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Prepared for
Port of Oakland
530 Water Street, Oakland, California

Report of Additional Investigation and Groundwater Monitoring Well Installation and Sampling at 2277 Seventh Street, Oakland, California

November 10, 1994

Prepared by

Uribe & Associates
Environmental Consulting Services

2930 Lakeshore Avenue, Suite 200
Oakland, California 94610-3614

PORT OF OAKLAND

November 18, 1994

Jennifer Eberle
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda CA 94502

Dear Ms. Eberle:

SUBJECT: REPORT OF ADDITIONAL INVESTIGATION AND GROUNDWATER MONITORING WELL INSTALLATION AND SAMPLING AT 2277 SEVENTH ST, OAKLAND, CALIFORNIA (Port Contract # 93394)

The purpose of this letter is to transmit a copy of the above-referenced report, dated November 10, 1994, prepared by Uribe & Associates (U&A).

If you have any questions regarding the information contained in the report, or regarding U&A's recommendations, please feel free to contact me at 272-1220.

Sincerely,

Dan Schoenholz
Associate Environmental Scientist

Enclosure

cc(w/enclosure): Don Ringsby, Dongary Investments
(w/o enclosure): Gerard Slattery, Uribe & Associates
Terry Surel
Neil Werner

Prepared for
Port of Oakland
530 Water Street, Oakland, California

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Report of Additional Investigation and Groundwater Monitoring Well Installation and Sampling at

2277 Seventh Street, Oakland, California

November 11, 1994

Prepared for
Port of Oakland,
Oakland, California

Prepared by
Uribe & Associates
Oakland, California

Report of Additional Investigation and Groundwater Monitoring Well Installation and Sampling at 2277 Seventh Street, Oakland, California

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1 Introduction

1.1 Purpose

This report presents the results of an environmental investigation performed by Uribe & Associates (U&A) involving the drilling and sampling of nine soil borings and installation of three groundwater monitoring wells. This investigation was conducted at Port of Oakland Building C-401 located at 2277 Seventh Street, Oakland, California (Figure 1). The purpose of the investigation was to:

- Investigate soil and groundwater quality in the vicinity of four former Port-owned underground storage tanks (USTs) located adjacent to Building C-401.
- Evaluate groundwater gradients in the area of Building C-401
- Further characterize the nature of the contamination apparently migrating toward Building C-401 from an adjacent site.

1.2 Project Background and Site Description

Dongary Investments leases land from the Port of Oakland (Port) which they in turn sublease to three companies: Sealand Services (the Sealand sublease), ANR Freight (the ANR sublease), and NW Transport Services (Ramcon, 1993). Sealand also leases adjacent property from the Port of Oakland (the Sealand lease). Building C-401 is located on the Sealand lease within the Marine Terminals area of the Port. The site is currently a container storage and loading terminal. In addition to Building C-401, other site improvements include another building and a railroad spur (Figure 2). The site topography is generally flat and the elevation is approximately 15 feet above mean sea level.

In 1989, one 20,000-gallon diesel UST on the ANR sublease failed a leak detection test. The tank was removed in 1990. Soil samples were collected during the tank removal and hydrocarbon contamination was found below the former diesel tank (Ramcon, 1993). In 1992, Dongary Investments removed eight other USTs they owned; one waste oil tank from the Sealand sublease, six additional diesel tanks from the ANR sublease, and one bulk oil tank from the ANR sublease (Figure 2). A hole was observed in the bulk oil tank at the time it was removed. Soil and groundwater contamination were reported during the removal of the tanks and subsequent site characterization activities were conducted by Dongary Investments (Ramcon, 1993). The results of these investigations indicated that

no gasoline UST?

contamination extended northwest from the former UST locations on the ANR sublease toward the locations of four Port-owned USTs adjacent to Building C-401.

In September 1993, the four Port-owned USTs were excavated and removed. These tanks had contained gasoline (two tanks), fresh motor oil, and waste oil (U&A, 1994). At the time the tanks were removed they were visually inspected an no holes were observed. Total petroleum hydrocarbons as diesel (TPH-D), total petroleum hydrocarbons as gasoline (TPH-G), and benzene, toluene, ethylbenzene, and xylenes (BTEX) were detected in soil samples from the tank excavation. In addition, floating product was observed on groundwater within the excavation.

In response to the petroleum hydrocarbons detected in the excavation, the Port submitted a work plan for additional site investigation (U&A, 1994; Appendix G) to the Alameda County Department of Environmental Health (ACDEH). The work plan was approved by ACDEH and this report presents the results of implementing the plan.

1.3 Regional and Site Geology/Hydrogeology

The area of the Port encompassing the site is underlain by fill. The fill consists of material dredged from the estuary and material brought from other undetermined areas. The soils encountered at the site during the UST removals consisted of angular gravel with sand and silt to approximately 7 to 10 feet below ground surface (bgs) and Bay Mud to the base of the excavation. This is generally consistent with the soils reportedly encountered during the investigation initiated by Dongary Investments (Ramcon, 1993). Additionally, in some areas of the Port-owned UST excavation, wooden pilings were located beneath the surface.

The groundwater depth in the open excavation for the Port-owned USTs was approximately 11 feet bgs. Groundwater elevations appear to fluctuate seasonally and in February 1994 groundwater was observed at approximately 6 feet bgs in the open pit remaining from the removal of Dongary Investment's UST from the Sealand sublease. Groundwater elevations are also reported to fluctuate under tidal influences; Ramcon reported observing approximately 1 foot of groundwater elevation change in response to tidal influence during the excavation of the USTs at the ANR sublease (Ramcon, 1992).

An investigation conducted by Southern Pacific northeast of the site concluded that the groundwater gradient at that site was to the northwest (Ramcon, 1993). Data collected during two rounds of groundwater monitoring conducted at the ANR site indicate two different groundwater gradients; westerly in January 1993 (Ramcon, 1993) and south-southwesterly in September 1994 (Groundwater Technology, 1994). The northwesterly gradient is consistent with contaminant migration from the former UST location on the ANR sublease toward the former location of the Port-owned USTs, as reported by Ramcon (Ramcon, 1993).

2 Drilling, Soil and Groundwater Sampling, and Monitoring Well Installation Procedures

2.1 Soil Sampling and Analysis

On May 16 and 17, 1994, U&A oversaw the drilling of nine soil borings (SB-1 through SB-6 and MW-1 through MW-3) and subsequent conversion of three of these borings into groundwater monitoring wells (MW-1 through MW-3; Figure 2). The drilling permit from Alameda County Water Agency, Zone 7 is included as Appendix A. The soil borings were advanced using a truck-mounted drill rig operated by Gregg Drilling and Testing, Inc. Soil samples were collected in each boring at five foot intervals. The six borings not completed as monitoring wells were abandoned by backfilling with Portland cement. Appendix B contains the boring logs. Drilling and soil sampling was conducted as described in U&A standard operating procedures (SOPs) included as Appendix C.

The 5-foot-bgs sample from each of the nine soil borings was submitted to D&M Laboratories of Petaluma, California for analysis. Samples collected from below the groundwater level were not analyzed. Each of the soil samples was analyzed for TPH-D, TPH-G, and BTEX. Analyses were conducted using modified EPA method 8015 (TPH-D and TPH-G) and EPA method 8020 (BTEX).

Soil cuttings generated during drilling were placed in 55-gallon drums and temporarily stored on site pending proper disposal.

2.2 Borehole Groundwater Sampling

Borings SB-1 through SB-6, drilled on May 17, 1994, were extended approximately 1 to 4 feet below the level at which groundwater was first encountered in each boring. After the augers were removed and prior to backfilling, a temporary well screen was inserted into each boring and a groundwater sample was collected. These samples were analyzed for TPH-D, TPH-G, and BTEX using the analytical methods noted in Section 2.1.

2.3 Monitoring Well Construction

The three borings completed as monitoring wells were drilled to 15 feet bgs. Each well was constructed with 10 feet of 2-inch diameter, 0.020-inch slotted PVC well screen installed from 5 to 15 feet bgs. Two-inch diameter, schedule 40 PVC blank casing was installed from 5 feet bgs to approximately the ground surface. The gravel pack for each well was constructed of #2/16 sand installed from 4 to 15 feet bgs. A 1 foot thick layer of bentonite

was placed immediately above the top of the gravel pack. Portland cement was used to fill the remainder of the annulus, create a surface seal, and secure the grade-level well enclosures. Well construction details for each well are included in Appendix B.

The groundwater monitoring wells were surveyed by Greiner, Inc., of Pleasanton, California on June 8, 1994. The wells were surveyed to the Port of Oakland Datum (3.2 feet below mean sea level).

2.4 Well Development

Monitoring well MW-2 was developed on May 25, 1994. Prior to well development, the depth to groundwater in MW-2 was measured using a flat tape water level meter. For development, the well was surged with a surge block and bailed in accordance with the SOP included in Appendix C. Water parameters monitored during development included pH, temperature, and electrical conductivity. Wells MW-1 and MW-3 were not developed due to the presence of floating product within these wells. Depth to product and depth to water measurements in these wells were made with and oil-water interface probe.

2.5 Monitoring Well Groundwater and Product Sampling

A groundwater sample was collected from well MW-2 on May 27, 1994. Groundwater sampling was conducted in accordance with the SOP included in Appendix C. The groundwater samples were analyzed for TPH-G, TPH-D, and BTEX using the analytical methods noted in Section 2.1. Wells MW-1 and MW-3 were not sampled due to the presence of floating product within these wells. Purge water generated during well development and sampling was placed in 55-gallon drums and temporarily stored on site. This water was subsequently collected for disposal by Decon Environmental Services (Decon) in September 1994.

On June 7, 1994, a sample of product was collected from MW-3 using a bailer. This sample was sent to the D&M Laboratories for analysis to identify the type of product present.

2.6 Floating Product Recovery

As noted in above and discussed in Section 3, floating product was observed in wells MW-1 and MW-3. Consequently, product recovery was conducted on a weekly basis over the eight week period from June 30 to August 18, 1994. Product recovery was performed by manual bailing during this period. The recovered product was placed in 55-gallon drums and temporarily stored on site until it was collected for disposal by Decon in September, 1994.

3 Results

3.1 Geology/Hydrogeology

The soils encountered during drilling consisted predominantly of silt, silty sand, and sand overlain by approximately 2 to 4 feet of aggregate rock fill and asphalt. Detailed soil descriptions for each boring are presented on the boring logs included in Appendix B.

First groundwater was encountered at approximately 8 to 13 feet bgs. Stabilized groundwater levels measured in MW-2 on May 25, 1994 were approximately 9 feet bgs. The groundwater levels measured in wells MW-1 and MW-3 on May 25, 1994 were approximately 9 and 15 feet bgs, respectively. The groundwater surface in both MW-1 and MW-3 has been depressed by the overlying floating product layer. Groundwater elevation data generated at the site during the well development and subsequent product bailing are presented in Table 1.

As noted in Section 1.3, and discussed in Section 4, groundwater flow is thought to be to the northwest. Due to the presence of the floating product in MW-1 and MW-3, a reliable groundwater gradient calculation cannot be made with the groundwater elevation data from the three wells. Consequently, the suspected northwesterly groundwater flow in the vicinity of Building C-401 can only be inferred from other observations at this time.

3.2 Analysis of Soil Samples

TPH-D was reported in the soil samples from borings SB-1 and SB-2 at concentrations 10 and 43 milligrams per kilogram (mg/kg), respectively. TPH-G was not reported in any of the soil samples analyzed. BTEX was detected in soil sample MW-1 5.0. The concentrations of BTEX reported were 2.9, 5.4, 9.7, and 30 mg/kg, respectively. The soil analyses results are summarized in Table 2 and the laboratory report is presented in Appendix D.

3.3 Analysis of Groundwater and Product Samples

TPH-D was detected in all of the groundwater samples submitted for analysis. The highest concentration was 210,000 milligrams/liter (mg/l) reported in the sample from boring SB-1. The lowest concentration, 0.47 mg/l, was reported in MW-2. Figure 3 illustrates the distribution of TPH-D in the groundwater samples.

TPH-G was reported in groundwater samples from boring SB-2 (23 mg/l) and well MW-2 (0.087 mg/l). One or more BTEX compounds were detected in five of the seven groundwater samples submitted for analysis. The highest concentrations of benzene, toluene, and xylenes were reported in the sample from SB-1 at 4.2, 1.9, and 14 mg/l, respectively. The highest concentration of ethylbenzene reported was 0.057 mg/l in the sample from SB-2. The samples where no BTEX was reported were SB-4 and MW-2.

The results of the floating product analysis concluded that the product was diesel.

Table 3 summarizes the laboratory results for the groundwater samples. Complete laboratory reports, including the analytical data for the product sample, are included in Appendix D.

3.4 Floating Product Recovery

During well development on May 25, 1994, 0.18 and 6.88 feet of floating product was measured in MW-1 and MW-3, respectively. Consequently, the Port proposed to conduct an eight-week product recovery program. This program was approved by the ACDEH. At the time product bailing was initiated on June 30, 1994, 0.55 and 6.14 feet of floating product was measured in MW-1 and MW-3, respectively. By August 18, 1994, when bailing was concluded, approximately 303 gallons of product had been removed from MW-3 and approximately 15 gallons of product had been removed from MW-1. During the bailing program the product thickness in MW-3 decreased by 1.24 feet while the product thickness in MW-1 increased by 0.58 feet. Data collected during the product recovery program are summarized in Table 1.

4 Conclusions and Recommendations

4.1 Conclusions

Soil and groundwater in the vicinity of Building C-401 have been impacted by petroleum hydrocarbons, including TPH-D, TPH-G and BTEX. The most laterally extensive contaminant indicated by the data collected during the investigation is TPH-D. The full extent of TPH-D at the site has not been characterized.

The likely source(s) of the TPH-D and floating product detected during this investigation are the USTs formerly located on the ANR sublease. This conclusion is consistent with the following observations:

- One of the USTs formerly at the ANR site stored diesel fuel and failed a tank integrity test. A second UST removed from the ANR sublease was observed to have a hole in it.

- The product in monitoring wells MW-1 and MW-3 was identified as diesel during lab testing. Diesel fuel was reportedly not stored in the Port-owned USTs prior to their removal.

- No holes were observed in the Port-owned USTs after they were excavated.

- The highest concentrations of TPH-D in groundwater were reported in the samples from borings SB-1 and SB-2. As discussed below, these borings are located in the inferred downgradient direction from the USTs formerly located on the ANR sublease (and in the inferred upgradient direction from the former Port-owned USTs).

not true

- Soil contamination or product was observed at the 4 to 5 foot bgs level in several soil borings near the former ANR UST location during the investigation conducted by Ramcon. No shallow soil contamination was reported in the soil samples from the three monitoring wells installed near the former location of the Port-owned USTs. The distribution of shallow soil contamination suggests that the diesel source is in the area of the ANR USTs rather than the Port-owned USTs.

except 2.9 ppm benzene in MW1-5

- Ramcon, Dongary's consultant, identified the former ANR sublease USTs as a source of diesel contamination and reported a floating product plume moving directly toward the location of the former Port-owned USTs.

The floating product appears to be migrating in a northwesterly direction. This conclusion is consistent with the following observations:

- Data generated in late 1992 by Ramcon (Ramcon, 1993) led them to conclude that floating product was present throughout the area of the former ANR UST location and extended toward the former location of the Port-owned USTs. During the investigation reported herein, soil borings SB-1 and SB-2 were drilled within the area of floating product reported by Ramcon. However, no product was detected in these borings. This indicates that product has migrated from this area and/or degraded.

- Based on Ramcon's data, they concluded that the product did not quite extend into the area of the Port-owned USTs in late 1992. Nevertheless, in late 1993, during removal of the Port-owned USTs, a black, oily petroleum liquid was observed floating in the tank excavation. Finally, over six feet of product has been detected in well MW-3 since it was installed in May 1994. These data suggest a trend of increasing product thickness in the area of the Port-owned USTs since 1992. This trend is consistent with migration of product into the area. This trend is also inconsistent with the Port-owned USTs as the source of the product because the product thickness has apparently continued to increase despite the removal of the tanks.

- During the 1992 removal of Dongary Investment's diesel USTs, floating product was recovered from the groundwater surface within the tank excavation. This excavation stayed open for several months following the UST removal. No floating product was reportedly observed re-entering the excavation during the time it was open. This observation is consistent with product migrating away from the former location of the Dongary Investment's USTs. Since significant product is now located near the former location of the Port-owned USTs, it is reasonable to infer that product migration is in a northwesterly direction.

The extent and volume of floating hydrocarbons near Building C-401 is not fully known at this time. The product extends beyond the area bounded by the existing monitoring wells. Despite the removal of over 300 gallons of product, the product thickness measured in MW-1 and MW-3 was not significantly diminished. This suggests that a significant volume of product may still be present in the subsurface.

Although unconfirmed at this time, observations suggest that overall groundwater flow is toward the northwest. These observations include.

- As discussed above: (1) shallow soil in the area around the former location of the Port-owned USTs did not exhibit significant soil contamination; (2) shallow soil near the ANR USTs did exhibit significant soil contamination; (3) product did not reappear in the Dongary Investment's UST excavation, and; (4) significant product is now present

in the area of the former Port-owned USTs. These observations are consistent with a leak originating at the former ANR USTs and migrating northwesterly with groundwater toward the location of the former Port-owned USTs.

- Also as discussed above, the trend in product distribution suggests that product is moving northwesterly with groundwater.

The two groundwater flow directions reported by Ramcon (1993) and Groundwater Technology (1994), to the west and south-southwest, respectively, are inconsistent with U&A's conclusion that groundwater flow appears to be in a northwesterly direction. However, it must be noted that the flow directions reported by Ramcon and Groundwater Technology are based on measurements taken within an area where groundwater is subject to tidal effects. Consequently, without additional data on the impacts of tidal effects, these two individual measurements cannot be relied upon to portray an accurate picture of general groundwater flow conditions over time at the site.

No specific source of the TPH-G and BTEX reported in soil and/or groundwater samples has been confirmed. Gasoline was stored in two of the former Port-owned USTs and TPH-G and BTEX were reported in soil samples collected at the time of the tanks were removed. However, TPH-G has also been reported in a soil sample collected from the ANR excavation (U&A, 1994), and the highest concentration of TPH-G was detected in the groundwater sample from SB-2. These data suggest that the ANR sublease could also be a source of the TPH-G and/or BTEX.

4.2 Recommendations

U&A makes the following recommendations:

- Conduct quarterly monitoring of MW-2 as outlined in the work plan (U&A, 1994; Appendix A).

- Implement additional floating product recovery. (A detailed recommendation for this activity has been submitted under separate cover.)

- Conduct additional evaluation of groundwater gradients and the impacts of tidal effects on groundwater and contaminant migration.

5 References

Groundwater Technology, 1994, *Groundwater Monitoring and Sampling Report, Dongary Investments*, September 20, 1994

Ramcon, 1992, *Tank Removal Work Summary: Dongary Investments*, October 12, 1992

Ramcon, 1993, *Soil and Groundwater Site Assessment: Dongary Investments -- Oakland*, March 18, 1993

U&A, 1994, *Report of Underground Storage Tank Removals, Port of Oakland Building C-401, 2277 7th Street, Oakland*, February 23, 1994.

6 Remarks and Signature

This report is based on available information and was prepared in accordance with currently accepted geologic, hydrogeologic, and engineering practices. No other warranty is implied or intended. This report has been prepared for the sole use of the Port of Oakland and applies to the subject site only. Use of this report by third parties shall be at their sole risk.

Soil conditions indicated by boring logs presented in this report apply at the location of the boring and at the time of drilling. Subsurface condictions may differ at other locations and may change at the boring locaiton with the passage of time.

The work prepared herein was conducted under the direct supervision of the professional geologist, registered with the State of California, whose signature appears below.

Uribe & Associates

Gerard L. Slattery, R.G.
Senior Geologist, Operations Director
CRG No. 5038

Tables

Table 1:
Groundwater and Product Data for
Groundwater Monitoring Wells at
Building C-401, 2277 Seventh Street, Oakland

Well Date	Reference Elevation [1] (feet)	Well Depth [2] (feet)	Depth to Product [2] (feet)	Depth to Groundwater [2] (feet)	Thickness of Product in Well [3] (feet)	Estimated Amount Bailed (gallons) [4]
MW-1	14.17	15.4				
5/25/94			9.15	9.33	0.18	na
6/30/94			9.20	9.75	0.55	1.5
7/08/94			9.12	9.88	0.76	1.5
7/14/94			9.12	9.90	0.78	1.5
7/21-22/94			9.16	9.78	0.62	1.5
7/29/94			9.13	10.00	0.87	3
8/03/94			9.19	10.30	1.11	3
8/11/94			9.24	10.51	1.27	3
8/18/94			9.25	10.38	1.13	3
MW-2	14.38	15.18				
5/25/94			na	9.24	na	na
7/22/94			na	9.58	na	na
7/29/94			na	9.51	na	na
8/03/94			na	9.59	na	na
8/11/94			na	9.67	na	na
8/18/94			na	9.63	na	na
MW-3	14.24	15.3				
5/25/94			8.05	14.93	6.88	na
6/30/94			8.83	14.97	6.14	45
7/08/94			8.34	14.85	6.51	45
7/14/94			8.35	14.41	6.06	45
7/21-22/94			8.45	14.32	5.87	45
7/29/94			8.90	14.45	5.55	18
8/03/94			8.45	14.45	6.00	30
8/11/94			9.52	14.45	4.93	30
8/18/94			9.48	14.38	4.90	45

Notes:
na = not applicable

1 Reference elevation is top of well casing and relative to Port of Oakland Datum (3.2 feet below MSL). Reference elevations surveyed on June 8, 1994, by Greiner Associates.

2 Depths measured from top of well casing.

3 One or more depth to product measurements in MW-3 may have equaled the depth to the bottom of the well screen. Consequently, the associated product thickness measurements may have been greater if the well screen had been installed to a greater depth.

4 For MW-1 the estimated amount bailed is approximately 75% product vs. 25% water, For MW-3 the estimated amount bailed is 100% product.

Table 2:
Summary of Laboratory Results
From Soil Samples Collected from the Soil Borings Installed May 16 and 17, 1994 at Building C-401, 2277 Seventh Street, Oakland, California

Concentrations in mg/kg

Sample Id (Date)	TPH-G	TPH-D	Benzene	Toluene	Ethylbenzene	Xylenes
MW-1-5.0 (5/16)	ND (0.20) [1]	ND (5.0)	2.9	9.7	5.4	30
MW-2-5.0 (5/16)	ND (0.20)	ND (5.0)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
MW-3-5.0 (5/16)	ND (0.20)	ND (5.0)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
SB-1-5.0 (5/17)	ND (0.20) [2]	10 [3]	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
SB-2-5.0 (5/17)	ND (1.0) [4]	43 [5]	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
SB-3-5.0 (5/17)	ND (0.20)	ND (5.0)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
SB-4-5.0 (5/17)	ND (0.20)	ND (5.0)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
SB-5-5.0 (5/17)	ND (0.20) [6]	ND (5.0)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
SB-6-5.0 (5/17)	ND (0.20)	ND (5.0)	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)

Notes:
ND = Not detected (detection limit in parentheses)

[1] Laboratory Reported: The surrogate recovery was high due to the presence of interfering compounds in the sample. The detection limit was raised due to the high background from matrix interference's. 1,700 ppm gas range organics present which do not resemble a gasoline fingerprint.

[2] Laboratory Reported: 0.61 ppm gas range organics present which did not resemble a gasoline fingerprint.

[3] Laboratory Reported: The sample chromatograph resembled an "aged" hydrocarbon product.

[4] Laboratory Reported: The detection limit was raised due to the high background from matrix interference's. 66 ppm gas range organics present which do not resemble a gasoline fingerprint.

[5] Laboratory Reported: Hydrocarbons found in diesel range, but did not match a diesel fingerprint.

[6] Laboratory Reported: 0.34 ppm gas range organics present which did not resemble a gasoline fingerprint.

Table 3:
Summary of Laboratory Results
From Groundwater and Product Samples from Borings and Monitoring Wells at Building C-401, 2277 Seventh Street, Oakland, California

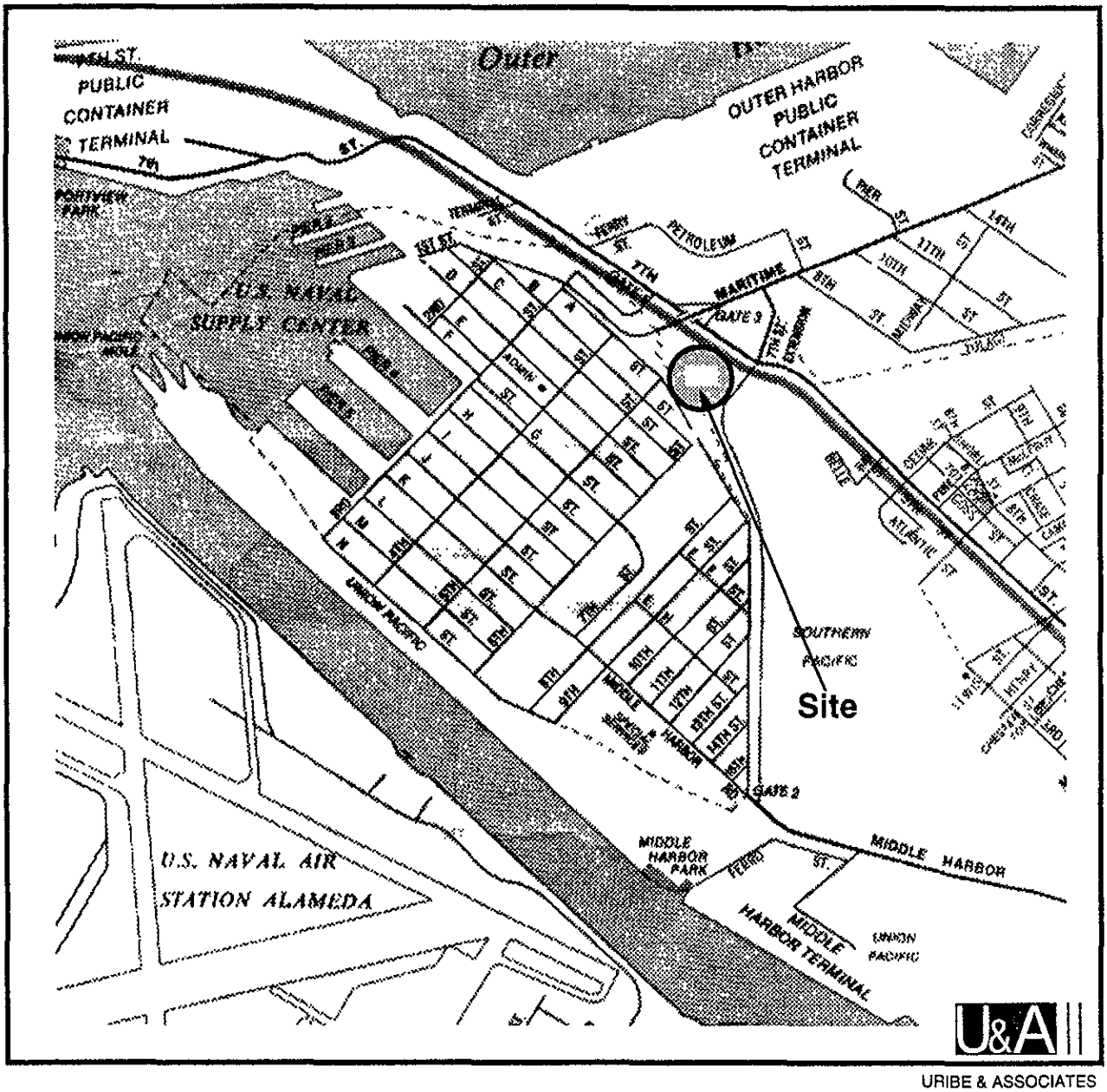
Concentrations in mg/l (groundwater) or mg/kg (product)

Sample ID	TPH-G	TPH-D	Benzene	Toluene	Ethylbenzene	Xylenes
SB-1	ND (0.050)	210,000 [2]	4.2	1.9	ND (0.0005)	14
SB-2	23 [3]	310 [2]	ND (0.0005)	0.011	0.057	0.130
SB-3	ND (0.050) [4]	810 [2]	ND (0.0005)	ND (0.0005)	0.0031	0.0093
SB-4	ND (0.050)	4.5	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
SB-5	ND (0.050) [5]	170 [2]	ND (0.0005)	ND (0.0005)	ND (0.0005)	0.023
SB-6	ND (0.050)	570 [2]	0.0012	ND (0.0005)	ND (0.0005)	0.079
MW-1	No groundwater or product sample collected					
MW-2	0.087	0.47 [6]	ND (0.0005)	ND (0.0005)	ND (0.0005)	ND (0.0005)
MW-3 [7]	ND (4,000)	1,000,000	NA	NA	NA	NA

Notes:
1 Laboratory reported: The detection limit was raised due to the dilution required by high-level analytes in the sample. Gas range organics present at high ppm level which do not resemble a gasoline fingerprint. Results are estimated due to a solubility problem.
2 Laboratory reported: Accurate quantitation of the surrogate was not possible due to the extent of dilution.
3 Laboratory reported: The surrogate recovery was high due to the presence of interfering compounds in the sample. Original run within holding time. Gas quantitated from a dilution run past holding time.
4 Laboratory reported: 1.4 ppm gas range organics present that do not resemble a gasoline fingerprint.
5 Laboratory reported: 5.6 ppm gas range organics present that do not resemble a gasoline fingerprint.
6 Laboratory reported: Surrogate recovery was low due to matrix effects. The MB and MBS surrogate recovery was acceptable. Hydrocarbons in the range of diesel were found but did not match a diesel fingerprint.
7 Product sample.
NA = Not analyzed for this parameter

* no lab reports included - I see typing.

Figures



URIBE & ASSOCIATES

Figure 1: Site Location Map

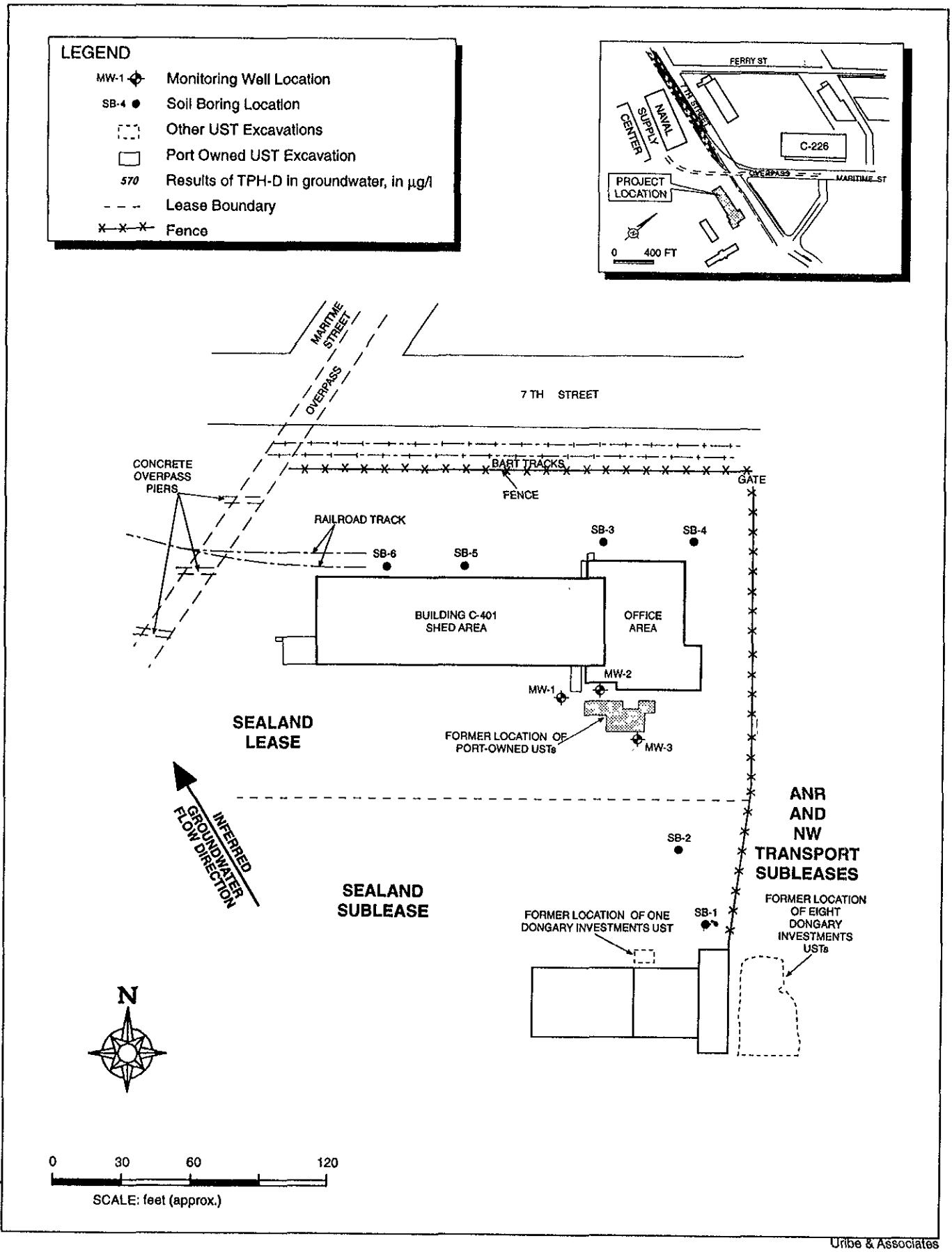


Figure 2: Site Plan

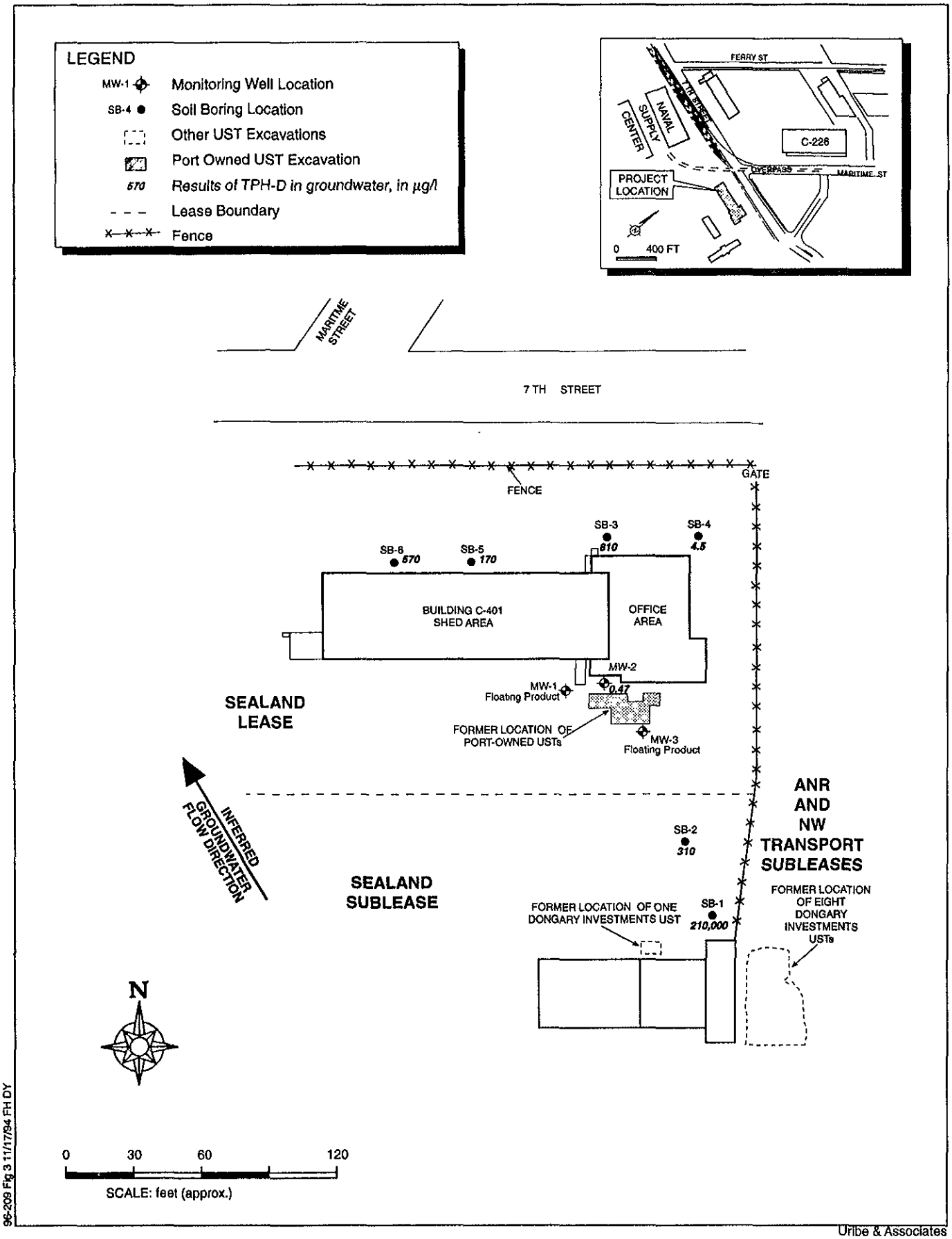


Figure 3: Site Plan with TPH-D Results from Groundwater Samples

Appendix A

Permit from Alameda County Water Agency, Zone 7

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 2277 Seventh St
Oakland CA

CLIENT
Name Port of Oakland
Address 530 Water St Phone
City Oakland Zip 94604

APPLICANT
Name John Borrego
Uribe & Associates
Address 2130 Lakeshore #24 Phone 832-2233
City Oakland Zip 94610

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger X
Cable ___ Other ___

DRILLER'S LICENSE NO. C57 - ~~554477~~ 485165

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 2 in. Depth 25 ft.
Surface Seal Depth 5 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings 6 Maximum
Hole Diameter 8 in. Depth 15 ft.

ESTIMATED STARTING DATE 4/14/94 *
ESTIMATED COMPLETION DATE 4/15/94

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

APPLICANT'S SIGNATURE John C Borrego Date 4/6/94

FOR OFFICE USE

PERMIT NUMBER 94236
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 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 WELLS, INCLUDING PIEZOMETERS
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. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

(C.) 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.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

* Project is not to start before 16 Apr 94 due to ten day non-compliance penalty of permit 93321 as discussed with Stephanie Knott of Uribe & Associates.

Approved Wyman Hong Date 14 Apr 9
Wyman Hong

31992

Appendix B

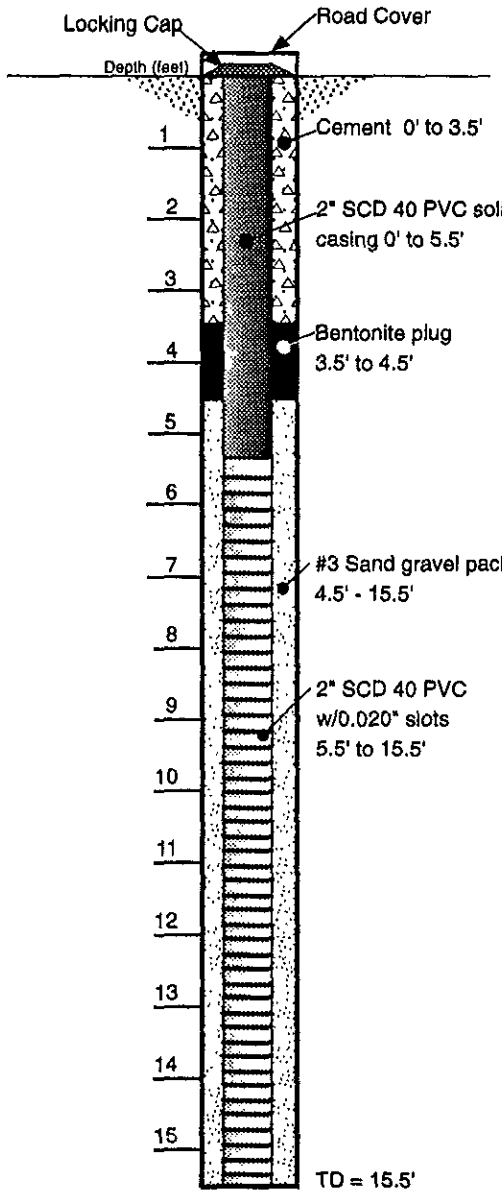
Boring Logs and Well Construction Details

Port of Oakland-2277 Seventh St.

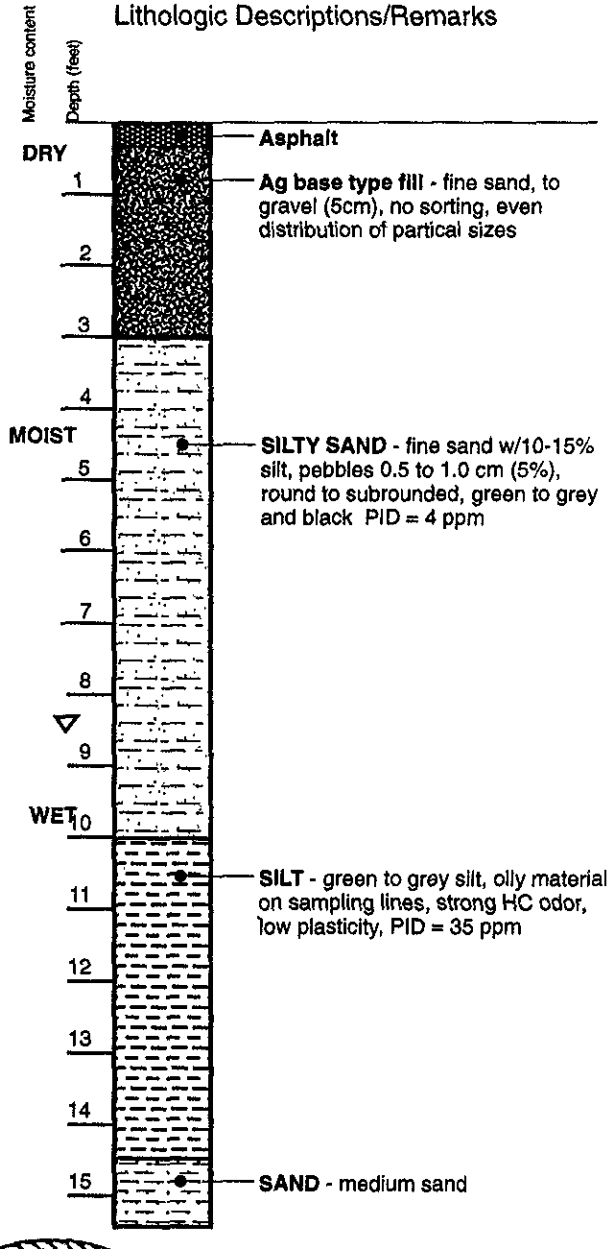
Bore Hole MW-1

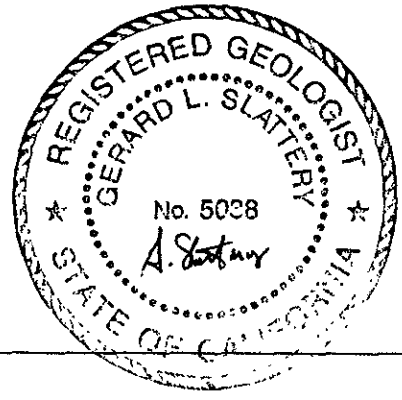
Date 5/16/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation 14.38
Recorded By JC Borrego
Registered Geologist

Well As-Built



Lithologic Descriptions/Remarks





96-209 MW-1 11/10/94 DY HH

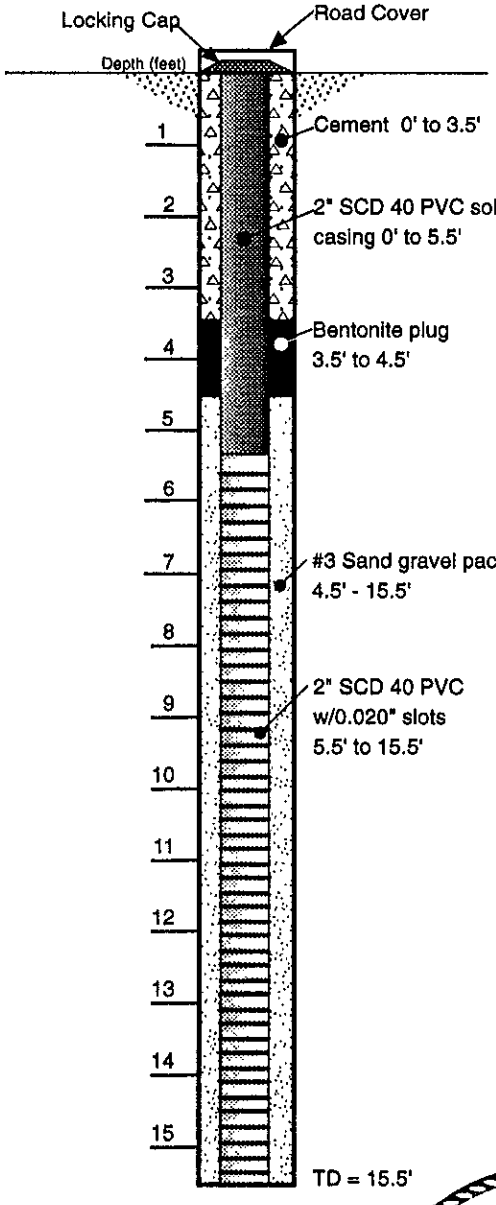
Uribe & Associates

Port of Oakland-2277 Seventh St.

Bore Hole MW-2

Date 5/16/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation 14.38
Recorded By JC Borrego
Registered Geologist

Well As-Built



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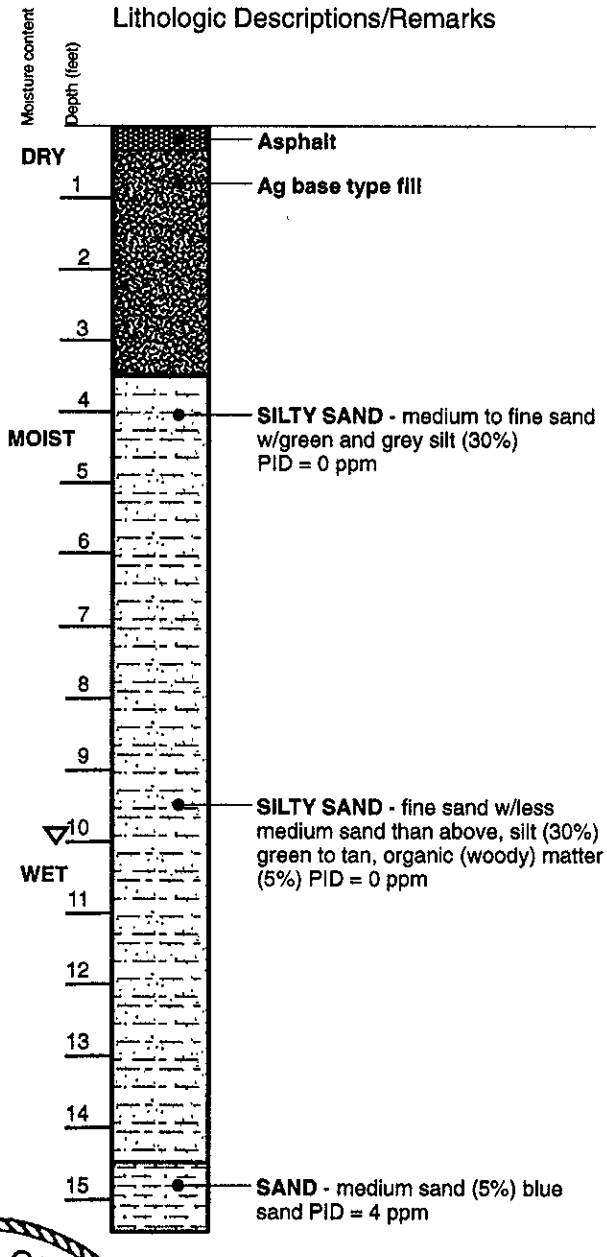
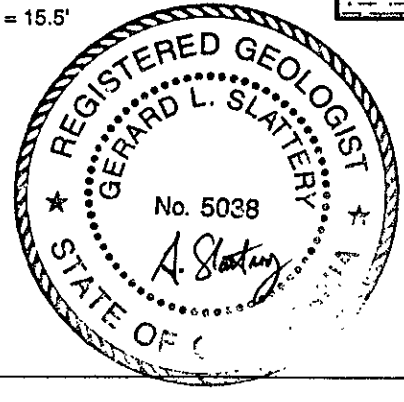




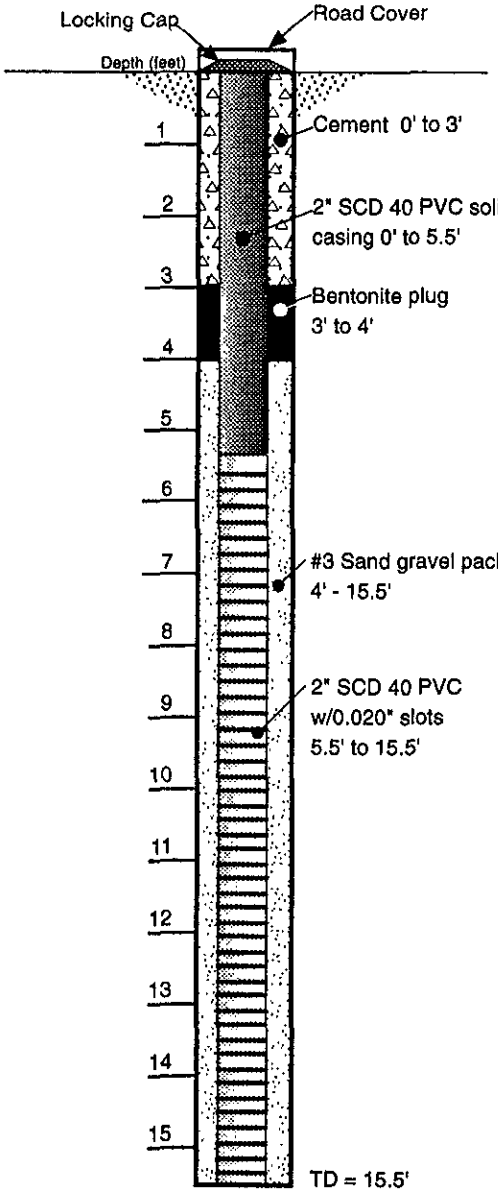
96-209 MW-2 9/27/94 DY FH

Port of Oakland-2277 Seventh St.

Bore Hole MW-3

Date 5/16/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation 14.24
Recorded By JC Borrego
Registered Geologist

Well As-Built



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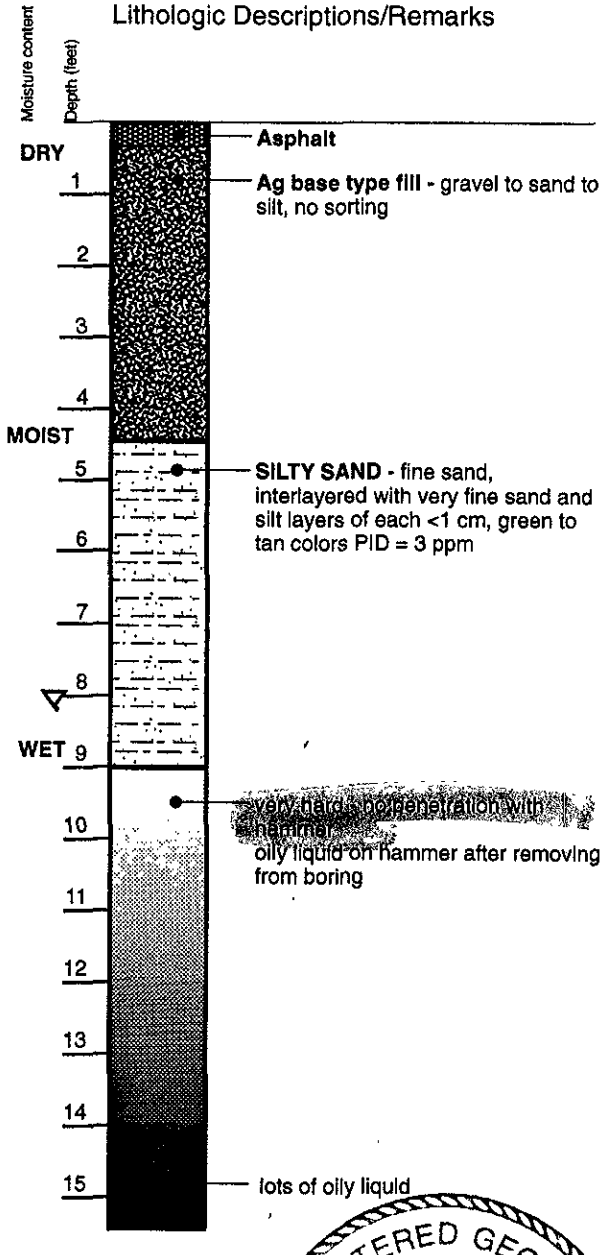


REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5038
STATE OF CALIFORNIA

Uribe & Associates

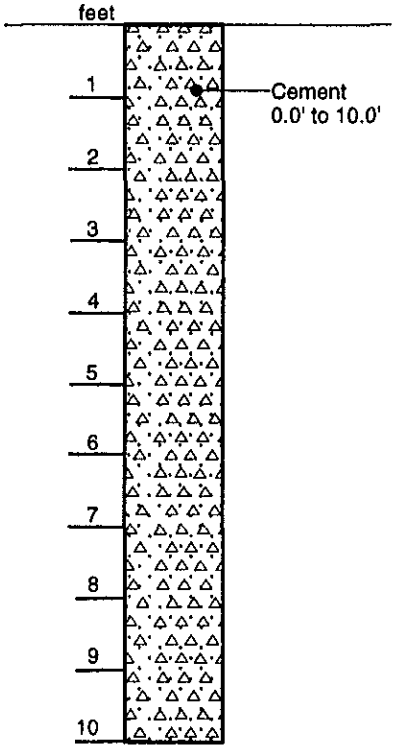
96-209 MW-3 9/27/94 DY FH

Port of Oakland-2277 Seventh St.

Bore Hole SB-1

Date 5/16/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



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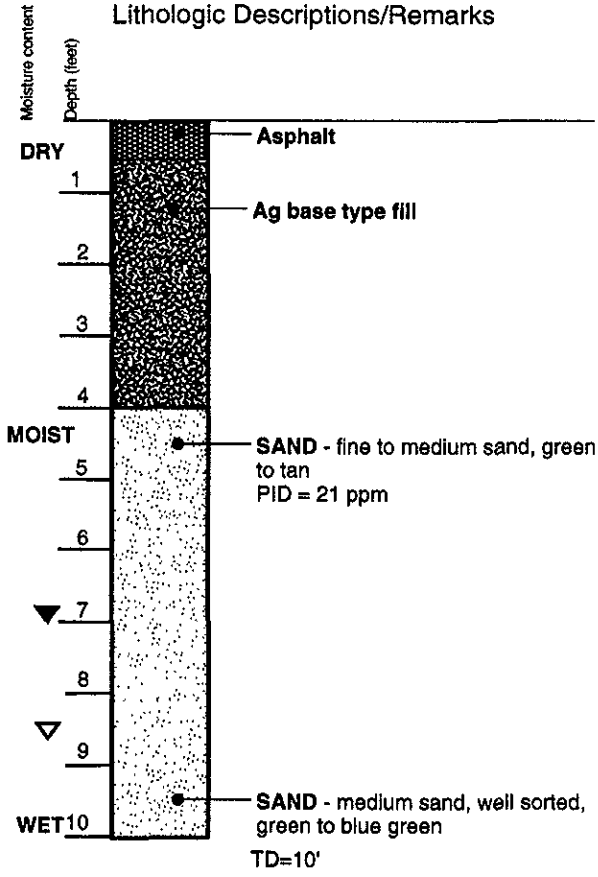


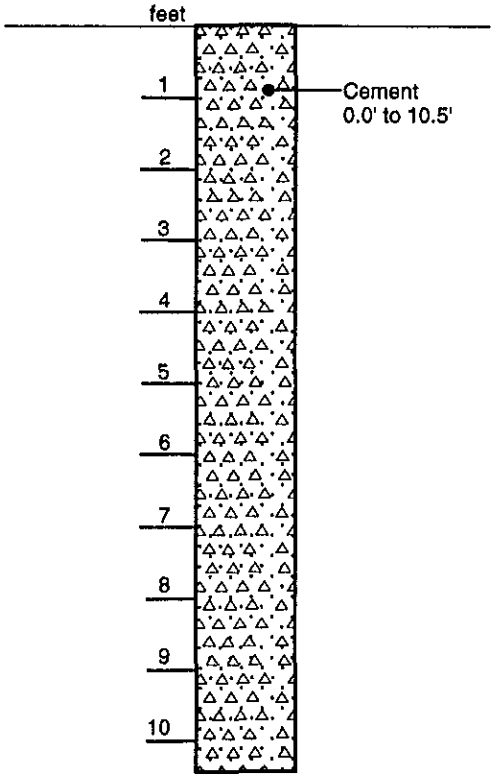
96-209 SB-1 9/27/94 DY FH

Port of Oakland-2277 Seventh St.

Bore Hole SB-2

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



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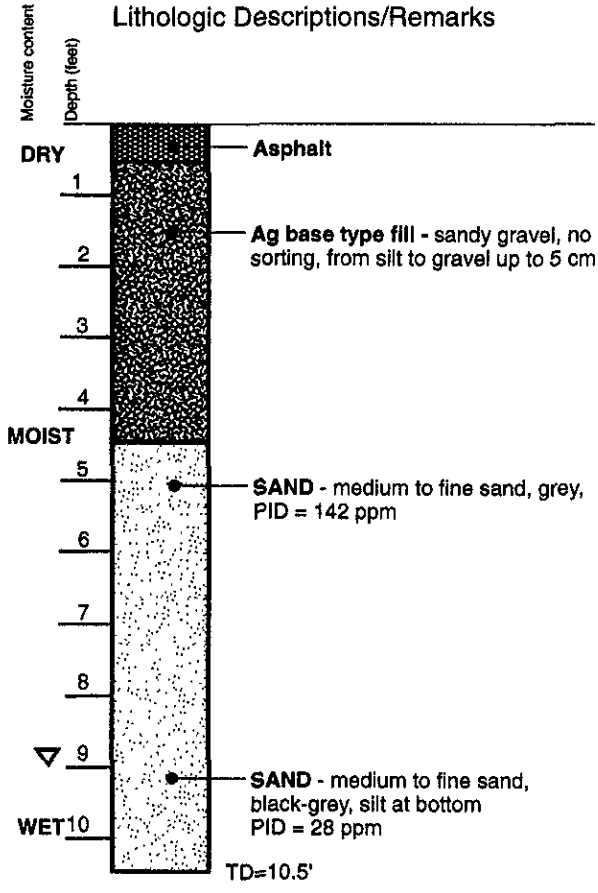


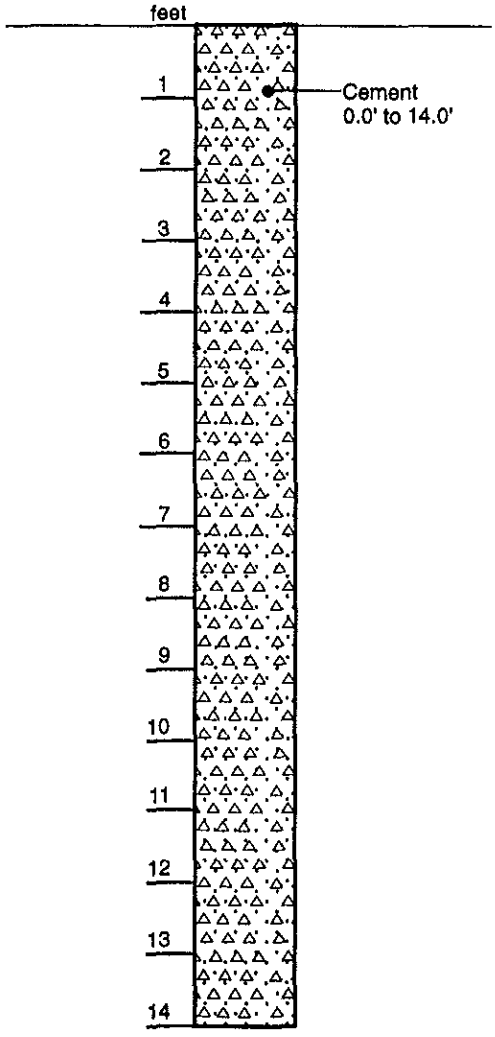
96-209 SB-2 11/10/94 DY FH

Port of Oakland-2277 Seventh St.

Bore Hole SB-3

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



Lithologic Descriptions/Remarks

Moisture content | Depth (feet)

DRY 1 — **Asphalt**

1 — **Ag base type fill** - angular gravel to silt

2, 3, 4

MOIST 4 — **SILTY SAND** - medium sand w/silt (10-20%), some layers of silt (<1cm thick), tan PID = 5 ppm

5, 6, 7, 8, 9

10 — **SILTY SAND** - medium to fine sand w/silt (20%), blue to grey color, pebbles angular to 2mm (5%) PID = 7 ppm

11, 12

12 ▽ — **SILTY SAND** - medium to fine sand w/silt (20%), blue to grey color, pebbles 5% up to 0.4cm

WET 13

14

TD=14'

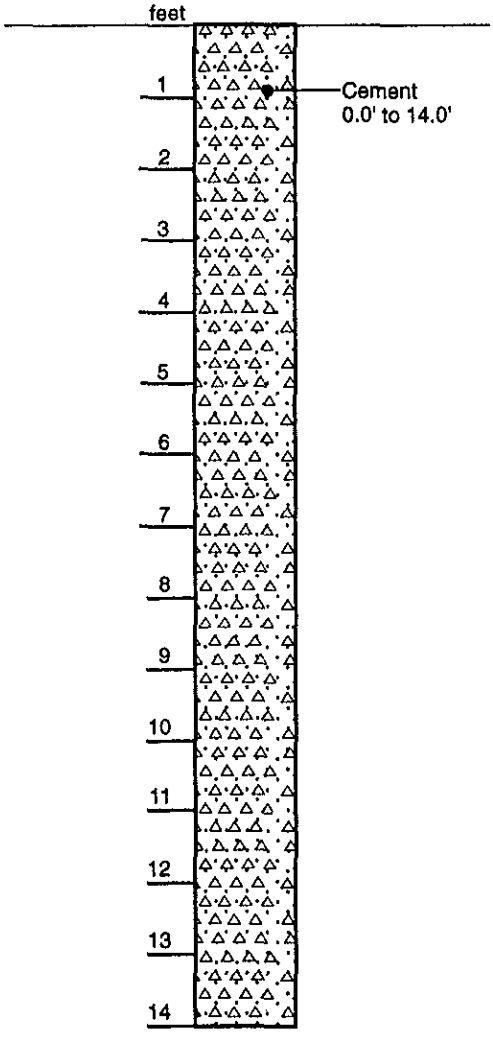
96-209 SB-3 927/94 DY FH

Port of Oakland-2277 Seventh St.

Bore Hole SB-4

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



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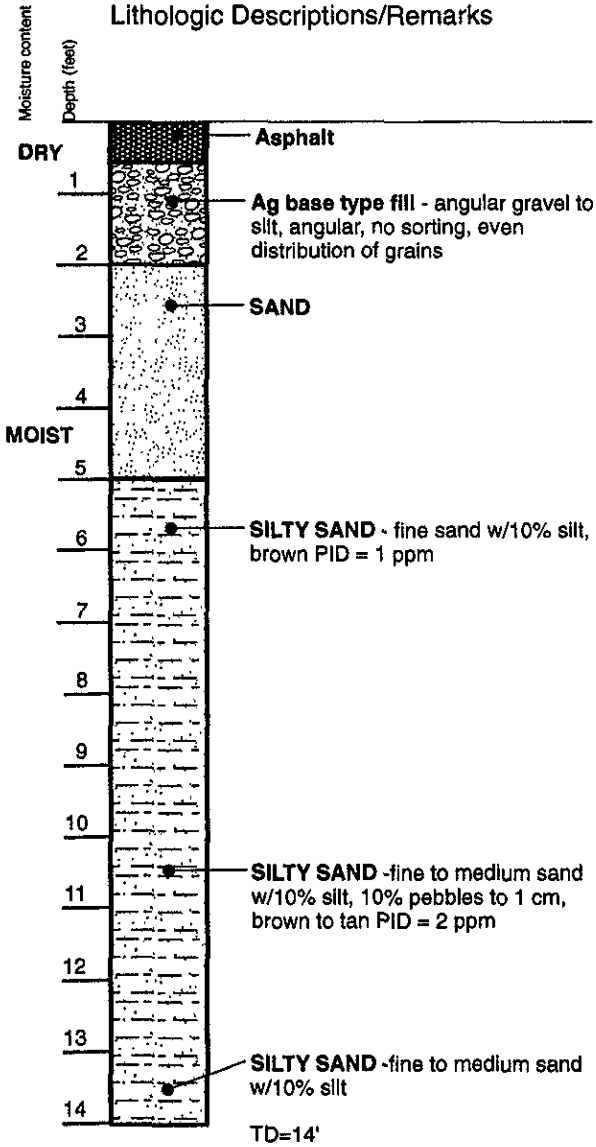


96-209 SB-4 11/10/94 DY FH

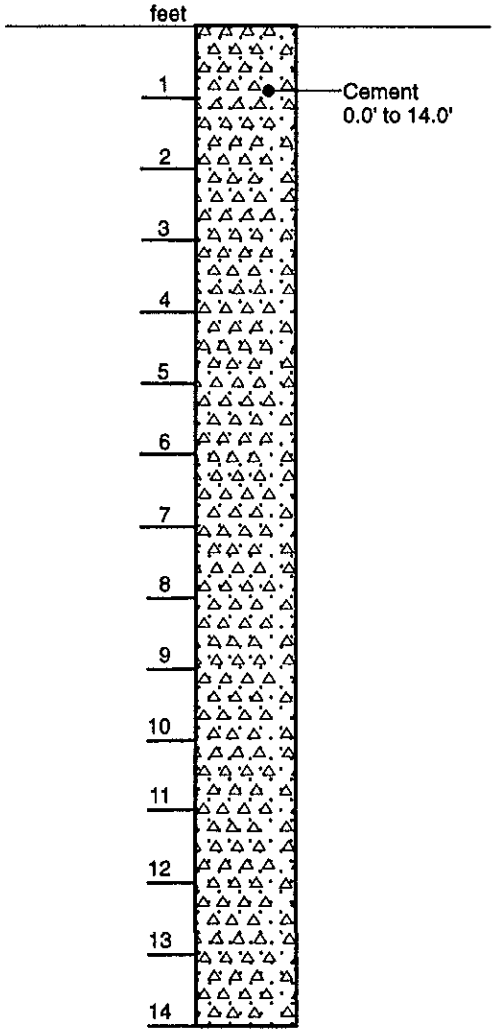
Uribe & Associates

Port of Oakland-2277 Seventh St.

Bore Hole SB-5

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



Lithologic Descriptions/Remarks

Moisture content | Depth (feet)

DRY 1 — **Asphalt**

1 — **Ag base type fill** - gravel to silt, no sorting

MOIST 5 — **SAND** - medium sand, green to blue green PID = 9 ppm

WET 10 — **SILTY SAND** - medium to fine sand w/20% grey to green silt, 5% pebbles up to 1 cm

▽ 13 — **SILTY SAND** - medium sand w/shell fragments

14 — TD=14'

REGISTERED GEOLOGIST
GERARD L. SLATTERY
No. 5038
STATE OF CALIFORNIA

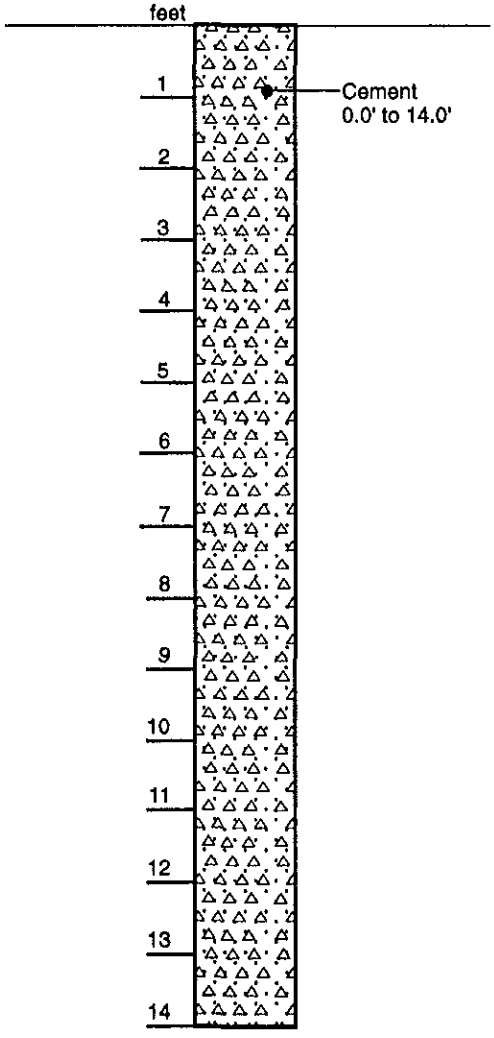
96-209 SB-5 9/27/94 DY FH

Port of Oakland-2277 Seventh St.

Bore Hole SB-6

Date 5/17/94
Drilling Method HS Auger
Sampling Method 18" Split spoon
Surface Elevation
Recorded By JC Borrego
Registered Geologist

Boring Abandonment



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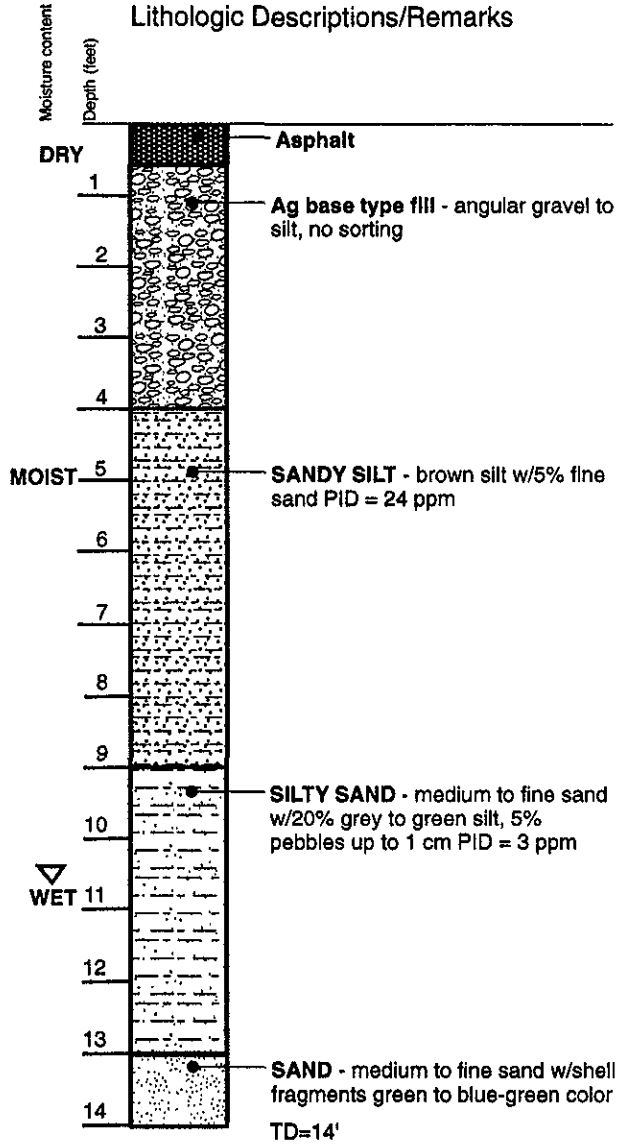

96-209 SB-6 3/27/94 DY FH

Uribe & Associates

Appendix C

Standard Operating Procedures

HOLLOW-STEM AUGER DRILLING, LOGGING AND SOIL SAMPLING

Introduction:

For environmental investigations of sites underlain by most unconsolidated formations, anticipated total depths (TDs) of less than 100 feet, and especially when wells or piezometers will be installed, hollow-stem augers are the preferred method of drilling. Borings are drilled with augers of a sufficient diameter to allow sampling and if necessary, the completion a monitoring well. Typically, 8-inch diameter augers are used. These allow for a minimum two-inch annulus, as required by most regulatory agencies, when a 4-inch casing is used.

Procedure for Clearing Boring Locations:

Prior to drilling any borehole, a drilling objective and program for each boring, including possible variations, will be determined by the supervising professional (registered geologist or civil engineer) and project manager, and defined in the scope of work. This will include a review of the anticipated formations, depth to first water, sampling frequency and anticipated total depth (TD). All locations will be cleared for subsurface utilities, by Underground Service Alert (USA), a utilities locating contractor. At a minimum, the upper five feet of the subsurface will be hand augered, to verify the absence of any unidentified utilities. Hand augering may continue at the discretion of the field geologist. If any obstructions are encountered the project manager will be notified. A new location will be determined and cleared.

Drilling Program:

Borings will be drilled to meet drilling objectives described in the scope of work, i.e., characterization of the vadose zone and the first water-bearing zone. Because of the extreme heterogeneity of most unconsolidated formations, continuous sampling is performed to ensure complete hydrogeologic characterization. In some instances continuous sampling may not be desirable, or practical, and an alternative sampling frequency will be determined. Borings may be extended to deeper depths, if obvious contamination is encountered at the drilling objective TD. Furthermore, drilling program objectives may be modified in consideration of information obtained during drilling. All drilling and sampling equipment which enters the borehole, will be thoroughly steam

cleaned and/or decontaminated with Tri-sodium phosphate (TSP) and rinsed with distilled water prior to drilling.

Borehole Logging:

All boreholes will be logged by a registered geologist or civil engineer, or a geologist trained with logging procedures and working under the direct supervision of a registered geologist or civil engineer. All materials encountered in the borehole will be described according to the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) ASTM D 2488-90. All fluids encountered in the borehole will be described and liquid levels will be determined according to ASTM procedure 4750-87. To determine the depth and nature of fluid occurrence in the borehole, drilling may be stopped at the direction of the drilling program or the field geologist, and the borehole will be allowed to stand open while fluid-level measurements are taken. The fluid content of all materials encountered will be described. If necessary, a grab sample of fluids for chemical analysis may be collected with a bailer. The depth drilled, date and time of sample collection will be noted.

Geophysical Logging:

If necessary, boreholes will be logged with geophysical equipment as determined by the project manager and supervising professional. All geophysical logging equipment will be cleaned prior to entering the borehole(s).

GROUNDWATER MONITORING WELL AND PIEZOMETER CONSTRUCTION

Introduction:

Groundwater monitoring well and piezometer design will be determined by the supervising professional and project manager. Wells or piezometers will be designed to satisfy the requirements of the drilling objective and provide the information needed for the investigation. Generally, it is desirable to complete wells in water-bearing formations (i.e., those which will produce some minimal amount of water such that a representative samples can be collected from the well in a reasonable amount of time). Typically water-bearing zones are of moderate- or higher-estimated permeability. However, because of the requirements of the investigation, it may be necessary to set well screens in low-estimated permeability formations, such as clays and silts.

Borehole Design:

Boreholes for wells or piezometers will be a minimum of 6 inches in diameter to allow for a minimum annulus of 2 inches.

Monitoring Well Construction Materials:

Monitoring wells will be generally constructed with flush thread, schedule 40 PVC casing: blank and slotted. Casing lengths are typically 5 or 10 feet. The bottom of the casing string will be fitted with a PVC endcap. Slotted intervals and sand packs will be set adjacent to the appropriate water-bearing formation or saturated formation, depending on the goal(s) of the investigation. In all instances, no well will be constructed so as to permit cross contamination between water-bearing units or between uncontaminated water and contaminated soils.

Slot openings will generally be 0.020 inch. Sand for sand packs will be matched to screen slot size and formation to the extent possible. Only new, factory washed sand will be used. Generally some settling of the sand pack will occur during development. As a countermeasure, depending on borehole conditions

and formation characteristics, sand packs will generally extend 1 foot above the top of the well screen, prior to well development.

A bentonite seal will be placed above the sand pack. Generally, one 5 gallon bucket of bentonite pellets is sufficient to create a 2 foot seal above the sand pack. The purpose of the seal is to prevent grout in the annulus from permeating the sand pack, and thus reduce or eliminate the flow of water into the well.

Annular space above the sand pack and bentonite seal will be sealed with a mixture of Portland cement and up to 5 % bentonite powder (grout).

Well Design:

For hydrocarbon investigations, generally the uppermost saturated formation is the target of the investigation. It may be necessary to complete wells in low-estimated permeability formations, where groundwater first occurs. If the zone of interest is unconfined (i.e., the water table can fluctuate freely) and/or free product may be encountered, the well screen will extend from the anticipated high water level, from unsaturated formation to saturated formation, to a maximum of twenty feet below the first occurrence of water (i.e., the water level at the time of well completion).

For shallow, confined water-bearing zones (i.e., groundwater is prevented from rising by an overlying aquitard) the borehole will be advanced through the water-bearing zone to a competent aquitard (at least 3 feet of low permeability materials) or a maximum of 20 feet below the top of the water-bearing zone (the bottom of the overlying confining aquitard). The screen will generally be set from the top of the water-bearing formation to the top of the bottom confining aquitard or a maximum of 20 feet below the top of the water-bearing formation, whichever is less. If the borehole is overdrilled, it will be backfilled back to a depth of 20 feet below the top of the water-bearing zone, before the well is completed. Under no circumstances, will the screen interval and/or sand pack extend across aquitard(s).

For deep, confined water-bearing zones the borehole will be advanced to the water-bearing zone of interest, and if necessary beyond to allow for complete geophysical logging. Once logging is completed, excess borehole will be backfilled. Generally, deeper zone wells will be drilled with rotary drilling techniques, and may involve setting surface casing through upper aquifers.

However, hollow-stem augers may be used to drill deeper wells, as the augers act as a casing during drilling. As with shallow completions, well screen interval will match the thickness of the confined water-bearing zone and not exceed twenty feet. Under no circumstances, will the screen interval and/or sand pack extend across aquitard(s).

Well Completion:

Well construction materials will be used uncontaminated from straight of the factory box or decontaminated by steam cleaning or cleaned with TSP and clean water. The casing string will be assembled one piece at a time and lowered through the hollow stem augers. The casing will be held under tension to the degree possible to ensure straightness. Once in position, the augers will be lifted up, a few feet at a time, and the sand for the sand pack will be added, slowly, to avoid bridging in the open borehole and/or locking the casing in the augers. The sand pack will be followed by the bentonite seal, and finally grout. Grout will be emplaced by lowering a tremmie pipe to a foot above the bentonite seal, and then pumping grout until it rises to the ground surface and displaces any borehole fluids and/or cuttings. The top of the casing will be trimmed, and a water tight, lockable cap will be fitted.

Generally, some settling of the grout will occur, and depending on the amount of settlement, more grout may be added. The remaining annular space will be filled with concrete and a well cover will be set. Flush mounted covers will be set slightly above ground level and the concrete finished so that surface fluids will move away from the well. If a stove pipe cover is used, traffic barriers will be installed to prevent damage to the cover and well. The well will be identified on its' casing and a survey mark will be inscribed on the top, northern side of the casing. All well-sites will be secured and cleaned to their previous condition or better.

Piezometer Design and Completion:

Piezometer design will be determined by the project manager and the supervising professional. Piezometers will be constructed with short screen well points or PVC casing, both 2-inch diameter, and will not exceed 5 feet in length. Piezometers will generally be temporary and will therefore not be set with grout. Instead, fine sand will be used instead of grout as annular fill. Piezometer screens will be set following the same guidelines for the various well completion

scenarios. Piezometers will be fitted with water-tight, locking caps, and generally will not have well head protection cemented in place, instead a protective stove pipe may be set in place, temporarily. Piezometers will be identified and marked with a reference point for surveying.

SOIL SAMPLING:

During boring activities, soil samples for chemical analysis will be collected at 5-foot intervals, as required by regulations, and more frequently if warranted. Samples will be collected in decontaminated brass sleeves inserted into the sampler. Upon recovery, the sampler will be opened, and the sleeves separated and immediately covered with Teflon tape and plastic end-caps. Samples will be placed in a cooler, chilled to 4°C, and transported to the analytical laboratory under chain-of-custody. Each sample will be labelled with an identification number appropriate for the project written in indelible ink. The sample label will also include the date, company name, project number, preservative used, and sampler's initials. The number will be included on the chain-of-custody form along with any special information necessary to identify the sample.

Grab samples will also be collected in brass sleeves and capped with Teflon and plastic end caps. Grab sample frequency and distribution will vary according to the project. Generally, a minimum of one discreet grab sample will be collected from each 20 cubic yards of soil. Sample locations will be determined using a nine-point random grid system. Transportation and chain-of-custody procedures will be identical to boring samples.

All sampling equipment will be decontaminated after each use with simple green™ or Tri-Sodium Phosphate.

CHAIN-OF-CUSTODY PROCEDURES

Sample Handling:

All soil and water samples will be labelled with the sample number, date, company name, preservative used, and sampler's initials. A chain-of-custody form will then be filled out including the time and date of the sample, the sample number, the number of containers for each sample, the analysis required and any distinguishing comments or laboratory notifications. The chain-of-custody form will remain with the samples at all times during transportation and storage.

Transfer of Custody to Laboratory

The chain-of-custody will be signed and dated by the sampler when relinquished to the laboratory. The laboratory courier or sample receiver will also sign and date the chain-of-custody.

Organic Compound Monitor (OVA or PID or HNU)

Equipment Preparation

1. Ensure that the battery in the Organic Compound Monitor is fully charged.
2. Recharge the hydrogen gas cylinder in the Century OVA.
3. Ensure that the Organic Compound Monitor has been calibrated within the last week.
4. Follow manufacturer's instructions.

Monitoring Activities

1. Once an hour, record the instrument reading on the data sheet.

Post-Monitoring Activities

Maintenance, care, and calibration of Organic Compound Monitors should be carried out in accordance with the instrument's instruction manual.

WELL DEVELOPMENT

Introduction:

Once monitoring wells or piezometers are installed, it is desirable, and generally required by regulations, to develop the well to improve or restore the hydraulic conductivity of the formation and the sand pack; both may have been impaired during drilling and well construction. The goal of development is to dislodge fines and draw them into the well casing, and once there remove them from the casing. Generally, well development activities will improve the flow rate of the well. Typically, wells will be developed for 4 hours and/or until the well no longer yields sediment and water is clear. This may not be possible for wells completed in fine-grained or extremely heterogeneous formations.

Development Methods:

Methods of choice are surging, bailing, jetting and pumping. Surging consists of moving a tightly fitting surge block or disc up and down in the well casing, which creates suction in the casing, below the surge block. Bailing consists of removing fluids with a bailer, which is simply a tube or pipe with a check valve fixed to the bottom of it. Both of these methods are accomplished by using the sand line winch on the drill or development rig. Jetting consists of lowering a special tool into the well which will direct compressed air against the well screen slots. Jet-air lifting is a method of pumping and also uses compressed air. It has the advantage of directing suction locally against the well screen. Pumping can be accomplished with a bladder pump or electric submersible.

For wells completed in fine grained or clayey formations, it may be necessary to add a fluid to assist in development; clean water is not recommended as it may hydrate clays and further reduce porosity and permeability. If necessary an engineered development fluid will be obtained.

Generally, the most rapid improvements from development are noted when development is performed as soon as possible, shortly after the sand pack and bentonite seal have been set.

Development Procedures:

All development equipment will be decontaminated prior to use. Development will usually begin by noting fluid-level measurements, and then proceeding slowly, so as to not impact the formation or damage the well screen. Next, a bailer may be used to remove fines which have probably settled in the casing, through the screen during well construction. Typically, a surge block, which is capable of creating significant suction may be used for low flow rate wells. If development is proceeding, or if the formation is of moderate- or high-estimated permeability, pumping may be sufficient to complete development. Development will proceed for 4 hours or until produced groundwater is clear and sand free. All fluids and materials added to and removed from the well will be noted. An initial estimate of the well flow rate will be made, based on well recovery rates or pumping rates. Temperature, conductivity and pH will be monitored during development.

All fluids and materials removed from the well will be stored on-site in drums, pending sampling and analysis. All fluids and materials used and generated by the well installation and development activities will be properly disposed of.

GROUNDWATER SAMPLING

Groundwater samples for chemical analysis will be collected following this procedure:

All purging and sampling equipment will be decontaminated prior to use.

Upon arrival at the site, the wells will be located and opened up, to allow for equilibration with the atmosphere. The monitoring well is first checked for floating product with a dual interface probe. Water or liquid-level measurements will be collected, to the nearest one hundredth of a foot (0.01 foot). If a probe is not available, a clear plastic bailer may be used to check for product. The volume of water in the well casing will be calculated and three to five casing volumes of water will be evacuated. The well will be bailed or pumped to remove the correct volume of water. Stabilization parameters, temperature, conductivity and pH, will be monitored. For wells with extremely low flow rates, i.e. less than 0.01 gallon per minute (GPM), the well will be bailed dry and allowed to recover overnight, and then sampled.

Once the well has been purged, samples will be collected with a bailer and transferred to appropriate sampling vials or bottles. Samples will be labeled and placed in a cooler, cooled to 4 ° C and transported to the analytical laboratory under chain-of-custody. Purge water will be stored on-site pending analytical results, and then properly disposed of.

Appendix D

Laboratory Analysis Results and Chain-of-Custody Forms

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES

3700 Lakeville Highway, Petaluma, CA 94954
P.O. Box 808024, Petaluma, CA 94975-8024
Telephone: (707) 763-8245
FAX (707) 763-4065

June 13, 1994

John Borrego
Uribe & Associates
2930 Lakeshore Avenue #200
Oakland, CA 94610-3614

Customer Project: 96-209/201867
Laboratory Job: L9405204

On May 18, 1994 we received 30 sample(s) for analysis. Samples were analyzed by the following method(s):

Diesel (8015 Modified)

Gasoline & BTEX (EPA 8015M/8020A)

Hold Sample(s)

Project Manager

Laboratory Director
Robert Peak

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-1
Lab Id: L9405204-1

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DW					
Diesel	210000	25000	mg/L	23-MAY-94	26-MAY-94
Surrogate					
o-Terphenyl		-	%	23-MAY-94	26-MAY-94
Comments:	See Lab Note #12				
GAS/BTEX-W					
Benzene	4200	0.50	ug/L	25-MAY-94	25-MAY-94
Ethyl Benzene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Toluene	1900	0.50	ug/L	25-MAY-94	25-MAY-94
Xylene	14000	0.50	ug/L	25-MAY-94	25-MAY-94
Gasoline	ND <	0.050	mg/L	25-MAY-94	25-MAY-94
Surrogate:					
Bromofluorobenzene		-	%	25-MAY-94	25-MAY-94
Comments:	See footnote 16. Gas range organics present at high ppm levels which do not resemble a gasoline fingerprint.				
	Results are estimated due to solubility problem.				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-2
Lab Id: L9405204-2

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DW					
Diesel	310	5.00	mg/L	23-MAY-94	25-MAY-94
Surrogate					
o-Terphenyl		-	%	23-MAY-94	25-MAY-94
Comments:	See Lab Note #12.				
GAS/BTEX-W					
Benzene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Ethyl Benzene	57.	0.50	ug/L	25-MAY-94	25-MAY-94
Toluene	11.	0.50	ug/L	25-MAY-94	25-MAY-94
Xylene	130	0.50	ug/L	25-MAY-94	25-MAY-94
Gasoline	23.	0.050	mg/L	25-MAY-94	25-MAY-94
Surrogate:					
Bromofluorobenzene	319.	-	%	25-MAY-94	25-MAY-94
Comments:	See footnote 13. Original run within holding time. Gas quantitated from a dilution run past holding time.				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-3
Lab Id: L9405204-3

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DW					
Diesel	810	25.0	mg/L	23-MAY-94	25-MAY-94
-	-				
Surrogate	-				
o-Terphenyl		-	%	23-MAY-94	25-MAY-94
-	-				
Comments:	See Lab Note #12.				
-	-				
-	-				
GAS/BTEX-W					
Benzene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Ethyl Benzene	3.1	0.50	ug/L	25-MAY-94	25-MAY-94
Toluene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Xylene	9.3	0.50	ug/L	25-MAY-94	25-MAY-94
Gasoline	ND <	0.050	mg/L	25-MAY-94	25-MAY-94
-	-				
Surrogate:	-				
Bromofluorobenzene	91.0	-	%	25-MAY-94	25-MAY-94
-	-				
Comments:	1.4ppm gas range organics present that				
-	do not resemble a gasoline fingerprint.				
-	-				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-4
Lab Id: L9405204-4

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DW					
Diesel	4.5	0.0500	mg/L	23-MAY-94	25-MAY-94
-	-				
Surrogate	-				
o-Terphenyl	82.0	-	%	23-MAY-94	25-MAY-94
-	-				
Comments:	None				
-	-				
-	-				
GAS/BTEX-W					
Benzene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Ethyl Benzene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Toluene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Xylene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Gasoline	ND <	0.050	mg/L	25-MAY-94	25-MAY-94
-	-				
Surrogate:	-				
Bromofluorobenzene	102.	-	%	25-MAY-94	25-MAY-94
-	-				
Comments:	None				
-	-				
-	-				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-5
Lab Id: L9405204-5

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DW					
Diesel	170	5.00	mg/L	23-MAY-94	25-MAY-94
-	-				
Surrogate	-				
o-Terphenyl		-	%	23-MAY-94	25-MAY-94
-	-				
Comments:	See Lab Note #12.				
-	-				
-	-				
GAS/BTEX-W					
Benzene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Ethyl Benzene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Toluene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Xylene	23.	0.50	ug/L	25-MAY-94	25-MAY-94
Gasoline	ND <	0.050	mg/L	25-MAY-94	25-MAY-94
-	-				
Surrogate:	-				
Bromofluorobenzene	126.	-	%	25-MAY-94	25-MAY-94
-	-				
Comments:	5.6 ppm gas range organics present which				
-	do not resemble a gasoline fingerprint.				
-	-				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-6
Lab Id: L9405204-6

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DW					
Diesel	570	10.0	mg/L	23-MAY-94	25-MAY-94
-	-				
Surrogate	-				
o-Terphenyl		-	%	23-MAY-94	25-MAY-94
-	-				
Comments:	See Lab Note #12.				
-	-				
-	-				
GAS/BTEX-W					
Benzene	1.2	0.50	ug/L	25-MAY-94	25-MAY-94
Ethyl Benzene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Toluene	ND <	0.50	ug/L	25-MAY-94	25-MAY-94
Xylene	79.	0.50	ug/L	25-MAY-94	25-MAY-94
Gasoline	ND <	0.050	mg/L	25-MAY-94	25-MAY-94
-	-				
Surrogate:	-				
Bromofluorobenzene	75.0	-	%	25-MAY-94	25-MAY-94
-	-				
Comments:	1.9 ppm gas range organics present which				
-	do not resemble a gasoline fingerprint.				
-	-				

D&M Laboratories .

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: MW-1-5.0
Lab Id: L9405204-7

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	limit	Units	Extracted	Analyzed
8015DS					
Diesel	ND <	5.00	mg/Kg	24-MAY-94	26-MAY-94
Surrogate o-Terphenyl	86.0	-	%	24-MAY-94	26-MAY-94
Comments:	None				
GAS/BTEX-S					
Gasoline	ND <	0.20	mg/Kg	31-MAY-94	31-MAY-94
Surrogate Bromofluorobenzene	347.	-	%	31-MAY-94	31-MAY-94
Comments:	See footnotes 13 and 29. 1,700 ppm gas range organics present which which do not resemble a gasoline fingerprint.				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: MW-1-5.0
Lab Id: L9405204-7

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 29-SEP-94

Parameter	Value	Limit	Units	Extracted	Analyzed
GAS/BTEX-S					
Benzene	2900	1300	ug/Kg	31-MAY-94	31-MAY-94
Ethyl Benzene	9700	1300	ug/Kg	31-MAY-94	31-MAY-94
Toluene	5400	1300	ug/Kg	31-MAY-94	31-MAY-94
Xylene	30000	1300	ug/Kg	31-MAY-94	31-MAY-94
Gasoline	ND <	50.	mg/Kg	31-MAY-94	31-MAY-94
Surrogate					
Bromofluorobenzene	105.	-	%	31-MAY-94	31-MAY-94
Comments:	See footnotes 13 and 29. 1,700 ppm gas ranges organics present which do not resemble a gasoline pattern.				

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To John Borrego	From Stella H
Co. Uribe	Co. D&M
Dept.	Phone #
Fax #	Fax #

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: MW-2-5.0
Lab Id: L9405204-10

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DS					
Diesel	ND <	5.00	mg/Kg	24-MAY-94	26-MAY-94
-	-				
Surrogate	-				
o-Terphenyl	96.0	-	%	24-MAY-94	26-MAY-94
-	-				
Comments:	None				
-	-				
-	-				
GAS/BTEX-S					
Benzene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Ethyl Benzene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Toluene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Xylene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Gasoline	ND <	0.20	mg/Kg	24-MAY-94	24-MAY-94
-	-				
Surrogate	-				
Bromofluorobenzene	89.0	-	%	24-MAY-94	24-MAY-94
-	-				
Comments:	None				
-	-				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: MW-3-5.0
Lab Id: L9405204-13

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DS					
Diesel	ND <	5.00	mg/Kg	24-MAY-94	26-MAY-94
-	-				
Surrogate	-				
o-Terphenyl	96.0	-	%	24-MAY-94	26-MAY-94
-	-				
Comments:	None				
-	-				
-	-				
GAS/BTEX-S					
Benzene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Ethyl Benzene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Toluene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Xylene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Gasoline	ND <	0.20	mg/Kg	24-MAY-94	24-MAY-94
-	-				
Surrogate	-				
Bromofluorobenzene	87.0	-	%	24-MAY-94	24-MAY-94
-	-				
Comments:	None				
-	-				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-1-5.0
Lab Id: L9405204-15

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DS					
Diesel	10.	5.00	mg/Kg	24-MAY-94	26-MAY-94
-	-				
Surrogate	-				
o-Terphenyl	92.0	-	%	24-MAY-94	26-MAY-94
-	-				
Comments:	See Lab Note #20.				
-	-				
-	-				
GAS/BTEX-S					
Benzene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Ethyl Benzene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Toluene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Xylene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Gasoline	ND <	0.20	mg/Kg	24-MAY-94	24-MAY-94
-	-				
Surrogate	-				
Bromofluorobenzene	101.	-	%	24-MAY-94	24-MAY-94
-	-				
Comments:	0.61 ppm gas range organics present which did not resemble a gasoline fingerprint.				
-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-2-5.0
Lab Id: L9405204-17

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DS					
Diesel	43.	5.00	mg/Kg	24-MAY-94	26-MAY-94
Surrogate o-Terphenyl	92.0	-	%	24-MAY-94	26-MAY-94
Comments:	Hydrocarbons were found in the diesel range, but did not match a a diesel fingerprint.				
GAS/BTEX-S					
Gasoline	ND <	1.0	mg/Kg	31-MAY-94	31-MAY-94
Surrogate Bromofluorobenzene	73.2	-	%	31-MAY-94	31-MAY-94
Comments:	See footnote 29. 66 ppm gas range organics present which do not resemble a gasoline fingerprint.				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-2-5.0
Lab Id: L9405204-17

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 29-SEP-94

Parameter	Value	Limit	Units	Extracted	Analyzed
GAS/BTEX-S					
Benzene	ND <	25.	ug/Kg	31-MAY-94	31-MAY-94
Ethyl Benzene	ND <	25.	ug/Kg	31-MAY-94	31-MAY-94
Toluene	ND <	25.	ug/Kg	31-MAY-94	31-MAY-94
Xylene	ND <	25.	ug/Kg	31-MAY-94	31-MAY-94
Gasoline	ND <	1.0	mg/Kg	31-MAY-94	31-MAY-94
Surrogate					
Bromofluorobenzene	73.2	-	%	31-MAY-94	31-MAY-94
Comments:	See footnote 29. 66ppm gas range organics present which do not resemble a gasoline fingerprint.				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-3-5.0
Lab Id: L9405204-19

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DS					
Diesel	ND <	5.00	mg/Kg	24-MAY-94	26-MAY-94
-	-				
Surrogate	-				
o-Terphenyl	86.0	-	%	24-MAY-94	26-MAY-94
-	-				
Comments:	None				
-	-				
-	-				
GAS/BTEX-S					
Benzene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Ethyl Benzene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Toluene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Xylene	ND <	5.0	ug/Kg	24-MAY-94	24-MAY-94
Gasoline	ND <	0.20	mg/Kg	24-MAY-94	24-MAY-94
-	-				
Surrogate	-				
Bromofluorobenzene	85.0	-	%	24-MAY-94	24-MAY-94
-	-				
Comments:	None				
-	-				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-4-5.0
Lab Id: L9405204-22

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value		Limit	Units	Extracted	Analyzed
8015DS						
Diesel	ND	<	5.00	mg/Kg	24-MAY-94	26-MAY-94
-	-					
Surrogate	-					
o-Terphenyl	91.0	-		%	24-MAY-94	26-MAY-94
-	-					
Comments:	None					
-	-					
-	-					
GAS/BTEX-S						
Benzene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Ethyl Benzene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Toluene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Xylene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Gasoline	ND	<	0.20	mg/Kg	24-MAY-94	24-MAY-94
-	-					
Surrogate	-					
Bromofluorobenzene	86.0	-		%	24-MAY-94	24-MAY-94
-	-					
Comments:	None					
-	-					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-5-5.0
Lab Id: L9405204-25

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value		Limit	Units	Extracted	Analyzed
8015DS						
Diesel	ND	<	5.00	mg/Kg	24-MAY-94	26-MAY-94
Surrogate						
o-Terphenyl	99.0	-		%	24-MAY-94	26-MAY-94
Comments:	None					
GAS/BTEX-S						
Benzene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Ethyl Benzene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Toluene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Xylene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Gasoline	ND	<	0.20	mg/Kg	24-MAY-94	24-MAY-94
Surrogate						
Bromofluorobenzene	109.	-		%	24-MAY-94	24-MAY-94
Comments:	0.34 ppm gas range organics present which did not resemble a gasoline fingerprint.					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209/201867
Sample Id: SB-6-5.0
Lab Id: L9405204-28

Collected: 17-MAY-94
Received: 18-MAY-94
Reported: 13-JUN-94

Parameter	Value		Limit	Units	Extracted	Analyzed
8015DS						
Diesel	ND	<	5.00	mg/Kg	24-MAY-94	26-MAY-94
-	-					
Surrogate	-					
o-Terphenyl	95.0	-		%	24-MAY-94	26-MAY-94
-	-					
Comments:	None					
-	-					
-	-					
GAS/BTEX-S						
Benzene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Ethyl Benzene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Toluene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Xylene	ND	<	5.0	ug/Kg	24-MAY-94	24-MAY-94
Gasoline	ND	<	0.20	mg/Kg	24-MAY-94	24-MAY-94
-	-					
Surrogate	-					
Bromofluorobenzene	84.0	-		%	24-MAY-94	24-MAY-94
-	-					
Comments:	None					
-	-					

URIBE & ASSOCIATES
ENVIRONMENTAL CONSULTING SERVICES

L9405204

CHAIN-OF-CUSTODY RECORD

Project No.: 96-209
Project Name: Port of Oakland 2277 Seventh St

REPORT RESULTS TO
Name: John Borrego
Company: URIBE & ASSOCIATES
Mailing Address: 2630 LAKESHORE AVE., SUITE 209
City, State, Zip: OAKLAND, CA 94610-3814
Telephone No.: 510-832-2283 Telefax No.: 510-832-2237

SEND INVOICE TO
Purchase Order Number: 201867
Name: D. Schaefer
Company: Port of Oakland Dept:
Mailing Address:
City, State, Zip:

Turn-Around Time: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☐ 5 day ☒ 10 day (Standard)
Rush Charges Authorized? ☐ Yes ☒ No
Phone Results ☐ Fax Results ☒
Special Instructions:

No.	Date	Time	Matrix/Medium	Sample Identification Number	# OF CONTAINERS	TPH-Gas w/BTEX	TPH-Diesel	Remarks
1	5/13/94		Water	SB-1	4	X	X	
2				SB-2				
3				SB-3				
4				SB-4				
5				SB-5				
6				SB-6				
7	5/16		Soil	MW-1-5.0	1	X	X	
8				MW-1-10.0				hold
9				MW-1-15.5				hold
10				MW-2-5.0		X	X	
11				MW-2-10.0				
12				MW-2-15.0				hold

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐
COOLER TEMPERATURE 6°C

2450, 12 VOAs, 12 amb hold UPS Red

CHAIN OF CUSTODY

Collected by: John C. Borrego (Print)
Relinquished by: John C. Borrego Date: 5/13/94 Time: 1:00 p
Relinquished by: Date: Time:
Fax COC on 5/18

Collector's Signature: John C. Borrego
Received by: Date: Time:
KV Saucedo 5/13/94 1:56 pm
Received by: Date: Time:

Method of Shipment: UPS - Red

Sample Condition Upon Receipt: ☐ Acceptable ☒ Other (explain)
See pg 3 of 3

Original (White) Laboratory Copy (Yellow) Field Copy (Pink)

URIBE & ASSOCIATES
ENVIRONMENTAL CONSULTING SERVICES

L9405204

CHAIN-OF-CUSTODY RECORD

Project No.: 96-209
Project Name: Port of Oakland 2279 Seventh St

REPORT RESULTS TO
Name: John Barrigan
Company: URIBE & ASSOCIATES
Mailing Address: 2100 LAKESHORE AVE., SUITE 200
City, State, Zip: OAKLAND, CA 94610-3614
Telephone No.: 510-832-2220 Telefax No.: 510-832-2237

SEND INVOICE TO
Purchase Order Number: 201867
Name: D. Scheuerholz
Company: Port of Oakland Dept:
Mailing Address:
City, State, Zip:

Turn-Around Time: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☐ 5 day ☒ 10 day (Standard)
Rush Charges Authorized? ☐ Yes ☒ No
Phone Results ☐ Fax Results ☒

Special Instructions:

No.	Date	Time	Matrix/Medium	Sample Identification Number	# OF CONTAINERS	TPH-Gas/BTEX	TPH-Diesel	Remarks
13	5/16		Soil	MW-3-5.0	1	X	X	
14	↓			MW-3A-5.0				hold
15	5/17			SB-1-5.0		X	X	
16				SB-1-10.0				hold
17				SB-2-5.0		X	X	
18				SB-2-14.0				hold SB-3-11.0.
19				SB-3-5.0		X	X	N/A
20				SB-3-11.0 10.0 as per JOHN Barrigan 5/18/94 MJ				Not received.
21				SB-3-14.0				hold
22				SB-4-5.0		X	X	hold Received
23				SB-4-10.0				① SB-3-10.0.
24	↓			SB-4-14.0				hold
								hold

COOLER CUSTODY SEALS INTACT? ☐ NOT INTACT ☐
COOLER TEMPERATURE ____ °F

CHAIN OF CUSTODY

Collected by: John C Barrigan (Print)
Relinquished by: John C Barrigan Date: 5/18/94 Time: 1:15p
Relinquished by: Date: Time:

Collector's Signature: John C Barrigan
Received by: KV Saucedal Date: 5/18/94 Time: 1:56p
Received by: Date: Time:

Method of Shipment: UPS - Red

Sample Condition Upon Receipt: ☐ Acceptable ☒ Other (explain)
See pg 3 of 3

Original (White) Laboratory Copy (Yellow) Field Copy (Pink)

URIBE & ASSOCIATES
ENVIRONMENTAL CONSULTING SERVICES

L94052O4

CHAIN-OF-CUSTODY RECORD

Project No.: 9-209 | Project Name: Port of Oakland

REPORT RESULTS TO
Name: J.C. Borrego
Company: URIBE & ASSOCIATES
Mailing Address: 2330 LAKESHORE AVE., SUITE 200
City, State, Zip: OAKLAND, CA 94610-3614
Telephone No.: 510-832-2233 Telefax No.: 510-832-2237

SEND INVOICE TO
Purchase Order Number: 261867
Name: D. Schoenheit
Company: Port of Oakland Dept:
Mailing Address:
City, State, Zip:

Turn-Around Time: ☐ 24 hr ☐ 48 hr ☐ 72 hr ☐ 5 day ☒ 10 day (Standard)
Rush Charges Authorized? ☐ Yes ☒ No
Phone Results ☐ Fax Results ☒
Special Instructions:

No.	Date	Time	Matrix/Medium	Sample Identification Number	# OF CONTAINERS	TPH-gas 8015	TPH-Diesel	Remarks
25	5/17/94		Soil	SB-5 - 5.0	1	X	X	
26				- 10.0				hold
27				- 14.0				hold
28				SB-6 - 5.0		X	X	
29				- 10.0				hold
30				- 14.0		NA		hold

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐
COOLER TEMPERATURE _____ °C

CHAIN OF CUSTODY

Collected by: John C Borrego (Print) — Collector's Signature: John C Borrego
Relinquished by: John C Borrego Date: 5/18/94 Time: 1:00p — Received by: K V Saucedal. Date: 5/18/94 Time: 1:56p
Relinquished by: Date: Time: — Received by: Date: Time:

Method of Shipment: UPS - Red

Sample Condition Upon Receipt: ☐ Acceptable ☒ Other (explain)
SEALS ON ZIPLOCS, SEALS WERE SAME ON EXTERIOR. EXCESSIVE FINES NOTICEABLE UPON OPENING COOLER. SAMPLE ON COOLER BOTTOM LOOKED OUT OF SEALS)

Original (White) Laboratory Copy (Yellow) Field Copy (Pink)

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES

3700 Lakeville Highway, Petaluma, CA 94954
P.O. Box 808024, Petaluma, CA 94975-8024
Telephone: (707) 763-8245
FAX (707) 763-4065

Andrew Meyer
Uribe & Associates
2930 Lakeshore Avenue #200
Oakland, CA 94610-3614

June 17, 1994

Customer Project: 96-209 Shippers Imperial
Laboratory Job: L9406008

On June 1, 1994 we received 1 sample(s) for analysis. Samples were analyzed by the following method(s):

Diesel (8015 Modified)

Gasoline & BTEX (EPA 8015M/8020A)

Project Manager

Laboratory Director
Robert Peak

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209 Shippers Imperial
Sample Id: MW-2
Lab Id: L9406008-1

Collected: 27-MAY-94
Received: 01-JUN-94
Reported: 17-JUN-94

Parameter	Value		Limit	Units	Extracted	Analyzed
8015DW						
Diesel	0.47		0.0500	mg/L	06-JUN-94	07-JUN-94
Surrogate						
o-Terphenyl	24.0	-		%	06-JUN-94	07-JUN-94
Comments:	Surrogate recovery was low due to matrix efects. The MB and MBS surrogate recovery was acceptable. Hydrocarbons in the range of diesel were found but did not match a diesel fingerprint.					
GAS/BTEX-W						
Benzene	ND <		0.50	ug/L	08-JUN-94	08-JUN-94
Ethyl Benzene	ND <		0.50	ug/L	08-JUN-94	08-JUN-94
Toluene	ND <		0.50	ug/L	08-JUN-94	08-JUN-94
Xylene	ND <		0.50	ug/L	08-JUN-94	08-JUN-94
Gasoline	0.087		0.050	mg/L	08-JUN-94	08-JUN-94
Surrogate:						
Bromofluorobenzene	78.5	-		%	08-JUN-94	08-JUN-94
Comments:	None					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG4971-10

Reported: 15-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DW					
Diesel	ND <	0.050	mg/L	06-JUN-94	07-JUN-94
Surrogate					
o-Terphenyl	100.	-	%	06-JUN-94	07-JUN-94
Comments:	None				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG4971-11

Reported: 15-JUN-94

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
8015DW							
Diesel	2.02	mg/L	2	mg/L	101	06-JUN-94	07-JUN-94
Surrogate							
o-Terphenyl	106.	%				06-JUN-94	07-JUN-94
Comments:	None						

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Water Spike
Lab Id: WG4971-2

Reported: 15-JUN-94

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
8015DW							
Diesel	0.722	mg/L	1	mg/L	72%	06-JUN-94	07-JUN-94
Surrogate							
o-Terphenyl	110.	%				06-JUN-94	07-JUN-94
Comments:	None						

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Water Spike Duplicat
Lab Id: WG4971-3

Reported: 15-JUN-94

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
8015DW						
Diesel	0.784	mg/L	78%	8.2	06-JUN-94	07-JUN-94
Surrogate						
o-Terphenyl	105.	%			06-JUN-94	07-JUN-94
Comments:	None					

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG5012-4

Reported: 10-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
GAS/BTEX-W					
Benzene	ND <	0.50	ug/L	07-JUN-94	07-JUN-94
Ethyl Benzene	ND <	0.50	ug/L	07-JUN-94	07-JUN-94
Toluene	ND <	0.50	ug/L	07-JUN-94	07-JUN-94
Xylene	ND <	0.50	ug/L	07-JUN-94	07-JUN-94
Gasoline	ND <	0.050	mg/L	07-JUN-94	07-JUN-94
-	-				
Surrogate:	-				
Bromofluorobenzene	98.8	-	%	07-JUN-94	07-JUN-94
-	-				
Comments:	None				
-	-				
-	-				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG5012-6

Reported: 10-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
GAS/BTEX-W					
Benzene	ND <	0.50	ug/L	08-JUN-94	08-JUN-94
Ethyl Benzene	ND <	0.50	ug/L	08-JUN-94	08-JUN-94
Toluene	ND <	0.50	ug/L	08-JUN-94	08-JUN-94
Xylene	ND <	0.50	ug/L	08-JUN-94	08-JUN-94
Gasoline	ND <	0.050	mg/L	08-JUN-94	08-JUN-94
-	-				
Surrogate:	-				
Bromofluorobenzene	73.4 -		%	08-JUN-94	08-JUN-94
-	-				
Comments:	None				
-	-				
-	-				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG5012-7

Reported: 10-JUN-94

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
GAS/BTEX-W							
Benzene	20.	ug/L	20	ug/L	100.4	08-JUN-94	08-JUN-94
Ethyl Benzene	19.	ug/L	20	ug/L	97.1	08-JUN-94	08-JUN-94
Toluene	19.	ug/L	20	ug/L	97.0	08-JUN-94	08-JUN-94
Xylene	72.	ug/L	60	ug/L	120.0	08-JUN-94	08-JUN-94
Gasoline	0.90	mg/L	1	mg/L	92.2	08-JUN-94	08-JUN-94
-	-						
Surrogate:	-						
Bromofluorobenzene	18.0	%	20	ug/L	90.0	08-JUN-94	08-JUN-94
-	-						
Comments:	None						
-	-						
-	-						

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for:
Project Id:
Sample Id: MX
Lab Id: WG5012-1

Reported: 10-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
GAS/BTEX-W					
Benzene	ND <	0.500	ug/L	07-JUN-94	07-JUN-94
Ethyl Benzene	ND <	0.500	ug/L	07-JUN-94	07-JUN-94
Toluene	ND <	0.500	ug/L	07-JUN-94	07-JUN-94
Xylene	ND <	0.500	ug/L	07-JUN-94	07-JUN-94
Gasoline	ND <	0.0500	mg/L	07-JUN-94	07-JUN-94
-	-				
Surrogate:	-				
Bromofluorobenzene	101.	-	%	07-JUN-94	07-JUN-94
-	-				
Comments:	None				
-	-				
-	-				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Matrix Spike
Lab Id: WG5012-2

Reported: 10-JUN-94

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
GAS/BTEX-W							
Benzene	20.	ug/L	20	ug/L	100.8	08-JUN-94	08-JUN-94
Ethyl Benzene	19.	ug/L	20	ug/L	97.2	08-JUN-94	08-JUN-94
Toluene	19.	ug/L	20	ug/L	95.2	08-JUN-94	08-JUN-94
Xylene	57.	ug/L	60	ug/L	95.0	08-JUN-94	08-JUN-94
Gasoline	1.0	mg/L	1	mg/L	104	08-JUN-94	08-JUN-94
-	-						
Surrogate:	-						
Bromofluorobenzene	79.0	%		ug/L		08-JUN-94	08-JUN-94
-	-						
Comments:	L9405315-7 & L9405315-3						
-	-						
-	-						

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Matrix Spike Dup
Lab Id: WG5012-3

Reported: 10-JUN-94

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
GAS/BTEX-W						
Benzene	20.	ug/L	100.8	0.091	08-JUN-94	08-JUN-94
Ethyl Benzene	19.	ug/L	97.8	1.6	08-JUN-94	08-JUN-94
Toluene	20.	ug/L	97.3	2.6	08-JUN-94	08-JUN-94
Xylene	72.	ug/L	96.2	1.3	08-JUN-94	08-JUN-94
Gasoline	1.0	mg/L	99.6	3.4	08-JUN-94	08-JUN-94
Surrogate: Bromofluorobenzene	91.2	%			08-JUN-94	08-JUN-94
Comments:	MX = L9405315-7 & L9405315-3					

QUALITY CONTROL REPORT

In order to provide you with the means of assessing the quality of the data in our report, **D&M Laboratories** reports the results of Quality Control samples analyzed with your samples.

The Quality Control samples provide the following QC information:

The Method Blank (**MB**) monitors the level of contamination introduced by reagents or glassware. A minimum of one MB is run per batch of 20 samples or less.

The Method Blank Spike (**MBS**) measures the accuracy of analytical techniques and is not subject to matrix effects. A minimum of one MBS is run per batch of 20 samples or less.

The Matrix Spike (**MS**) measures the accuracy of the method for a matrix type. Due to the high variability within matrix types and the necessity of batching samples from varied sources, matrix spike information from one sample is not necessarily relevant to other samples on the batch. A minimum of two matrix spikes, MS and MSD, are run per batch of 20 samples or less. The sample selected for the matrix spike is designated **MX**, and may or may not have been submitted by the recipient of this report.

The Matrix Spike Duplicate (**MSD**), along with the MS, is used to monitor the precision (**RPD**) of the method and to indicate possible non homogeneity of the sample matrix.

Equations used for determining percent recovery and relative percent difference (RPD) are as follows:

MBS % Recovery = (MBS result / MBS spike level) x 100
MS % Recovery = [(MS result - MX result) / MS spike level] x 100
RPD ={ | MS result - MSD result | / [(MS result + MSD result) / 2]} x 100

We continue to strive to improve the quality of service to our clients. We welcome any questions or comments you may have about this information, or about **D&M Laboratories** in general. Please contact a Project Manager for further information.

URIBE & ASSOCIATES
ENVIRONMENTAL CONSULTING SERVICES

L9406008

CHAIN-OF-CUSTODY RECORD

RECEIVED
1994 JUN -1 PM 4:38

Project No.: 96-209
Project Name: C-401 Shippers Empire

REPORT RESULTS TO
Name: Andy Meyer
Company: URIBE & ASSOCIATES
Mailing Address: 2930 LAKESHORE AVE., SUITE 200
City, State, Zip: OAKLAND, CA 94610-3614
Telephone No.: 510-832-2233 Telefax No.: 510-832-2237

SEND INVOICE TO
Purchase Order Number: 20187
Name: Dan Schoenholz
Company: Port of Oakland Dept: Environ.
Mailing Address: 530 Water St
City, State, Zip: Oakland CA 94607

Turn-Around Time:
☐ 24 hr ☐ 48 hr ☐ 72 hr
☐ 5 day ☒ 10 day (Standard)

Rush Charges Authorized?
☐ Yes ☒ No

Phone Results ☐ Fax Results ☒

Special Instructions:

ANALYSES REQUESTED

No.	Date	Time	Matrix/Medium	Sample Identification Number	# OF CONTAINERS	TPH-Diesel	TPH-Gasoline	BTEX	Remarks
	5/27/94	2:30	Water	MW-2	6	X	X	X	

SAMPLES RECEIVED IN GOOD CONDITION
NO BROKEN OR LEAKING CONTAINERS

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐ N/A
COOLER TEMPERATURE COLD °C

4 VOAs 2 1 Lamb Courier

CHAIN OF CUSTODY

Collected by: Andrew Meyer (Print)
Relinquished by: Andrew Meyer Date: 6/1/94 Time: 3:00
Relinquished by: Date: Time:

Collector's Signature: Andrew Meyer
Received by: K.V Stancoska Date: 6-1-94 Time: 3:03pm
Received by: Date: Time:

Method of Shipment:

Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

Original (White) Laboratory Copy (Yellow) Field Copy (Pink)

D&M LABORATORIES
ENVIRONMENTAL AND INDUSTRIAL HYGIENE SERVICES

3700 Lakeville Highway, Petaluma, CA 94954
P.O. Box 808024, Petaluma, CA 94975-8024
Telephone: (707) 763-8245
FAX (707) 763-4065

Andrew Meyer
Uribe & Associates
2930 Lakeshore Avenue #200
Oakland, CA 94610-3614

June 17, 1994

Customer Project: 96-209 Shippers Imperial
Laboratory Job: L9406053

On June 7, 1994 we received 1 sample(s) for analysis. Samples were analyzed by the following method(s):

Diesel (8015 Modified)

Gasoline (8015 Modified)

Mary Tanner
Project Manager

Robert Peak
Laboratory Director
Robert Peak

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for: Uribe & Associates
Project Id: 96-209 Shippers Imperial
Sample Id: MW-3-P
Lab Id: L9406053-1

Collected: 07-JUN-94
Received: 07-JUN-94
Reported: 17-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
8015DS					
Diesel	1000000	2500	mg/Kg	13-JUN-94	14-JUN-94
-	-				
Surrogate	-				
o-Terphenyl		-	%	13-JUN-94	14-JUN-94
-	-				
Comments:	See Lab note #12 and #16.				
-	-				
-	-				
GAS-SS					
Gasoline	ND <	4000	mg/Kg	14-JUN-94	14-JUN-94
-	-				
Surrogate:	-				
4-Bromofluorobenzene	99.	-	%	14-JUN-94	14-JUN-94
-	-				
-	48,000 ppm gas range organics semi-quantitated.				
Comments:	See footnote 17.				

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG5082-1

Reported: 16-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
TPHIDQ-S+SURR					
Gas	ND <	5.0	mg/Kg	13-JUN-94	14-JUN-94
Mineral Spirits	ND <	5.0	mg/Kg	13-JUN-94	14-JUN-94
Jet Fuel	ND <	5.0	mg/Kg	13-JUN-94	14-JUN-94
Kerosine	ND <	5.0	mg/Kg	13-JUN-94	14-JUN-94
Diesel	ND <	5.0	mg/Kg	13-JUN-94	14-JUN-94
Waste Oil	ND <	50.	mg/Kg	13-JUN-94	14-JUN-94
-	-				
Surrogate	-				
o-Terphenyl	118.	-	%	13-JUN-94	14-JUN-94
-	-				
Comments:	None				
-	-				
-	-				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG5082-2

Reported: 16-JUN-94

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
TPHIDQ-S+SURR							
Gas	ND <	mg/Kg				13-JUN-94	14-JUN-94
Mineral Spirits	ND <	mg/Kg				13-JUN-94	14-JUN-94
Jet Fuel	ND <	mg/Kg				13-JUN-94	14-JUN-94
Kerosine	ND <	mg/Kg				13-JUN-94	14-JUN-94
Diesel	19.1	mg/Kg	20	mg/Kg	95	13-JUN-94	14-JUN-94
Waste Oil	ND <	mg/Kg				13-JUN-94	14-JUN-94
-	-						
Surrogate	-						
o-Terphenyl	126.	%				13-JUN-94	14-JUN-94
-	-						
Comments:	None						
-	-						
-	-						

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG4963-14

Reported: 16-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
GAS-SS					
Gasoline	ND <	0.20	mg/Kg	03-JUN-94	03-JUN-94
-	-				
Surrogate:	-				
4-Bromofluorobenzene	120	-	%	03-JUN-94	03-JUN-94
-	-				
Comments:	-				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG4963-15

Reported: 16-JUN-94

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
GAS-SS							
Gasoline	3.57	mg/Kg	5	mg/Kg	71.4%	03-JUN-94	03-JUN-94
Surrogate: 4-Bromofluorobenzene	111.	%				03-JUN-94	03-JUN-94
Comments:							

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for:
Project Id:
Sample Id: Method Blank
Lab Id: WG4963-16

Reported: 16-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
GAS-SS					
Gasoline	ND <	0.20	mg/Kg	14-JUN-94	14-JUN-94
-	-				
Surrogate:	-				
4-Bromofluorobenzene	96.	-	%	14-JUN-94	14-JUN-94
-	-				
Comments:	-				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Method Blank Spike
Lab Id: WG4963-17

Reported: 16-JUN-94

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
GAS-SS							
Gasoline	4.05	mg/Kg	5	mg/Kg	80.9%	14-JUN-94	14-JUN-94
-	-						
Surrogate:	-						
4-Bromofluorobenzene	100.	%				14-JUN-94	14-JUN-94
-	-						
Comments:	-						

D&M Laboratories

ANALYTICAL DATA REPORT

Prepared for:
Project Id:
Sample Id: MX
Lab Id: WG4963-11

Reported: 16-JUN-94

Parameter	Value	Limit	Units	Extracted	Analyzed
GAS-SS					
Gasoline	ND <	0.20	mg/Kg	03-JUN-94	03-JUN-94
Surrogate: 4-Bromofluorobenzene	110	-	%	03-JUN-94	03-JUN-94
Comments:	MX = L9405083-4				

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Matrix Spike
Lab Id: WG4963-12

Reported: 16-JUN-94

Parameter	Value	Units	Spike	Units	% Rec	Extracted	Analyzed
GAS-SS							
Gasoline	4.94	mg/Kg	5	mg/Kg	98.8%	03-JUN-94	03-JUN-94
Surrogate:							
4-Bromofluorobenzene	106.	%				03-JUN-94	03-JUN-94
Comments:							

D&M Laboratories

QUALITY CONTROL REPORT

Prepared for:
Project Id:
Sample Id: Matrix Spike Dup
Lab Id: WG4963-13

Reported: 16-JUN-94

Parameter	Value	Units	% Rec	RPD	Extracted	Analyzed
GAS-SS						
Gasoline	5.09	mg/Kg	102 %	3.3	03-JUN-94	03-JUN-94
Surrogate:						
4-Bromofluorobenzene	106.	%			03-JUN-94	03-JUN-94
Comments:						

LABORATORY FOOTNOTES

(1) Sample containers were received broken.
(2) The samples were not properly refrigerated during transport to the laboratory.
(3) The samples were not properly preserved.
(4) The information on the chain-of-custody does not match the information on the sample containers.
(5) The samples were received after the required holding time.
(6) This analyte was detected in the method blank above the reporting limit.
(7) This analyte was detected in the trip blank above the reporting limit.
(8) The recovery of the matrix spike indicates the presence of matrix effects. The MBS recovery was acceptable.
(9) The matrix spike recovery is not significant due to the high concentration of the analyte in the sample relative to the amount of spike added.
(10) The method of standard additions was performed and confirmed a matrix interference.
(11) The variation in spike recoveries reflects the nonhomogeneity of the sample.
(12) Accurate quantitation of the surrogate was not possible due to the extent of sample dilution.
(13) The surrogate recovery was high due to the presence of interfering compounds in the sample.
(14) The surrogate recovery was low due to matrix effects. The analysis was repeated with similiar results.
(15) The detection limit was raised due to the insufficient amount of sample available for analysis.
(16) The detection limit was raised due to the dilution required by high-level analytes in the sample.
(17) The detection limit was raised due to the dilution required by high-level non-target analytes in the sample.
(18) These compounds co-elute; therefore, a total value is reported for both.
(19) The sample was tentatively identified and semi-quantitated based on the best chromatographic fit from the available standards.
(20) The sample chromatograph resembled an "aged" hydrocarbon product.
(21) Hydrocarbons were found in the range of gasoline and diesel but did not resemble a gasoline or diesel fingerprint.
(22) This sample was extracted outside of the required holding time.
(23) This sample was analyzed outside of the required holding time.
(24) The variation in duplicate results reflects the nonhomogeneity of the sample.
(25) The recovery of the matrix spike(s) reflects the nonhomogeneity of the sample. The MBS recovery was acceptable.
(26) The sample was not analyzed on a second column.
(27) The presence of di-n-butyl phthalate may be due to laboratory contamination.
(28) This sample was analyzed outside of the required holding time per client request.
(29) The detection limit was raised due to the high background from matrix interferences.

QUALITY CONTROL REPORT

In order to provide you with the means of assessing the quality of the data in our report, **D&M Laboratories** reports the results of Quality Control samples analyzed with your samples.

The Quality Control samples provide the following QC information:

The Method Blank (**MB**) monitors the level of contamination introduced by reagents or glassware. A minimum of one MB is run per batch of 20 samples or less.

The Method Blank Spike (**MBS**) measures the accuracy of analytical techniques and is not subject to matrix effects. A minimum of one MBS is run per batch of 20 samples or less.

The Matrix Spike (**MS**) measures the accuracy of the method for a matrix type. Due to the high variability within matrix types and the necessity of batching samples from varied sources, matrix spike information from one sample is not necessarily relevant to other samples on the batch. A minimum of two matrix spikes, MS and MSD, are run per batch of 20 samples or less. The sample selected for the matrix spike is designated **MX**, and may or may not have been submitted by the recipient of this report.

The Matrix Spike Duplicate (**MSD**), along with the MS, is used to monitor the precision (**RPD**) of the method and to indicate possible non homogeneity of the sample matrix.

Equations used for determining percent recovery and relative percent difference (RPD) are as follows:

MBS % Recovery = (MBS result / MBS spike level) x 100
MS % Recovery = [(MS result - MX result) / MS spike level] x 100
RPD ={ | MS result - MSD result | / [(MS result + MSD result) / 2]} x 100

We continue to strive to improve the quality of service to our clients. We welcome any questions or comments you may have about this information, or about **D&M Laboratories** in general. Please contact a Project Manager for further information.

L9406053

URIBE & ASSOCIATES
ENVIRONMENTAL CONSULTING SERVICES

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project No.: 96-209 | Project Name: 96-209 Shippers Imperial

REPORT RESULTS TO
Name: Andrew Meyer
Company: URIBE & ASSOCIATES
Mailing Address: 2930 LAKESHORE AVE., SUITE 200
City, State, Zip: OAKLAND, CA 94610-3614
Telephone No.: 510-832-2233 Telefax No.: 510-832-2237

SEND INVOICE TO
Purchase Order Number: 201867
Name: Dan Schoenholz
Company: Port of Oakland Dept: Environmental
Mailing Address: 530 Water Street
City, State, Zip: Oakland CA 94607

Turn-Around Time:
☐ 24 hr ☐ 48 hr ☐ 72 hr
☐ 5 day ☐ 10 day (Standard)

Rush Charges Authorized? ☐ Yes ☐ No
Phone Results ☐ Fax Results ☐

Special Instructions:
need results by next wed. → 6/15/94

ANALYSES REQUESTED

No.	Date	Time	Matrix/Medium	Sample Identification Number	# OF CONTAINERS	TPH-Gasoline / TPH-Diesel	Remarks
	6/7/94	10:15	Water	MW-3-P	1		
					1 VOA		

SAMPLES RECEIVED IN GOOD CONDITION
NO BROKEN OR LEAKING CONTAINERS

COOLER CUSTODY SEALS INTACT ☐ NOT INTACT ☐ N/A
COOLER TEMPERATURE COOL °C

RECEIVED
JUN 7 3 55 PM '94

CHAIN OF CUSTODY

Collected by: Andrew Meyer (Print) 6/7/94 Date 10:15 Time
Collector's Signature: Andrew Meyer

Relinquished by: Andrew Meyer 6/7/94 Date Time
Received by: Gail Kerrman 6/7/94 Date 2:45 Time

Relinquished by: Date Time
Received by: 6/7/94 Date 3:52 Time

Method of Shipment:
Sample Condition Upon Receipt: ☐ Acceptable ☐ Other (explain)

Original (White) Laboratory Copy (Yellow) Field Copy (Pink)