasticity; LEK. No PHC odor.			
14	14		GW/SW	SANDY GRAVEL/GRAVELLY SAND: Gray, dense, damp, medium-coarse sand; angular-subrounded gravel to 1"; high estimated permeability (HEK). No PHC odor.			
			CL/ML	CLAYEY SILT/SILTY CLAY with some Sand: light gray brown mottled olive gray, hard; damp; low-medium plasticity; LEK. No PHC odor.			
20	20						
				As above			
17	17		GW/SW	SANDY GRAVEL/GRAVELLY SAND: gray, dense, damp, medium-coarse sand; subrounded gravel to 1/2"; high estimated permeability (HEK). No PHC odor.			
			CL/ML	CLAYEY SILT/SILTY CLAY: gray brown mottled olive gray, hard; damp; low-medium plasticity; LEK. Low-medium PHC odor.			
26	26		ML	CLAYEY SILT with some Sand: gray brown mottled olive gray, hard; damp; low-medium plasticity; L-MEK. No PHC odor.			
100	100						
260	25		CL/ML	CLAYEY SILT/SILTY CLAY: olive gray, v. stiff-hard; damp; low-medium plasticity; with caliche; LEK. Medium PHC odor.			
100	100			As Above grading to light gray brown below 27.5' with medium PHC odors at 26.5-27'			
34	30		SC	CLAYEY SAND: Gray; dense; fine-medium sand; medium plasticity; MEK. No PHC odor.			
	35						

NOTES:
 Total depth: 30'
 First encountered groundwater: 29'
 Groundwater later stabilized at 21.78' (May 9, 2002)
 Sample ID refers to sample analyzed by Laboratory





Boring Location:

Project: 2552

Date Drilled: April 22, 2002

See Site Map.

Site Location: 15101 Freedom Rd, San Leandro

Drilling Method: HSA

Casing Elevation: 47.79 MSL

Driller: Woodward (Tony Salazar)

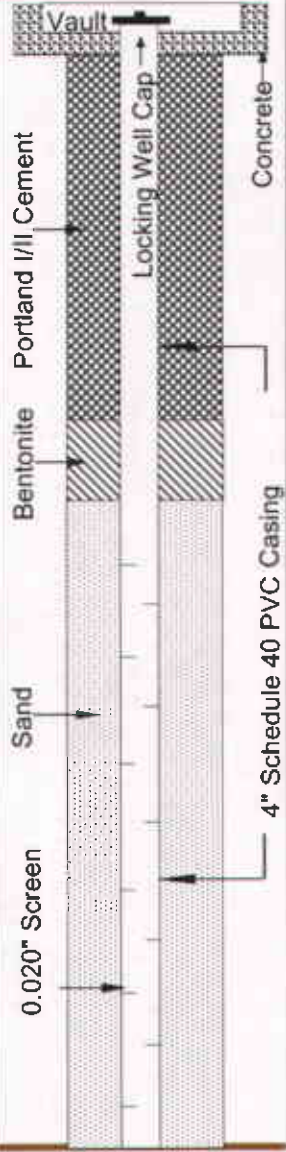
Depth to Groundwater: see notes

Logged By: R Papler

Approved By: Dr M Sepehr

PID	DEPTH	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	SAMPLE ID & GW LEVEL	SAMPLED	WELL DIAGRAM
				3" asphalt			
			CL	SILTY CLAY: dark gray brown mottled brown; stiff-v. stiff; moist; med. plasticity; LEK. No PHC odor.			
				As above			
1	5		CL/ML	CLAYEY SILT/SILTY CLAY with some sand: olive gray, hard; damp; low-medium plasticity; LEK. No PHC odor.			
1				As above			
1	10			As above			
1				As above			
2	15		SW & SC	GRAVELLY SAND interbedded with CLAYEY SAND: olive gray, v. dense-dense, damp, medium-coarse sand; subrounded gravel to 1"; high estimated permeability (HEK) No PHC odor.			
				As above			
322	20		SW/GW	SANDY GRAVEL/GRAVELLY SAND: olive gray, dense, damp, medium-coarse sand; subangular gravel to 1"; high estimated permeability (HEK). Medium PHC odor.			
				As above			
1074			SW	GRAVELLY SAND with some Clay: olive gray, dense-v. dense, moist, medium-coarse sand; subangular gravel to 1/2"; HEK. Strong PHC odor.			
836				As above			
1158	25		CL	SILTY CLAY: olive gray, v. stiff-hard; moist; medium plasticity; with caliche LEK. Medium PHC odor.			
				As above grading to light gray brown below 27.5' with medium PHC odors at 26.5-27'			
132			CL/ML	CLAYEY SILT/SILTY CLAY with some sand: gray brown, v. stiff-hard; damp; low-medium plasticity; LEK. Medium PHC odor.			
92				As above			
42	30		CL	SILTY CLAY: olive gray, v. stiff-hard; moist; medium plasticity; with caliche LEK. Medium PHC odor.			
			CL/ML	CLAYEY SILT/SILTLY CLAY with some sand: gray brown, v. stiff-hard; damp; low-medium plasticity; LEK. Medium PHC odor.			
	35						

NOTES:
 Total depth: 30'
 First encountered groundwater not observed.
 Groundwater later stable at 19.02 (May 9, 2002)
 Sample ID refers to sample analyzed by Laboratory



Appendix C

Well Development Field Data Sheets



ENVIRONMENTAL ENGINEERING, INC

WELL DEVELOPMENT FIELD DATA SHEETS

Well No:	<u>MW-4</u>	Project No:	<u>2252</u>
Casing Diameter:	<u>4"</u>	Address:	<u>15101 Freedom Av</u>
Beginning Well Depth:	<u>30.1'</u>		<u>San Leandro, CA</u>
Ending Well Depth:	<u>30.1'</u>	Date:	<u>2 May 2002</u>
Depth to Groundwater:	<u>21.65</u>	Samplers:	<u>RPapler</u>
Groundwater Elevation:	<u>-</u>		
Height of Water Column:	<u>-</u>		
Purged Volume:	<u>-</u>		

Purging Method: Bailer Pump

Sampling: Yes No

Field Measurements

Time	Vol gal	pH	Temp °F	E.C. uS/cm	Comments
10:40 AM	1	6.82	66.1	2330	√ Turbid
10:45	5	7.12	67.5	2290	√ Turbid
10:49	10	6.97	67.7	2240	√ Turbid
10:55	15	7.27	69.0	2030	St-M Turb
10:59	20	6.90	69.0	1720	St. Turbid
11:05	25	6.80	68.9	1810	St. Turbid
11:10	30	6.82	68.3	1730	Clear



ENVIRONMENTAL ENGINEERING, INC

WELL DEVELOPMENT FIELD DATA SHEETS

Well No:	<u>MW-3</u>	Project No:	<u>2252</u>
Casing Diameter:	<u>4"</u>	Address:	<u>15101 Freedom Av</u>
Beginning Well Depth:	<u>29.05</u>		<u>San Leandro, CA</u>
Ending Well Depth:	<u> </u>	Date:	<u>2 May 2002</u>
Depth to Groundwater:	<u>22.20</u>	Samplers:	<u>RPapler</u>
Groundwater Elevation:	<u>-</u>		
Height of Water Column:	<u> </u>		
Purged Volume:	<u> </u>		

Purging Method: Bailer Pump

Sampling: Yes No

Field Measurements

Time	Vol gal	pH	Temp °C	E.C. uS/cm	Comments
3:05 PM	4	8.60	66.1	1100	√ Turbid
3:12	9	8.44	68.4	719	√ Turbid
3:18	13	8.44	69.7	812	√ Turbid
3:20 Pumped dry					
3:27	17	8.08	67.2	1183	SI - Mod Turb
3:32	21	7.86	67.6	1276	SI - Mod Turb
3:39	25	8.27	69.9	1270	SI - Mod Turb
3:42	29	7.50	69.5	1212	SI - Mod Turb
3:44 Pumped dry					
3:48	34	7.66	68.5	1188	SI Turb.
3:53	38	7.47	68.8	1180	SI Turb.



ENVIRONMENTAL ENGINEERING, INC

WELL DEVELOPMENT FIELD DATA SHEETS

Well No:	<u>MW-5</u>	Project No:	<u>2252</u>
Casing Diameter:	<u>4"</u>	Address:	<u>15101 Freedom Av</u>
Beginning Well Depth:	<u>29.5</u>		<u>San Leandro, CA</u>
Ending Well Depth:	<u>29.9</u>	Date:	<u>2 May 2002</u>
Depth to Groundwater:	<u>18.85</u>	Samplers:	<u>RPapler</u>
Groundwater Elevation:	<u>-</u>		
Height of Water Column:	<u>-</u>		
Purged Volume:	<u>35</u>		

Purging Method: Bailer Pump

Sampling: Yes No

Field Measurements

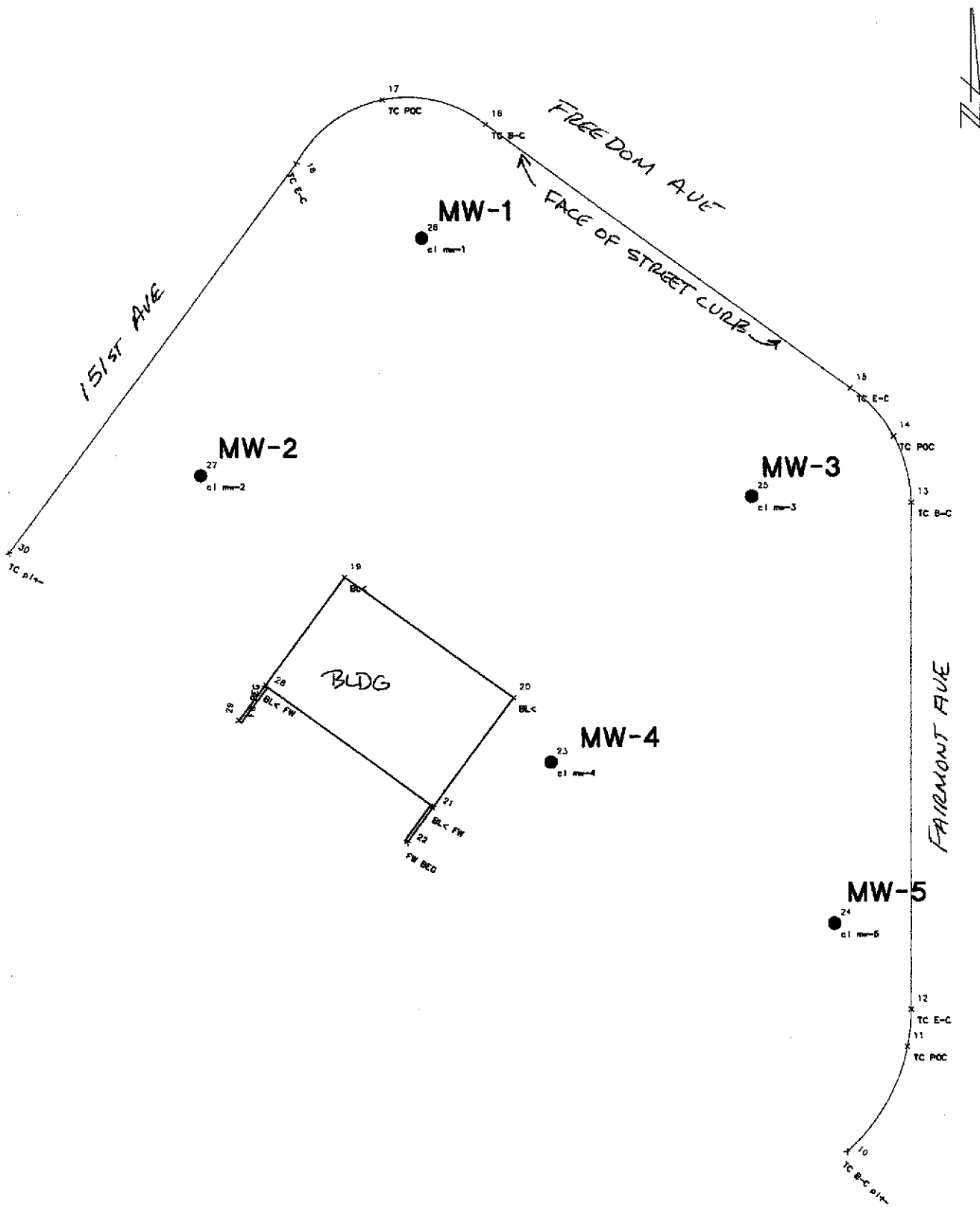
Time	Vol gal	pH	Temp °F	E.C. uS/cm	Comments
12:13	3	8.19	65.7	1430	√ Turbid
12:17	7	7.42	68.4	1370	Turbid
12:22	14	6.82	70.0	1320	Turbid
12:27	20	6.87	69.4	--	Turbid
12:34	25	6.75	69.7	1330	Turbid
12:39	30	6.85	68.8	--	sh. turb
12:44	35	6.79	69.3	1220	sh. Turbid

Appendix D

Monitoring Well Survey Report

5-7-02
Job # A02545
1" = 30'

TEXACO S/S, 15101 FREEDOM AVE
SAN LEANDRO



Survey Date 05/07/02
Job No. A02545

Table of Elevations & Coordinates

On Monitoring Wells
Texaco Service Station
15101 Freedom Avenue
San Leandro, California

<u>Well No.</u>	<u>Northing</u>	<u>Easting</u>	<u>Elevation</u>
MW-1	5106.89	4812.60	51.71 -Top of PVC casing, North side @ Punch Mark 52.08 - Top North Rim of Box
MW-2	5056.82	4766.17	49.66 - Top of PVC Casing, North Side @ Punch Mark 50.19 - Top North Rim of Box
MW-3	5051.97	4881.26	51.16 - Top of PVC Casing, North side @ Punch Mark 51.60 - Top North Rim of Box
MW-4	4996.14	4839.06	50.54 - Top of PVC Casing, North side @ Punch Mark 50.98 - Top North Rim of Box
MW-5	4961.75	4898.20	47.79 - Top of PVC Casing, North side @Punch Mark 48.25 - Top North Rim of Box
Building Corner	5035.26	4796.09	
Building Corner	5009.72	4831.30	
Building Corner	4979.40	4808.97	
Building Corner	5005.06	4773.92	

Benchmark: Alameda County Benchmark "Fair-580"

Alameda County disc stamped "Fair-580 - 1976" set in the top of the Northwesterly concrete walk at the Northwest corner of the Fairmont Drive over-crossing of I-580, 1' southeast of the northwesterly concrete bridge rail, 1.9' southwesterly of the northeasterly end of the northwest concrete walk for the bridge.

Elevation = 67.07 M.S.L. Datum

Kier & Wright Civil Engineer & Land Surveyors, Inc.

1233 Quarry Lane, Suite 145 ♦ PLEASANTON, CALIFORNIA 94566 ♦ (925) 249-6555 ♦ (925) 249-6563

Appendix E

Laboratory Reports and Chain of Custody Forms



A N A L Y T I C A L R E P O R T

Prepared for:

SOMA Environmental Engineering Inc.
2680 Bishop Dr.
Suite 203
San Ramon, CA 94583

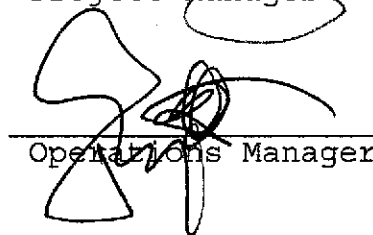
Date: 10-MAY-02
Lab Job Number: 158279
Project ID: 2550
Location: 15101 Freedom Blvd.

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:


Project Manager

Reviewed by:


Operations Manager

This package may be reproduced only in its entirety.



Laboratory Number: 158279
Client: Soma Environmental Engineering, Inc.
Project Name: 15101 Freedom Boulevard
Project #: 2550
Receipt Date: 04/24/02

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for six soil samples received from the above referenced project on April 24th, 2002. The samples were received cold and intact.

TVH/MBTEX (EPA 8015B(M)/8021B):

The recoveries for the trifluorotoluene surrogates were over the acceptable QC limits for client ID MW-1@26' (C&T ID 158279-011), MW-2@21' (C&T ID 158279-017) and the sample spike (C&T ID 158279-011) and its duplicate for batch number 71903. The samples were re-ran and the matrix interference was confirmed. The laboratory control sample for the same batch was acceptable so the quality of the sample data should not be affected. No other analytical problems were encountered.

Purgeable Aromatics by GC/MS:

No analytical problems were encountered.

CHAIN OF CUSTODY FORM

Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

C&T
LOGIN # 158279

Analyses

Project No: 2550

Sampler: RW Papler *[Signature]*

Project Name: Paradise

Report To: Mansour Sepahy / Roger Papler

Project P.O.: 15101 Freedom Blvd.

Company: SOMA Env. Eng.

Turnaround Time: Standard

Telephone: (925) 244-6600

Fax: (925) 244-6600

Laboratory Number	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes	
			Soil	Water	Waste		HCL	H ₂ SO ₄	HNO ₃	ICE		
-1	MW-1e-6 ^s	22 Apr 2002	X			1				X	Borehole MW-1	TPH-g 8015 BTEX-g MTBE 8020 MTBE Conf. 8260
-2	MW-1e-10 ^s		X			1				X		
-3	MW-1e-15 ^s		X			1				X		
-4	MW-1e-18 ^s		X			1				X		
-5	MW-1e-19 ^s		X			1				X		
-6	MW-1e-19 ^s		X			1				X		
-7	MW-1e-20 ^s		X			1				X		
-8	MW-1e-22 ^s		X			1				X		
-9	MW-1e-23 ^s		X			1				X		
-10	MW-1e-25 ^s		X			1				X		
-11	MW-1e-26 ^s		X			1				X		
-12	MW-1e-28 ^s		X			1				X		
-13	MW-1e-29 ^s		X			1				X		

Notes: Please analyze end of samples as indicated on steel sleeve w/ red markings
MW-1e-6^s (r) / MW-1e-10^s (b) / MW-1e-23^s (b) / MW-1e-28^s (b)
20^s

Please confirm pos. MTBE results w/ 8260

RELINQUISHED BY:	RECEIVED BY:
<i>[Signature]</i> RW Papler	<i>[Signature]</i> 4/24/02 1435
DATE/TIME: 24 Apr 02 / 1435	DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature

CHAIN OF CUSTODY FORM

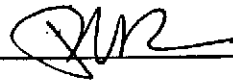
Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878
 2323 Fifth Street
 Berkeley, CA 94710
 (510)486-0900 Phone
 (510)486-0532 Fax

C&T
 LOGIN # 158279

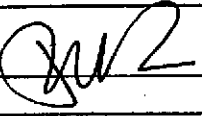

Analyses

Project No: 2550
 Project Name: Padded / SL
 Project P.O.: 15101 Freedom Blvd
 Turnaround Time: Standard

Sampler: RW Papler 
 Report To: MANSOUR SEZEM
 Company: SOMA Env. Eng
 Telephone: (925) 244-4682
 Fax: (925) 244-4601

Laboratory Number	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes	TPH-g 8015 BTEX-g MTBE 8070 MTBE confirm 8260
			Soil	Water	Waste		HCL	H2SO	HNO3	ICE		
-14	MW-2e6°	23 Apr 2002	X			1				X	Borehole MW-2	
-15	MW-2e11°		X			1				X		
-16	MW-2e16°		X			1				X		
-17	MW-2e21°		X			1				X		X
-18	MW-2e27°		X			1				X		
-19	MW-2e29°		X			1				X		
* 0-20	MW-3e6°		X			1				X	MW-3	
-21	MW-3e11°		X			1				X		
-022	MW-3e21°		X			1				X		X
-023	MW-3e25°		X			1				X		X
-024	MW-3e27°		X			1				X		X
-025	MW-3e29°		X			1				X		X
-26	MW-4e6°		X			1				X		X

Notes: Please analyze end of sample as indicated on steel sleeve w/ red marking per MW-2e21° (b) / MW-3e27° (t)
 Please confirm pos. MTBE results w/ 8260

RELINQUISHED BY:	RECEIVED BY:
 RW Papler 24 Apr 02 / 14:35 DATE/TIME	 Tony Rojas 4/24/02 11:35 DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

SEE REVISION
 COC
 PP 4/26/02

* NOTE: MW-3 @ 6' WAS NOT RECEIVED PP 4/26/02

CHAIN OF CUSTODY FORM

Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878
 2323 Fifth Street
 Berkeley, CA 94710
 (510)486-0900 Phone
 (510)486-0532 Fax

C&T
 LOGIN # 158279

Analyses

Project No: 2550

Sampler: RW Papler

Project Name: Paved Isl

Report To: MANSOUR SEPEHR / ROGER PAPLER

Project P.O.: 15101 Freedom Blvd.

Company: SOMA Env Eng.

Turnaround Time: Standard

Telephone: (925) 244-1660

Fax: (925) 244-6601

Laboratory Number	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes	
			Soil	Water	Waste		HCL	H2SO	HNO3	ICE		
-27	MW-4e11	23 Apr 2002	x							x	Bokehule MW-4	TPA-g 8015 BTEX: MIBB 8020 MIBB LMDM 8260
-28	MW-4e12		x							x		
-29	MW-4e21		x							x		
-30	MW-4e23		x							x		
-031	MW-4e24		x							x		
-320	MW-4e29		x							x	MW-5	
0-33	MW-5e6	22 Apr 2002	x							x		
0-35	MW-5e10		x							x		
0-36	MW-5e15		x							x		
0-37	MW-5e18		x							x		
0-38	MW-5e19		x							x		
0-39	MW-5e20		x							x		
0-40	MW-5e21		x							x		
0-41	MW-5e22		x							x		

Notes: Please analyze end of sample as indicated on steel sleeve w/ red marking pen: MW-4e20 (+) / MW-5e22 (+)

Please confirm pos. MIBB result of 8260

RELINQUISHED BY:	RECEIVED BY:
 RW Papler 24 Apr 02 / 14²⁵ DATE/TIME	 Tony Frij 4/24/02 14²⁶ DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature

CHAIN OF CUSTODY FORM

Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878
 2323 Fifth Street
 Berkeley, CA 94710
 (510)486-0900 Phone
 (510)486-0532 Fax

C&T
 LOGIN # 158279

Analyses

Project No: 2550
 Project Name: PADAL/G.L.
 Project P.O.: 15101 Freedom Blvd
 Turnaround Time: Standard

Sampler: RW Papler
 Report To: MANSOUR Gharib / Roger Papler
 Company: SDMA ENV. Eng.
 Telephone: (925) 244-1600
 Fax: (925) 244-1601

TPA-8 2015	MTEB 8070	MTEB 8260																	
---------------	--------------	--------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Laboratory Number	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes	
			Soil	Water	Waste		HCL	H ₂ SO ₄	HNO ₃	ICE		
-42	MW-5020	22 Apr 2005		X		1				X		Barren hole MW-5
-43	MW-5027			X		1				X		
-44	MW-5029			X		1				X		
FOR LABORATORY USE												

Notes: Please analyze end of sample as indicated on steel sleeve w/ red marking pen

Relinquished By: RW Papler ^{22 Apr 05 1435} DATE/TIME

Received By: [Signature] 4/29/05 DATE/TIME

Please confirm pos. MTEB results w/ 8260

Signature

CHAIN OF CUSTODY FORM

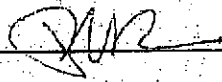
Curtis & Tompkins, Ltd.
 Analytical Laboratory Since 1878
 2323 Fifth Street
 Berkeley, CA 94710
 (510)486-0900 Phone
 (510)486-0532 Fax

REVISED

C&T
 LOGIN # _____

Analyses

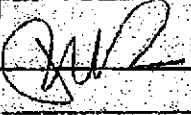
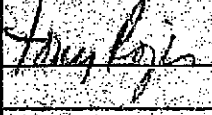
Project No: 2552
 Project Name: Pasdel / G-1
 Project P.O.: 15101 Freedom Blvd
 Turnaround Time: Standard

Sampler: R.W. Papler 
 Report To: MARGARET GIZELER
 Company: SUMA Env. Eng.
 Telephone: (925) 744-1119
 Fax: (925) 744-1110

Laboratory Number	Sample ID	Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes
			Soil	Water	Waste		HCL	H ₂ SO ₄	HNO ₃	ICE	
F O R A T O R Y	MW-2e-10	22 APR 02	x							x	PARALLEL MW-2
	MW-2e-11		x							x	
	MW-2e-16		x							x	
	MW-2e-21		x							x	
	MW-2e-27		x							x	
F O R A T O R Y	MW-2e-29		x							x	MW-3
	MW-2e-12		x							x	
L A B O R A T O R Y	MW-3e-11		x							x	MW-4
	MW-3e-21		x							x	
	MW-3e-26		x							x	
	MW-3e-27		x							x	
	MW-3e-20		x							x	
	MW-4e-10		x							x	

MW-2
 MW-3
 MW-4
 MBE Composite 8200

Notes: Please analyze end of sample as indicated on steel sleeve w/ red marking for MW-2e-21.0 (b) / MW-3e-27.0 (f)
 Please confirm pos. MBE results w/ 8200

RELINQUISHED BY:	RECEIVED BY:
 R.W. Papler 22 APR 02 / 1435 DATE/TIME	 Tracy Lopez 4/29/02 / 11:30 DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

Signature

Curtis & Tompkins Laboratories Analytical Report

Lab #: 158279	Location: 15101 Freedom Blvd.
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2550	
Matrix: Soil	Received: 04/24/02
Basis: as received	

Field ID: MW-1 @ 26'	Batch#: 71903
Type: SAMPLE	Sampled: 04/22/02
Lab ID: 158279-011	Analyzed: 04/26/02
Diln Fac: 1.000	

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	23	0.93	mg/Kg	8015B (M)
MTBE	50	19	ug/Kg	EPA 8021B
Benzene	54	4.6	ug/Kg	EPA 8021B
Toluene	40 C	4.6	ug/Kg	EPA 8021B
Ethylbenzene	220	4.6	ug/Kg	EPA 8021B
m,p-Xylenes	77 C	4.6	ug/Kg	EPA 8021B
o-Xylene	130 C	4.6	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	194 *	58-144	8015B (M)
Bromofluorobenzene (FID)	107	60-146	8015B (M)
Trifluorotoluene (PID)	170 *	67-146	EPA 8021B
Bromofluorobenzene (PID)	105	60-137	EPA 8021B

Field ID: MW-2 @ 21'	Diln Fac: 1.000
Type: SAMPLE	Sampled: 04/23/02
Lab ID: 158279-017	

Analyte	Result	RL	Units	Batch#	Analyzed	Analysis
Gasoline C7-C12	55	2.0	mg/Kg	71914	04/27/02	8015B (M)
MTBE	46 C	21	ug/Kg	71903	04/26/02	EPA 8021B
Benzene	ND	5.3	ug/Kg	71903	04/26/02	EPA 8021B
Toluene	190 C	5.3	ug/Kg	71903	04/26/02	EPA 8021B
Ethylbenzene	720	5.3	ug/Kg	71903	04/26/02	EPA 8021B
m,p-Xylenes	57 C	5.3	ug/Kg	71903	04/26/02	EPA 8021B
o-Xylene	110 C	5.3	ug/Kg	71903	04/26/02	EPA 8021B

Surrogate	%REC	Limits	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	138	58-144	71914	04/27/02	8015B (M)
Bromofluorobenzene (FID)	109	60-146	71914	04/27/02	8015B (M)
Trifluorotoluene (PID)	194 *	67-146	71903	04/26/02	EPA 8021B
Bromofluorobenzene (PID)	111	60-137	71903	04/26/02	EPA 8021B

* = Value outside of QC limits; see narrative
 C = Presence confirmed, but confirmation concentration differed by more than a factor of two
 ND = Not Detected
 RL = Reporting Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #: 158279	Location: 15101 Freedom Blvd.
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2550	
Matrix: Soil	Received: 04/24/02
Basis: as received	

Field ID: MW-3 @ 21'	Batch#: 71903
Type: SAMPLE	Sampled: 04/23/02
Lab ID: 158279-022	Analyzed: 04/26/02
Diln Fac: 1.000	

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B (M)
MTBE	32	21	ug/Kg	EPA 8021B
Benzene	ND	5.2	ug/Kg	EPA 8021B
Toluene	ND	5.2	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.2	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.2	ug/Kg	EPA 8021B
o-Xylene	ND	5.2	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	88	58-144	8015B (M)
Bromofluorobenzene (FID)	89	60-146	8015B (M)
Trifluorotoluene (PID)	97	67-146	EPA 8021B
Bromofluorobenzene (PID)	94	60-137	EPA 8021B

Field ID: MW-3 @ 25'	Batch#: 72096
Type: SAMPLE	Sampled: 04/23/02
Lab ID: 158279-023	Analyzed: 05/07/02
Diln Fac: 50.00	

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	910	50	mg/Kg	8015B (M)
MTBE	ND	1,000	ug/Kg	EPA 8021B
Benzene	750 C	250	ug/Kg	EPA 8021B
Toluene	2,900	250	ug/Kg	EPA 8021B
Ethylbenzene	15,000	250	ug/Kg	EPA 8021B
m,p-Xylenes	47,000	250	ug/Kg	EPA 8021B
o-Xylene	18,000	250	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	144	58-144	8015B (M)
Bromofluorobenzene (FID)	111	60-146	8015B (M)
Trifluorotoluene (PID)	124	67-146	EPA 8021B
Bromofluorobenzene (PID)	111	60-137	EPA 8021B

* = Value outside of QC limits; see narrative
 C = Presence confirmed, but confirmation concentration differed by more than a factor of two
 ND = Not Detected
 L = Reporting Limit



Curtis & Tompkins Laboratories Analytical Report

Lab #: 158279	Location: 15101 Freedom Blvd.
Client: SOMA Environmental Engineering Inc.	Prep: EPA 5030B
Project#: 2550	
Matrix: Soil	Received: 04/24/02
Basis: as received	

Field ID: MW-3 @ 21'	Batch#: 71903
Type: SAMPLE	Sampled: 04/23/02
Lab ID: 158279-022	Analyzed: 04/26/02
Diln Fac: 1.000	

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B(M)
MTBE	32	21	ug/Kg	EPA 8021B
Benzene	ND	5.2	ug/Kg	EPA 8021B
Toluene	ND	5.2	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.2	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.2	ug/Kg	EPA 8021B
o-Xylene	ND	5.2	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	88	58-144	8015B(M)
Bromofluorobenzene (FID)	89	60-146	8015B(M)
Trifluorotoluene (PID)	97	67-146	EPA 8021B
Bromofluorobenzene (PID)	94	60-137	EPA 8021B

Field ID: MW-4 @ 26'	Lab ID: 158279-031
Type: SAMPLE	Sampled: 04/23/02

Analyte	Result	RL	Units	Diln Fac	Batch#	Analyzed	Analysis
Gasoline C7-C12	66	5.0	mg/Kg	5.000	71916	04/29/02	8015B(M)
MTBE	39 C	19	ug/Kg	1.000	71903	04/26/02	EPA 8021B
Benzene	180	4.8	ug/Kg	1.000	71903	04/26/02	EPA 8021B
Toluene	30 C	4.8	ug/Kg	1.000	71903	04/26/02	EPA 8021B
Ethylbenzene	540	4.8	ug/Kg	1.000	71903	04/26/02	EPA 8021B
m,p-Xylenes	1,700	4.8	ug/Kg	1.000	71903	04/26/02	EPA 8021B
o-Xylene	650	4.8	ug/Kg	1.000	71903	04/26/02	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed	Analysis
Trifluorotoluene (FID)	124	58-144	5.000	71916	04/29/02	8015B(M)
Bromofluorobenzene (FID)	89	60-146	5.000	71916	04/29/02	8015B(M)
Trifluorotoluene (PID)	129	67-146	1.000	71903	04/26/02	EPA 8021B
Bromofluorobenzene (PID)	100	60-137	1.000	71903	04/26/02	EPA 8021B

= Value outside of QC limits; see narrative
 C= Presence confirmed, but confirmation concentration differed by more than a factor of two
 ND= Not Detected
 RL= Reporting Limit



Curtis & Tompkins Laboratories Analytical Report

Lab #: 158279 Location: 15101 Freedom Blvd.
 Client: SOMA Environmental Engineering Inc. Prep: EPA 5030B
 Project#: 2550
 Matrix: Soil Received: 04/24/02
 Basis: as received

Field ID: MW-5 @ 23.5' Batch#: 71914
 Type: SAMPLE Sampled: 04/22/02
 Lab ID: 158279-041 Analyzed: 04/27/02
 Diln Fac: 100.0

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	1,500	100	mg/Kg	8015B (M)
MTBE	ND	2,000	ug/Kg	EPA 8021B
Benzene	ND	500	ug/Kg	EPA 8021B
Toluene	5,200	500	ug/Kg	EPA 8021B
Ethylbenzene	20,000	500	ug/Kg	EPA 8021B
m,p-Xylenes	53,000	500	ug/Kg	EPA 8021B
o-Xylene	14,000	500	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	119	58-144	8015B (M)
Bromofluorobenzene (FID)	105	60-146	8015B (M)
Trifluorotoluene (PID)	106	67-146	EPA 8021B
Bromofluorobenzene (PID)	108	60-137	EPA 8021B

Type: BLANK Batch#: 71903
 Lab ID: QC176919 Analyzed: 04/26/02
 Diln Fac: 1.000

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B (M)
MTBE	ND	20	ug/Kg	EPA 8021B
Benzene	ND	5.0	ug/Kg	EPA 8021B
Toluene	ND	5.0	ug/Kg	EPA 8021B
Ethylbenzene	ND	5.0	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.0	ug/Kg	EPA 8021B
o-Xylene	ND	5.0	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	87	58-144	8015B (M)
Bromofluorobenzene (FID)	89	60-146	8015B (M)
Trifluorotoluene (PID)	96	67-146	EPA 8021B
Bromofluorobenzene (PID)	92	60-137	EPA 8021B

* = Value outside of QC limits; see narrative
 C = Presence confirmed, but confirmation concentration differed by more than a factor of two
 ND = Not Detected
 L = Reporting Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550		
Matrix:	Soil	Received:	04/24/02
Basis:	as received		

Type:	BLANK	Batch#:	71914
Lab ID:	QC176969	Analyzed:	04/27/02
Diln Fac:	1.000		

Analyte	Result	RL	Units	Analysis
Gasoline C7-C12	ND	1.0	mg/Kg	8015B(M)
MTBE	ND	20	ug/Kg	EPA 8021B
Benzene	ND	5.0	ug/Kg	EPA 8021B
Toluene	ND	5.0	ug/Kg	EPA 8021B
o-methylbenzene	ND	5.0	ug/Kg	EPA 8021B
m,p-Xylenes	ND	5.0	ug/Kg	EPA 8021B
o-Xylene	ND	5.0	ug/Kg	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	102	58-144	8015B(M)
Bromofluorobenzene (FID)	99	60-146	8015B(M)
Trifluorotoluene (PID)	95	67-146	EPA 8021B
Bromofluorobenzene (PID)	99	60-137	EPA 8021B

Type:	BLANK	Batch#:	71916
Lab ID:	QC176976	Analyzed:	04/29/02
Units:	mg/Kg	Analysis:	8015B(M)
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Trifluorotoluene (FID)	87	58-144
Bromofluorobenzene (FID)	91	60-146

Gasoline by GC/FID CA LUFT

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	8015B(M)
Type:	LCS	Basis:	as received
Lab ID:	QC176920	Diln Fac:	1.000
Matrix:	Soil	Batch#:	71903
Units:	mg/Kg	Analyzed:	04/26/02

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	8.665	87	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	58-144
Bromofluorobenzene (FID)	90	60-146

Gasoline by GC/FID CA LUFT

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	8015B(M)
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Batch#:	71914
Basis:	as received	Analyzed:	04/27/02

Type: BS Lab ID: QC176970

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	9.670	97	78-120
Surrogate	%REC	Limits		
Trifluorotoluene (FID)	114	58-144		
Bromofluorobenzene (FID)	101	60-146		

Type: BSD Lab ID: QC176971

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	9.520	95	78-120	2	20
Surrogate	%REC	Limits				
Trifluorotoluene (FID)	116	58-144				
Bromofluorobenzene (FID)	101	60-146				

Gasoline by GC/FID CA LUFT

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	8015B(M)
Type:	LCS	Basis:	as received
Lab ID:	QC176977	Diln Fac:	1.000
Matrix:	Soil	Batch#:	71916
Units:	mg/Kg	Analyzed:	04/29/02

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	10.00	8.565	86	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	58-144
Bromofluorobenzene (FID)	94	60-146

Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8021B
Type:	LCS	Basis:	as received
Lab ID:	QC176921	Diln Fac:	1.000
Matrix:	Soil	Batch#:	71903
Units:	ug/Kg	Analyzed:	04/26/02

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	20.00	100	72-126
Benzene	20.00	20.06	100	65-120
Toluene	20.00	19.73	99	69-120
Ethylbenzene	20.00	19.58	98	68-121
m,p-Xylenes	40.00	39.42	99	70-124
o-Xylene	20.00	19.86	99	73-121

Surrogate	%REC	Limits
Trifluorotoluene (PID)	92	67-146
Bromofluorobenzene (PID)	90	60-137



Benzene, Toluene, Ethylbenzene, Xylenes

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8021B
Type:	LCS	Basis:	as received
Lab ID:	QC176972	Diln Fac:	1.000
Matrix:	Soil	Batch#:	71914
Units:	ug/Kg	Analyzed:	04/27/02

Analyte	Spiked	Result	%REC	Limits
MTBE	100.0	105.5	106	72-126
Benzene	100.0	104.1	104	65-120
Toluene	100.0	106.8	107	69-120
Ethylbenzene	100.0	105.4	105	68-121
m,p-Xylenes	200.0	209.7	105	70-124
o-Xylene	100.0	104.7	105	73-121

Surrogate	%REC	Limits
Trifluorotoluene (PID)	98	67-146
Bromofluorobenzene (PID)	100	60-137

Gasoline by GC/FID CA LUFT

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	8015B(M)
Field ID:	MW-1 @ 26'	Diln Fac:	1.000
MSS Lab ID:	158279-011	Batch#:	71903
Matrix:	Soil	Sampled:	04/22/02
Units:	mg/Kg	Received:	04/24/02
Basis:	as received	Analyzed:	04/27/02

Type: MS Lab ID: QC176922

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	23.29	2.000	11.55 >LR	-587	NM 44-133

Surrogate	%REC	Limits
Trifluorotoluene (FID)	264 *	>LR 58-144
Bromofluorobenzene (FID)	131	60-146

Type: MSD Lab ID: QC176923

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2.000	12.07 >LR	-561	NM 44-133	NC	31

Surrogate	%REC	Limits
Trifluorotoluene (FID)	233 *	>LR 58-144
Bromofluorobenzene (FID)	132	60-146

*= Value outside of QC limits; see narrative
 NC= Not Calculated
 NM= Not Meaningful
 >LR= Response exceeds instrument's linear range
 RPD= Relative Percent Difference

Gasoline by GC/FID CA LUFT

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	8015B (M)
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	158304-001	Batch#:	71916
Matrix:	Soil	Sampled:	04/23/02
Units:	mg/Kg	Received:	04/23/02
Basis:	as received	Analyzed:	04/29/02

Type: MS Lab ID: QC177100

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.08700	9.259	5.003	54	44-133
Surrogate	%REC	Limits			
Trifluorotoluene (FID)	112	58-144			
Bromofluorobenzene (FID)	97	60-146			

Type: MSD Lab ID: QC177101

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.259	4.807	52	44-133	4	31
Surrogate	%REC	Limits				
Trifluorotoluene (FID)	108	58-144				
Bromofluorobenzene (FID)	94	60-146				

Purgeable Aromatics by GC/MS

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8260B
Field ID:	MW-1 @ 26'	Diln Fac:	1.042
Lab ID:	158279-011	Batch#:	72025
Matrix:	Soil	Sampled:	04/22/02
Units:	ug/Kg	Received:	04/24/02
Basis:	as received	Analyzed:	05/02/02

Analyte	Result	RL
MTBE	ND	5.2

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	75-128
Toluene-d8	103	80-111
Bromofluorobenzene	97	77-126



Purgeable Aromatics by GC/MS

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8260B
Field ID:	MW-2 @ 21'	Diln Fac:	0.9615
Lab ID:	158279-017	Batch#:	72025
Matrix:	Soil	Sampled:	04/23/02
Units:	ug/Kg	Received:	04/24/02
Basis:	as received	Analyzed:	05/02/02

Analyte	Result	RL
MTBE	ND	4.8

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	104	75-128
Toluene-d8	86	80-111
Bromofluorobenzene	96	77-126

Purgeable Aromatics by GC/MS

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8260B
Field ID:	MW-3 @ 21'	Diln Fac:	1.020
Lab ID:	158279-022	Batch#:	72025
Matrix:	Soil	Sampled:	04/23/02
Units:	ug/Kg	Received:	04/24/02
Basis:	as received	Analyzed:	05/03/02

Analyte	Result	RD
MTBE	16	5.1

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	104	75-128
Toluene-d8	102	80-111
Bromofluorobenzene	94	77-126

**Purgeable Aromatics by GC/MS**

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8260B
Field ID:	MW-4 @ 26'	Diln Fac:	1.042
Lab ID:	158279-031	Batch#:	72025
Matrix:	Soil	Sampled:	04/23/02
Units:	ug/Kg	Received:	04/24/02
Basis:	as received	Analyzed:	05/03/02

Analyte	Result	RL
MTBE	ND	5.2

Surrogate	REC	Limits
1,2-Dichloroethane-d4	109	75-128
Toluene-d8	100	80-111
Bromofluorobenzene	95	77-126

ND= Not Detected

RL= Reporting Limit

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Purgeable Aromatics by GC/MS

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8260B
Type:	BLANK	Basis:	as received
Lab ID:	QC177422	Diln Fac:	1.000
Matrix:	Soil	Batch#:	72025
Units:	ug/Kg	Analyzed:	05/02/02

Analyte	Result	RL
MTBE	ND	5.0

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	124	75-128
Toluene-d8	106	80-111
Bromofluorobenzene	102	77-126

Purgeable Aromatics by GC/MS

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8260B
Type:	LCS	Basis:	as received
Lab ID:	QC177390	Diln Fac:	1.000
Matrix:	Soil	Batch#:	72025
Units:	ug/Kg	Analyzed:	05/02/02

Analyte	Spiked	Result	%REC	Limits
MTBE	50.00	55.22	110	51-136

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	120	75-128
Toluene-d8	106	80-111
Bromofluorobenzene	101	77-126

Purgeable Aromatics by GC/MS

Lab #:	158279	Location:	15101 Freedom Blvd.
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 5030B
Project#:	2550	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.020
MSS Lab ID:	158336-001	Batch#:	72025
Matrix:	Miscell.	Sampled:	04/30/02
Units:	ug/Kg	Received:	04/30/02
Basis:	as received	Analyzed:	05/03/02

Type: MS Lab ID: QC177456

Analyte	MSS Result	Spiked	Result	%REC	Limits
MTBE	1.018	51.02	49.55	95	38-140

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	106	75-128
Toluene-d8	103	80-111
Bromofluorobenzene	94	77-126

Type: MSD Lab ID: QC177457

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	51.02	46.50	89	38-140	6	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	75-128
Toluene-d8	102	80-111
Bromofluorobenzene	96	77-126

RPD= Relative Percent Difference



A N A L Y T I C A L R E P O R T

Prepared for:

SOMA Environmental Engineering Inc.
2680 Bishop Dr.
Suite 203
San Ramon, CA 94583


Date: 30-MAY-02
Lab Job Number: 158675
Project ID: 2552
Location: 15101 Freedom Avenue

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis.

Reviewed by:


Project Manager

Reviewed by:


Operations Manager

This package may be reproduced only in its entirety.

Laboratory Number: 158675
Client: Soma Environmental Engineering, Inc.
Project Name: 15101 Freedom Boulevard
Project #: 2550
Receipt Date: 05/24/02

CASE NARRATIVE

This hardcopy data package contains sample results and batch QC results for five soil samples received from the above referenced project on April 24th, 2002. The samples were received cold and intact.

Metals (EPA 6010B):

No analytical problems were encountered.

Total Organic Carbon (Walkley-Black):

No analytical problems were encountered.

Subcontracted Analysis

Bulk Density (ASTM D2216):

This analysis was performed by PTS Laboratories, Inc. of Santa Fe Springs, California. Please see the PTS Laboratories, Inc. case narrative.

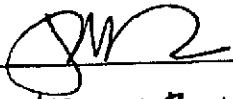
CHAIN OF CUSTODY FORM

Analyses

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510)486-0900 Phone
(510)486-0532 Fax

C&T
LOGIN # 158279

Project No: 2550
Project Name: Paved/SL
Project P.O.: 1501 Freedom Blvd.
Turnaround Time: standard

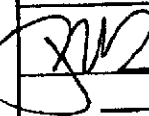
Sampler: RW Papler 
Report To: MARGARY SEPULCHER / ROGER PAPLER
Company: SOMA Env. Eng.
Telephone: (925) 244-1660
Fax: (925) 244-1661

TPA - GY 8015													
BTEX - MIBE 8020													
MIBE Lampiran 8260													
TCE - Health Technology (USA)													
Bulk Density													


Laboratory Number	Sample ID.	Sampling Date Time	Matrix			# of Containers	Preservative				Field Notes
			Soil	Water	Waste		HCL	H2SO	HNO3	ICE	
-27	MW-4e-11 ^o	22 Apr 2002	x								Borehole MW-4
-28	MW-4e-16 ^o		x								
-29	MW-4e-21 ^o		x								
-30	MW-4e-23 ^o		x								
-31	MW-4e-26 ^o		x								
-32	MW-4e-29 ^o		x								MW-5
0-33	MW-5e-16 ^o	22 Apr 2002	x								
0-34	MW-5e-17 ^o		x								
0-35	MW-5e-18 ^o		x								
0-36	MW-5e-15 ^o		x								
0-37	MW-5e-18 ^o		x								
0-38	MW-5e-19 ^o		x								
0-39	MW-5e-20 ^o		x								
0-40	MW-5e-21 ^o		x								
0-41	MW-5e-22 ^o		x								

Notes: Please analyze end of sample as indicated on steel sleeve w/ red marking RW# MW-4e-26^o (+) / MW-5e-22^o (+)
Please confirm pos. MIBE result of 8260

RELINQUISHED BY:

 RW Papler
DATE/TIME: 22 Apr 02 / 14²⁵

RECEIVED BY:

 Roger Papler
DATE/TIME: 4/24/02 1436

DATE/TIME _____ DATE/TIME _____
DATE/TIME _____ DATE/TIME _____

Signature

MAY 20 02 11:13A

Lead

Lab #:	158675	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3050
Project#:	2552	Analysis:	EPA 6010B
Analyte:	Lead	Batch#:	72456
Matrix:	Soil	Sampled:	04/22/02
Units:	mg/Kg	Received:	04/24/02
Basis:	as received	Prepared:	05/21/02
Diln Fac:	1.000	Analyzed:	05/27/02

Field ID	Type	Lab ID	Result	RL
MW-5 @ 6'	SAMPLE	158675-001	1.6	0.14
MW-5 @ 19.5'	SAMPLE	158675-003	0.22	0.14
MW-5 @ 10'	SAMPLE	158675-006	0.55	0.13
	BLANK	QC178995	ND	0.15

ND= Not Detected

L= Reporting Limit



Lead

Lab #:	158675	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Prep:	EPA 3050
Project#:	2552	Analysis:	EPA 6010B
Analyte:	Lead	Diln Fac:	1.000
Matrix:	Soil	Batch#:	72456
Units:	mg/Kg	Prepared:	05/21/02
Basis:	as received	Analyzed:	05/22/02

Type	Lab ID	Spiked	Result	%REC	Limite	RPD	Lim
BS	QC178996	100.0	84.65	85	70-120		
BSD	QC178997	100.0	85.90	86	70-120	1	20

Lead

Lab #: 158675	Location: 15101 Freedom Avenue
Client: SOMA Environmental Engineering Inc.	Prep: EPA 3050
Project#: 2552	Analysis: EPA 6010B
Analyte: Lead	Diln Fac: 1.000
Field ID: ZZZZZZZZZZ	Batch#: 72456
MSS Lab ID: 158669-001	Sampled: 05/17/02
Matrix: Soil	Received: 05/17/02
Units: mg/Kg	Prepared: 05/21/02
Basis: as received	Analyzed: 05/22/02

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC178998	10.67	80.97	73.68	78	46-128		
MSD	QC178999		96.15	90.10	83	46-128	5	39

RPD= Relative Percent Difference

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Total Organic Carbon (TOC)

Lab #:	158675	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Analysis:	WALKLEY-BLACK
Project#:	2552		
Analyte:	Total Organic Carbon	Batch#:	72411
Matrix:	Soil	Sampled:	04/22/02
Units:	%	Received:	04/24/02
Basis:	as received	Analyzed:	05/20/02

Field ID	Type	Lab ID	Result	RL	Diln Fac
MW-5 @ 6'	SAMPLE	158675-001	0.13	0.03	3.000
MW-5 @ 19.5'	SAMPLE	158675-003	0.05	0.01	1.000
MW-5 @ 10'	SAMPLE	158675-006	0.07	0.01	1.000
	BLANK	QC178844	ND	0.01	1.000

ND= Not Detected

L= Reporting Limit

Total Organic Carbon (TOC)

Lab #:	158675	Location:	15101 Freedom Avenue
Client:	SOMA Environmental Engineering Inc.	Analysis:	WALKLEY-BLACK
Project#:	2552		
Analyte:	Total Organic Carbon	Basis:	as received
Field ID:	MW-5 @ 6'	Batch#:	72411
MSS Lab ID:	158675-001	Sampled:	04/22/02
Matrix:	Soil	Received:	04/24/02
Units:	%	Analyzed:	05/20/02

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Diln	Fac
LCS	QC178845		0.1300	0.1200	92	76-120				3.000
MS	QC178846	0.1260	0.2200	0.2340	50	35-146				7.000
MSD	QC178847		0.2100	0.2670	67	35-146	13	32		6.000

RPD= Relative Percent Difference

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Curtis & Tompkins, Ltd.

May 24, 2002

Mr. Paul Prendergast
Curtis & Tompkins
2323 Fifth St.
Berkeley, CA 94710

Re: 158675
PTS File: 32216

Dear Mr. Prendergast:

Enclosed are final data for your Project # 158675. All analyses were performed by applicable ASTM, EPA or API methodology. Samples will be retained for 30 days before disposal unless other arrangements are made.

We appreciate the opportunity to be of service and trust these data will prove beneficial in the development of this project. Please feel free to call me at (562) 907-3607 should you have any questions or require additional information.

Sincerely,

PTS Laboratories, Inc.



Larry Kunkel
District Manager

LK/vk

encl.

PHYSICAL PROPERTIES DATA

(METHODOLOGY: ASTM D2216, API RP40)

PROJECT NAME: N/A
PROJECT NO: 158675

SAMPLE ID.	DEPTH, ft.	SAMPLE ORIENT. (1)	MOISTURE CONTENT (% wt)	DENSITY	
				BULK (g/cc)	GRAIN (g/cc)
MW-5@9.5	9.50	V	19.10	1.83	2.73
MW-5@20	20.00	V	9.34	1.89	2.87

(1) Sample Orientation: H = horizontal; V = vertical

32216

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900
(510) 486-0532

Project Number: 158675

Subcontract Laboratory:
PTS Laboratories, Inc
8100 Secura Way
Santa Fe Springs, CA 90670
(562) 907-3607
ATTN: Rick Young

Turnaround Time: 5 DAY TAT (DUE 5/27) Report Level: II

Please send report to: Paul Prendergast

*** Please report using Sample ID rather than C&T Lab #.

Sample ID	Sampled	Matrix	Analysis	C&T Lab #	Comments
MW-5 @ 9.5'	04/22	Soil	DENSITY	158675-002	
MW-5 @ 20'	04/22	Soil	DENSITY	158675-004	

Notes:	Relinquished By:	Received By:
	<i>Ken Makara</i>	<i>Ray A. Sullivan</i>
	Date/Time: <i>5-20-02 2:15 p.m.</i>	Date/Time: <i>5/21/02 2:30</i>