

March 29, 1989

Project No. 190452

Mr. Philip Krejci Manager, Environmental Engineering ARATEX Services, Inc. 1834 Walden Office Square, Suite 450 Schaumberg, IL 60173

Ground Water Monitoring Well Installation

Dear Mr. Krejci:

On February 16 and 17, 1989, one soil boring was completed beneath the site of the former 500-gallon fuel oil tank. Three ground water monitoring wells were installed, soil samples were taken at five-foot intervals, and three ground water samples were collected adjacent to the site of the former 7,000-gallon underground unleaded gasoline tank (Figure 1). This report details the results of this investigation.

BACKGROUND

The property is located at 958 28th Street, Oakland, California. The tanks had no reported history of leaking at the time of the tank removal. During the tank removal, soil samples were obtained from beneath each tank and from the tank walls as required for tank closure.

Analysis of soil samples revealed 98 parts per million (ppm) of high boiling hydrocarbons, calculated as diesel, at the east end of the fuel oil tank located near the loading dock. The Alameda County Health Agency required that an additional sample be taken from two feet below the east end of the excavation.

Soil samples were also collected from beneath the 7,000-gallon gasoline tank located under the sidewalk on Myrtle Street. Contamination, in varying levels, was detected around the tank, except at the north wall. The highest levels of contamination were detected in the west wall of the excavation, and contamination was also prominent in the south wall. Due to requirements of the Alameda County Health Agency, three monitoring wells were deemed necessary to establish the extent of contamination and the hydraulic gradient of the area.

During the removal of the 7,000 gallon unleaded gasoline tank, all contaminated soil above the water table and within the confines of the excavation shoring was removed. This amounted to approximately 40 yards of contaminated soil.

Regional Office

SOIL BORING

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The soil boring (SB-A201) at the fuel oil tank was completed to a depth of

17.0 feet below ground surface. The boring was completed by drilling through

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APPENDIX

APPENDIX **B**

the tank excavation backfill which consisted of pea gravel to a depth of 15.0 feet. Beneath the gravel, a brown silty clay was encountered and a sample was

taken from 16.5 to 17.0 feet.

GROUND WATER MONITORING WELLS The three monitoring wells with boring logs (Appendix A) were all completed within ten feet of the excavation area from which the 7,000-gallon gasoline tank. located under the sidewalk on Myrtle Street, was removed. To establish relative well elevations MW-Al, -A2, -A3 were surveyed using a hand level. MW-A3 was assumed to be 20.0 feet above mean sea level. This elevation was taken from Oakland West, California 7.5 minute topographic map. The elevation of MW-A1 is 20.38 feet and MW-A2 is 19.91 feet above mean sea level.

Subsurface Materials

Monitoring well MW-Al was completed along the western edge of the tank excavation backfill (Figure 1). Due to the close proximity of the tank removal area to the building, MW-Al was initiated through the excavation backfill material (pea gravel) after penetration of the concrete sidewalk and associated subgrade. The gravel backfill extends to a depth of 14.0 feet below ground surface. Beneath this backfill unit, a brown silty clay was encountered from 14.0 feet to approximately 25.0 feet. Below this unit, a gravelly sand was encountered, which continued to a depth of 30.0 feet, where a five-foot thick, pale yellow-brown clay was found. Ground water was encountered in native soil at approximately 21.0 feet below ground surface. The uppermost aquifer was encountered at 25 feet and extended to 30 feet below ground surface. Samples were not collected from the pea gravel, but were collected for chemical analysis from native silty clay soil at a depth of 17.5 to 18.0 feet.

MW-A2 is located within ten feet of the southern edge of the excavation backfill area (Figure 1). The well boring was initiated through the sidewalk and associated subgrade. The first soil encountered was a sandy clay which extends to a depth of about 7.5 feet below ground surface. A silty clay then extends to a depth of about 14.5 feet. A fine-grained sand was found to a depth of 18.0 feet, where a silty clay was encountered to a depth of 21.5 feet. Sandy silt underlies this to 25.0 feet, and a sandy clay below this to 28.0 feet which is the total depth of the hole. Ground water was encountered in this boring at a depth of approximately 22.0 feet below ground surface. The uppermost aquifer was encountered at 22 feet and extended to 25 feet below ground surface. Samples were collected for chemical analysis at depths of 5.5 to 6.0 feet, 9.5 to 10.0 feet, 14.5 to 15.0 feet, and 19.5 to 20.0 feet.

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MW-A3 is located beneath the asphalt pavement on Myrtle Avenue and within ten feet of the tank excavation (Figure 1). Beneath the asphalt pavement and associated subgrade, an organic clay extends to about four feet, where a silty clay extends to about 18.0 feet below ground surface. A silty sand lies beneath this to 23.0 feet, where a silty clay extends to 27.0 feet. A clayey sand was found from 27.0 to 31.0 feet and is underlain by a silty clay to 35.5 feet, which is the total depth of the hole. Ground water was found at 27.0 feet below ground surface. The uppermost aquifer was encountered at 27 feet and extended to 32 feet below ground surface. Samples were taken for chemical analysis at 4.5 to 5.0 feet, 9.5 to 10.0 feet, 14.5 to 15.0 feet, and 19.5 to 20.0 feet.

Well Installation

All monitoring wells were installed using a four-inch-diameter PVC Schedule 40 casing, 0.020-inch-continuous-slot PVC well screen, Sand No. 3 filter pack, bentonite pellets, neat cement, a locking top cap, and a christy box finish which is flush with the surface.

MW-Al has ten feet of screen from 16.5 to 26.5 feet. The sand pack extends from 16.0 to 28.0 feet. Bentonite pellets extended from 14.0 to 16.0 feet. Above 14.0 feet, pea gravel (tank excavation backfill) closed in around the casing. Because this boring was initiated through pea gravel, a grout protection seal was not possible. The top 1.5 feet was sealed using a sand-cement-pea gravel slurry into which the christy box was set flush with the sidewalk which overlies the pea gravel.

MW-A2 has ten feet of screen installed from 18.0 to 28.0 feet. The sand pack extends from 16.5 to 28.0 feet: Bentonite pellets were installed from 15.0 to 16.5 feet. The well is sealed by neat cement grout, and covered with a flush mounted christy box.

MW-A3 has ten feet of screen installed from 24.5 to 34.5 feet. The sand pack extends from 23.5 to 34.5 feet. Bentonite pellets seal the sand pack from 21.5 to 23.5 feet. The well is sealed with a sand/cement slurry above the bentonite, and covered with a flush mounted christy box.

SOIL SAMPLING METHODS

Soil samples were taken using the California Modified Sampler (split-spoon) with a two-inch inside diameter. The sampler was lined with three two-inch by six-inch brass sleeves. The sampler was driven by a 140-pound hammer dropped from 30 inches. Samples were taken through the hollow-stem auger. Immediately after sampling, the brass tubes were removed from the sampler, capped and sealed, and placed in a cooler.

DECONTAMINATION

All downhole equipment was decontaminated by standard IT procedures which include, but are not limited to, steam-cleaning of augers between holes and the use of decontaminated brass sleeves which are individually foil-wrapped and sealed in ziploc bags.

WELL DEVELOPMENT

All three wells, MW-1, MW-2, and MW-3, were developed by the surge block method on March 7, 1989. Because of turbidity in the wells, they were allowed to settle overnight and were sampled on March 8, 1989.

SAMPLE ANALYSIS

All soil and water samples were analyzed for benzene, toluene, xylene, and ethyl benzene as well as low boiling hydrocarbons calculated as gasoline and high boiling hydrocarbons calculated as diesel. Methods used were those recommended by the San Francisco Bay Regional Water Quality Control Board of the State of California, Department of Health Services, and by the Alameda County Health Agency. Samples were analyzed at IT's Analytical Services, San Jose Laboratory.

RESULTS

The following sections summarize results for soil samples and water samples.

Soil Samples

Soil sample SB-A201 (16.5 to 17.0 feet) showed none detected for all constituents analyzed except for benzene. The sample was found to contain 0.08 parts per million (ppm) benzene with a detection limit of 0.05 ppm.

Soil sample MW-A1 (17.5 - 18.0 feet) from monitoring well MW-A1 showed none detected for all constituents analyzed except xylenes which were 0.3 ppm with a detection limit of 0.3 ppm.

Soil samples from monitoring well MW-A2 showed the following results:

- Sample MW-A2 (5.5 6.0 feet) showed 33 ppm low boiling hydrocarbons, 180 ppm high boiling hydrocarbons, 0.05 ppm benzene; 0.1 ppm toluene, 0.3 ppm xylenes, and none detected for ethylbenzene.
- MW-A2 (9.5 10.0 feet) had 390 ppm low boiling hydrocarbons calculated as gasoline, 310 high boiling hydrocarbons calculated as diesel, 1.4 ppm benzene, 6 ppm toluene, 11 ppm ethylbenzene, and 58 ppm xylenes. MW-A2 (14.5 15.0 feet) had 4,000 ppm low boiling hydrocarbons calculated as gasoline, 4,100 ppm high boiling hydrocarbons calculated as diesel, 22 ppm benzene, 190 ppm toluene, 67 ppm ethylbenzene, and 420 ppm xylenes.

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• MW-A2 (19.5 - 20.0 feet) showed 8 ppm low boiling hydrocarbons calculated as gasoline, 1.0 ppm benzene, 0.6 ppm toluene, 0.2 ppm ethylbenzene and 1.0 ppm xylenes. High boiling hydrocarbons were found to be none detected.

Soil samples identified as MW-A3 from monitoring well MW-A3 show the following results:

- MW-A3 (4.5 6.0 feet) had none detected for all constituents analyzed.
- MW-A3 (9.5 10.0 feet) showed none detected for all constituents analyzed except benzene which was 0.42 ppm.
- MW-A3 (14.5 15.0 feet) showed none detected for all constituents analyzed.

The complete analytical report for soil samples is in Appendix B.

Water Samples

Water sample identified as 01-89 MW-Al was collected from monitoring well MW-Al. This sample showed 7,200 ppb low boiling hydrocarbons, 120 ppb benzene, 150 ppb toluene, 60 ppb ethyl benzene, 2,100 ppb xylenes and 12,000 ppb high boiling hydrocarbons.

Water sample identified as 02-89 MW-A2 was collected from monitoring well MW-A2. This sample showed 5,200 ppb low boiling hydrocarbons, 380 ppb benzene, 200 ppb toluene, none detected ethyl benzene, 700 ppb xylenes and 7,700 ppb high boiling hydrocarbons.

Water sample identified as 03-89 MW-A3 was collected from monitoring well MW-A3. This sample showed none detected for all constituents analyzed except low boiling hydrocarbons 50 ppb, benzene 10 ppb and xylenes 5 ppb.

Water sample identified as trip blank showed none detected for all constituents analyzed. All results for both soil and water samples reported as high boiling hydrocarbons, calculated as diesel, appear to be the less volatile components of gasoline, as noted on the lab reports.

The complete analytical report for the water samples is in Appendix C.

CONCLUSION

Soil Borings

The analytical results acquired from testing the soil sample from SB-A201 showed none detected for all constituents analyzed except for benzene which was present in trace amounts.

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The soil sample obtained from SB-A201 indicates that the contamination initially identified in the east wall of the 500-gallon fuel oil tank was removed during excavation and no vertical migration of the contaminants has occurred.

Monitoring Wells

Soil samples were collected from various depths from each of the three monitoring wells. The analytical results from tested soil samples in MW-Al indicated only a trace amount of xylenes. The analytical results occurring from MW-A2 soil samples indicated significant contamination at 5 1/2 feet to 18 feet with the largest concentrations of contaminants in a poorly sorted sand (14 to 18 feet). The contamination included BTX & E, high and low boil hydrocarbons calculated to be diesel and gasoline, respectively. (The high boiling hydrocarbons were calculated as diesel but appear to be the less volatile components of gasoline, as noted on the lab reports.) The soil sample results acquired from MW-A3 showed none detected for all constituents analyzed at all depths except for a slight amount of benzene in a zone from 9

Water samples were collected from each of the monitoring wells. The analytical results from the water sample from MW-A1 showed the highest amount of contamination of any of the three monitoring wells with the water samples from MW-A3 having the least amount of contamination.

The soil samples collected and analyzed from the varying depths in the three monitoring wells indicates a concentration of contaminants in the vadose zone of MW-A2. The increasing concentrations with depth indicates a vertical migration of the contaminants to a maximum depth of 18 feet which is in a poorly sorted sand. The silty clay encountered at a depth of approximately 18 feet appears to be a barrier to the downward movement of contaminants. The contamination in the soil samples of MW-A1 and MW-A3 was minimal:

The water samples from MW-Al showed the highest concentration of contaminants with the water sample from MW-A2 having less contamination but still a significant amount. The water sample from MW-A3 was essentially clean, suggesting ground water movement to the southwest.

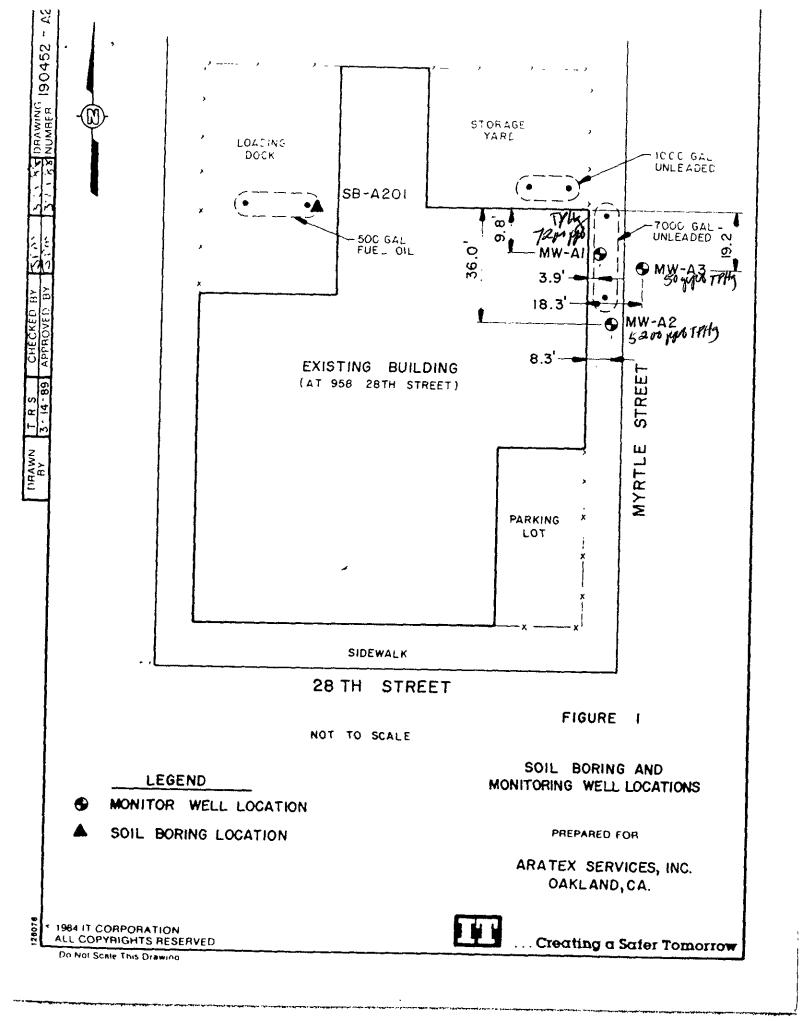
If you have any questions or require any additional information, please call me at (415) 372-9100.

Sincerely,

John P. McGuire

Supervisor, Underground Storage Tank Engineering

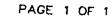
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1333 N. H. d.J. O	SAMPLE	RECOVERY	WELL SUMMAR	BLOWS ON SAMPLER	(PER 6")		ALI PORT	BORING NO. SB-A201 FIELD GEOLOGIST W. Hopkins EDITED BY W. Hopkins CHECKED BY H. Fleck TOTAL DEPTH 17 Legt DATE BEGAN 2-16-89 GROUND SURFACE EL. NA
20 25 30 35	SB- A201	18/18		13,20,25	GP CL	1000000000000000000000000000000000000		DESCRIPTION PEA GRAVEL, backfill material for tank excavation area. SILTY CLAY: brown, wet, medium stiff, low to moderate plasticity. TOTAL DEPTH 17 FEET No ground water encountered

DRILLING CO.: Exploration Geosciences
DRILLING METHOD: Hollow Stem Auger
SAMPLING METHODS: California Modified
Split Barrel Sampler

PROJECT NO.: 190452 CLIENT: Aratex Services Ookland, California S9-A201(AX-1)





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SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. MW-A3 JAWPLE PYPE & NUMBER SYMBOL PECOVERY BLOWS ON 77 COORDINATES N-NA FIELD GEOLOGIST W. Hopkins WELL SUMMARY i^T EDITED BY W. Hopkins DATE BEGAN 2-17-89 uscs CHECKED BY H. Fleck DATE FINISHED 2-17-89
TOTAL DEPTH 35.5 feet GROUND SIRFACE FOR _ GROUND SURFACE EL. NA 0 DESCRIPTION
Asphalt and subgrade. 12" Christy box-Locking can CLAY; dark gray, moist, stiff, high plasticity, organic rich OH Slight petroleum odor, 4.5-5.0 12/18 3.8.13 SILTY CLAY; dark yellow orange, moist, stiff, low plasticity 5 MW-A3 16/18 5,10,15 SILTY CLAY; dark yellow orange, moist, stiff, low plasticity Strong petroleum odor, 4" sch. 40 PVC well casing-CL Sand, cement Sturry . MW-A3 15/18 SILTY CLAY; greenish gray to dark gray, moist, medium dense, non-plastic. Strong petroleum odor. 7,7,13 SILTY SAHD (fine groined); pale yellow brown, wet, medium 191-200 12/18 dense, non-plastic. 11,13,14 20 SM Bentonite pellets 21.5 to 23.5 ft.-SILTY CLAY; moderate yellow brown, wet, stiff, low MW-A3 10/18 plasticity. 11,15,16 α ♥ Ground water

CLAYEY SAND: moderate yellow orange, saturated, medium dense, non-plastic, with minor gravel. 4°, .020° continuous slot, PVC well screen from 24,5 \$C to 34.5 ft. 30. #3 sand SILTY CLAY; wet, stiff, low plasticity. filler pack . αL Native slough

DRILLING CO.: Exploration Geosciences DRILLING METHOD: Hollow Stem Auger SAMPLING METHODS: California Modified

Split Barrel Sampler

PROJECT, NO.: 190452 CLIENT: Aratex Services Oakland, California TOTAL DEPTH 35.5 FEET

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SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

O JEPTH IN FEET	SAMPLE	RECOVERY	WELL SU		BLOWS ON SAMPLER (PER 6.)	USCS STABOL	PROFILE	FIELD GEOLOGIST W. Hopkins EDITED BY W. Hopkins CHECKED BY H. Flock TOTAL DEPTH 28.0 feet DESCRIPTION COORDINATES NAA E HA E HA DATE FINISHED 2-17-89 GROUND SURFACE EL. NA
•			facting cap			CL/		SANDY CLAY; dark gray to black, wet, moderate to high plasticity, organic rich.
5		215/1	8 4" sch 40 PVC		2,2,2	CL/ SC		SANDY CLAY/CLAYEY SAND; dark greenish gray, wet, low plasticity, medium stiff, with gravel clasts, strong petroleum odor.
10	W-A: 95-100	12/11	we'l cosing		6,13,17			SILTY CLAY: mottled gray and brown, moist, stiff, low to moderate plasticity, moderate petroleum odor.
	NW . 42					Cr		SILTY CLAY; mottled gray and brown, moist, stiff, low to moderate plasticity, moderate petroleum odor.
5 -	VW ~A2 14.5-150	15/18	Bentonite pelleta 15 to 16.5 ft,		25,33,40	SP		SAND (fine grained); very pale orange, wet, medium dense, non-plastic.
1111	VW - A2 19.5-20.0	15/18	4", .020" continuos	1 123 1	,8, <u>9</u>	1		SILTY CLAY; moderate yellow brown, wet, stiff, low plasticity.
11111		• •	soreen 18 to 28 ft			1)))) ÷	Ground-water SANDY SILT; brown, saturated, medium dense, non-plastic to low plasticity.
			\$3 sand fitter pack		С			SANDY CLAY: brown, soturated, stiff, low plasticity.
+++++								TOTAL DEPTH 28 FEET

DRILLING CO.: Exploration Geosciences DRILLING METHOD: Hollow Stem Auger SAMPLING METHODS: California Modified Split Barrel Sampler

PROJECT NO.: 190452
CLIENT: Aratex Services
Oakland, California

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SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

**W-A2(*AX-1)

BORING NO. MW-A1 SAMPLE TYPE & "UMBER RECOUERY ('') USCS SYMBOL BLOWS ON SAMPLER COORDINATES N NA FIELD GEOLOGIST W. Hopkins STATE OF BUILDING i Price EDITED BY W. Hopkins DATE BEGAN 2-16-89 CHECKED BY H. Fleck DATE FINISHED 2-17-89 TOTAL DEPTH 31.5 feet GROUND SURFACE EL NA C DESCRIPTION
4" concrete and 4" aggregate base 12° Christy box-PEA GRAVEL, wet. Sand, cement 5 4" sch 40 FVC well casing ---GP [Petroleum odor. Peo groze' 10 -SILTY CLAY: brown, moist, medium stiff, low plasticity Bentonite periets MW-A1 175-180 18/18 15,15,15 CL 20 4". .020" continuous slot, PVC well 又 Ground water screen 16.5 to 26 5 11 -225-230 18/18 12,10,14 SILTY CLAY; moderate yellow brown, saturated, medium stiff, low plasticity. Moderate petroleum ador. 25 GRAVELLY SAND (fine sond to fine gravel); very pole orange, wet(saturated), medium dense, non-plastic. SF 10/15 10.37,50/4 #30 sond filter pack SW Notive Slough 30 CLAY; pale yellow brown with dark yellow orange spots, wet, moderate plasticity. 15/18 10,12,14 CL TOTAL DEPTH 31.5 FEET

DRILLING CO.: Exploration Geosciences DRILLING METHOD: Hollow Stem Auger SAMPLING METHODS: California Modified

Split Barrel Sampler

PROJECT NO.: 190452 CHEHT: Aratex Services Oakland, California



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SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

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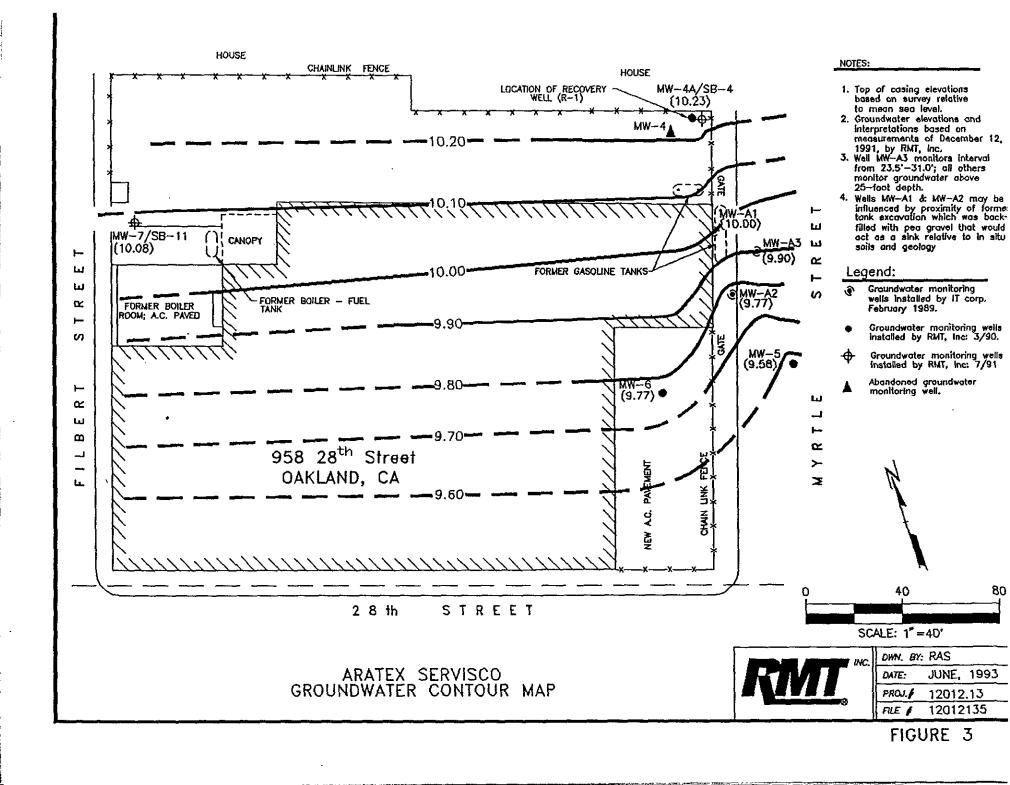


TABLE 1

TANK CLOSURES: SUBGRADE SOIL SAMPLES HYDROCARBON ANALYSES

958 - 28TH Street Oakland, California

SAMPLE NO.	Location and Description	Low Boiling Pt. Hydrocarbons	High Boiling Pt, Hydrocarbons	Benzene	Tolucue	Ethyl benzene & Xylenes
SB-05-201-05	West End of 500 gallon Fuel Oil T	N.A.	N.D.	N.A.	Ν.Α.	N,A.
SB-05-201-06	East End of 500 gallon Fuel Oil Ta	N.A.	98 ppm	N.A.	N.A.	N.A.
SB-05-201-01	West End of 1,000 gallon Tank	N.D.	N.A	N.D	N,D	ŊΦ,
SB-05-201-02	East End of 1,000 gallon Tank	N.D.	"" И V	ND	N.D.	и D.
SB-05-201-03	South End of 7,000 gallon Tank	N.D.	А,И	0.10 ppm	N.D.	н.р.
SB-05-201-04	North End of 7,000 gallon Tank	11.0.	11.7	0,28 1911		11,11.
SB-05-274-01	South Wall of 7,000 gatlon Tank	do bbin	` İt V	Q76 ppp	7	l∉© ppm
SB-05-274-02	North Wall of 7,000 gallon Tank	M.D	1CA	ND	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	53 0 ppm
SB-05-274-03	West Wall of 7,000 gallon Tank	530 ppm	A H	4.8 19.00	24 ppg	1111
SB-05-274-04	East Wall of 7,000 gallon Tank	5 ppm	N.A	1.7 ppm	1	La company of the same of the

- 1. Excerpted from "Underground Storage Tan Permanent Closure Report"; IT Corp.; July 5, 1988.
- 2. See Figure 2 for approximate tank locations.
- 3. Sampling depths not indicated.

N.D. = Not detected

N.A. = Not analyzed

TABLE 2

SCI'S FUEL OIL TANK AREA HYDROCARBONS ANALYSES

958 - 28th Street Oakland, California

COMPOUND Total Extractable Hydrocarbons	UNITS mg/kg	TEST METHOD EPA 8015M	SAMPLE 1 1,600	SAMPLE 2 ND
Total Oil & Grease	mg/kg	SWM 17:5520 E&F	4,900	370
Aromatics:		EPA 8020		
Benzene	μg/kg	u	300	ND
Toluene	μg/kg	μ	89	ND
Ethylbenzene	μg/kg	M	910	5,300
Xylenes	μg/kg	H	3,400	15,000

- 1. Data from Subsurface Consultants, Inc.: letter report to Ms. Beatrice Slater/GSL Properties, dated May 23, 1991,
- 2. Approximate sampling locations indicated to be in area of former fuel oil tank at fifteen to twenty feet west of canopy's northwest corner.

TABLE 3

MONITORING WELL CONSTRUCTION SUMMARY

958 - 28th Street Oakland, California

ITEM \ WELL	MW-A1	MW-A2	MW-A3	MW-4	MW-4A	MW-5	MW-6	MW-7
General Data:								
Constructed By	IT Corp.	IT Corp.	IT Corp.	WHMDC	WHMDC	WHMDC	WHMDC	WHMDC
Construction Date	2/17/89	2/17/89	2/17/89	3/5/90	7/16/91	3/6/90	3/5/90	7/17/91
Nominal Size	4-inch	4-inch	4-inch	2-inch	4-inch	4-inch	4-inch	4-inch
Material	PVC	PVC	PVC	PVC	PVC	PVC	PVC	PVC
Schedule				40	40	40	40	40
Well Screen Data								
Slot Size	0.02-inch	0.02-inch	0.02-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch	0.01-inch
From Depth (ft)	16.5 7,	18 2	24.5 %	10 %	15 7.	10 (20	10 6 2	15 6
To Depth (ft)	26.5 ^{f/o}	28 J	34.5	25 J ⁷³	25 J ⁴	30 J	30 J J	30
Length (ft)	10.0	10.0	10.0	15.0	10.0	20.0	20.0	15.0
Filter Pack Data					-			İ
Sand	#3	#3	#3	#1C	#3	#1C	#1C	#3
From Depth (ft)	16	16.5	23.5	8	13.8	8	8	13.5
To Depth (ft)	28	28	34.5	25	25	30	30	30
Length	12.0	11.5	11.0	17.0	11.2	22.0	22.0	16.5
Well Location Data								i
T.O.C. (MSL)	23.50	22.87	23.08	alizationied	24.13	22.89	23.37	21.37
Northing	485,433.3	485,406.8	485,420.5	7/15/91	485,474.5	485,372.0	485,376.6	485,506.1
Easting	1,486,767.0	1,486,766.5	1,486,771.9		1,486,771.9	1,486,782.8	1,486,726.8	1,486,538.8

- 1. Details for wells installed by International Technology Corporation (IT Corp.) obtained from boring logs include in their report title: "Ground Water Monitoring Well Installation; 958-28 Street; Oakland, California", dated March 29, 1989.
- 2. Well MW-4 through MW-7 installed by West Hazmat Drilling Corp. (WHDC) as part of investigations performed by RMT, Inc.
- 3. Well locations survey to California State Coordinate System 1927, Grid North; Survey performed by Kier & Wright, Civil Engineers & Surveyors, Inc. of Pleasonton, California. Original data on file; ref City of Oakland Bench Mark No. 2578 at 26.70 MSL].
- 4. Well MW-4 abandoned on July 15, 1991 by RMT, Inc./WHDC.

TABLE 4

WELL FILTER PACK AND SCREEN SIZING SUMMARY

958 - 28th Street Oakland, California

Boring No.	Sample Depth (ftft.)	U.S.C.S.	D85,base (mm)	D15,base (mm)	Piping Ratio	Piping Ratio		Permeability	
MW-4	15.0 - 15.5	CL	< 0.074	<< 0.074	n.a	1000000000	Ratio	Ratio	Comments
MW-5	16.0 - 16.5	SW-GW	10.84	0.17	0.05	n.a	п.а.	n.a.	See note #4
MW-5	26.0 - 26.5	SW	7.59	0.19	0.07	0.09	3.24	5.68	Acceptable
MW-6	20.5 - 26.0	SC-CL	7.08	< 0.074	····	0.14	2.89 > 7.4	5.08	Acceptable

U.S. Standard	Percent Pa	assing #1C	Percent Passing #3					
Sieve Size	MAX	MIN.	MAX	MIN.				
# 6	-	-	100	2 2 10 10 10 10				
# 8	_	·	97					
#12	100	_	68	91				
#16	99	94	15	52				
#20	70	50		9				
#30	25	10		V V V				
#40	5		2766 07612350 5765 2787 5796 2					
D85 size (mm)		0.9 mm		30/3 00 00 00 00 00 00 00 00 00 00 00 00 00				
D15 size (mm)		0.55 mm		2.03 0.97				

NOTES:

- 1. Individual particle size distributions presented in "Supplementary Subsurface Investigations" report dated July 1990, by RMT, Inc.
- 2. Dnn,base = particle size for percent "nn" finer; where "base" is the in situ soil and "filter" is the sand pack.
- 3. Gradations of "#1C" and "#3" sands obtained from supplier; Diversified Well Products, Inc.
- 4. Design criteria [below] not directly applicable for predominantly fine-grained and cohesive materials.

Design Criteria:

Piping Ratio = D15, filter/D85, base < 5; to guard against migration of base into filter pack.

Permeability Ratio = D15, filter/D15, base > ~5; to gaurd against filter pack retarding flow from the in situ material.

TABLE 7a

SOIL SAMPLES ANALYSES SUMMARY

Storage Yard Area

958 - 28th Street Oakland, California

ļ	Samp	le Location	SB-4	SB-4	SB-4	SB-4	SB-5	SB-5	SB-5	SB-6	SB-6	SB-6	SB-7	SB-7	SB-7	
	Sample	Depth (ft)	9.0	12.0	15.0	17.5	5.5	8.0	12.5	9.0	10.5	12.0	7.5	9.5	12.5	MAX
	Dat	e Sampled:	7/16/91	7/16/91	7/16/91	7/16/91	7/15/91	7/15/91	7/15	7/15/91	7/15/91	7/15/91	7/15/91	7/15/91	7/15/91	Value
TEST	Da	te Injected:	7/24/91	7/24/91	7/24/91	7/24/91	7/23/91	7/23/91	7/23	7/23/91	7/23/91	7/23/91	7/23/91	7/23/91	7/23/91	Detected
METHOD	FUEL RANGE	MDL														
8015M	Gasoline [C5-C12]	1 mg/kg	ND	ND	1.07	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,
	Jet Fuel [C10-C16]	3 mg/kg	150	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	150
	Diesel [C9-C22]	1 mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0
	Hydraulic	5 mg/kg	-		-	<u>-</u>	-	-	-	-	-	-	-		-	0.0
	Da	te Injected:	7/23/91	7/22/91	7/27/91	7/22/91	7/22/91	7/22/91	7/22/91	7/22/91	7/22/91	7/22/91	7/22/91	7/22/91	7/22/91	1
8020	AROMATIC COME	POUNDS	[Dil=50]	[Dil=50]	[Dil=5]	[Dil=5]		[Dii=50]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	
	Benzene	2.5 μg/kg	ND	130		ND	ND	\$003	5	ND	ND	ND	ND	ND	ND	500
	Toluene	2.5 μg/kg	ND	ND	5	ND	5	4100	4	5	8	ND	5	10	13	100
	Ethylbenzene	2.5 μg/kg	ND	ND	30	ND	ND	450	ND	450						
	Xylenes	2.5 μg/kg	ND	ND	55	ND	ИD	\$50	ND	ND	ND	ND	ND	ND	ND	750

- 1. Laboratory analyses by Thermo Analytical Inc. (TMA/Norcal) of Richmond, California.
- 2. Complete Laboratory reports presented in Appendix E.

TABLE 7b

SOIL SAMPLES ANALYSES SUMMARY

Loading Dock Area

958 - 28th Street Oakland, California

	Samp	le Location	SB-8	SB-8	SB-8	SB-9	SB-9	SB-9	SB-9	SB-10	SB-10	SB-10	CD 11	CD 44	CD 10	CD 44	T
	Sample	Depth (ft)	2.5	9.0	10.0	2.0	6.0		į		i	İ	SB-11	SB-11	SB-12	SB-12	SB-12
								9.5	12.0	6.0	9.5	14.0	2.0	9.0	2.0	8.0	9.5
	Dai	e Sampled:	1/1/1/91	1/1//91	[7/17/91	7/16/91	7/16/91	7/16/91	7/16/91	7/16/91	7/16/91	7/16/91	7/17/91	7/17/91	7/16/91	7/16/91	7/16/91
TEST	Da	te Injected:	7/31/91	7/31/91	7/31/91	7/24/91	7/24/91	7/24/91	7/24/91	7/24/91	7/24/91	7/24/91	7/31/91	7/31/91	7/24/01	7/24/01	7/25/01
METHOD	FUEL RANGE	MDL												7751751	1124171	1124191	7123191
,	Gasoline [C5-C12]	1 mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NID	NE
	Jet Fuel [C10-C16]	3 mg/kg	ND	ND	ND	ND	ND	ND	ND	344	ND	ND	***********	***************************************		ND	ND
	Diesel [C9-C22]	1 mg/kg	24	2,110	310	ND	ND	ND	ND	******************		******************	ND	ND	ND	ND	ND
]	Hydraulic	5 mg/kg	98			1111	1312	171	עא	ND	ND	77	120	ND	ND	ND	ND
	Da	te Injected:		7/20/01	7/21/01		_	-	-	-	-	-	23			-	-
9020			1/31/91	7/30/91	7/31/91	7/22/91	7/22/91	7/22/91	7/22/91	7/22/91	7/23/91	7/23/91	7/31/91	7/31/91	7/23/91	7/23/91	7/23/91
8020	AROMATIC COMP		[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]			[Dil=50]	- 1	[Dil=5]	[Dil=5]
	Benzene	2.5 μg/kg	ND	5	40	10	ND	ND	25	ND	23	ND	ND	ND	ND	ND	ND
]	Toluene	2.5 μg/kg	ND	ND	10	ND	ND	ND	ND	ND	ND	ND	ND	ND		*************	ND.
	Ethylbenzene	2.5 μg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND		*********	*************	4	ND	3
1		2.5 μg/kg	65	ND	ND	ND	ND	ND	ND ND	ND		ND	ND	ND	ND	ND_	ND
						-110	110	1410	ואט	עא	ND	ND	ND	ND	ND	_ ND	ND

- 1. Laboratory analyses by Thermo Analytical Inc. (TMA/Norcal) of Richmond, California.
- 2. Complete Laboratory reports presented in Appendix E.

TABLE 7b (Cont.)

SOIL SAMPLES ANALYSES SUMMARY

Unloading Dock Area

958 - 28th Street Oakland, California

	Samp	le Location	SB-12	SB-13	SB-13	SB-13	SB-14	SB-14	SB-14	SB-15	SB-15	SB-16	SB-16	SB-17	SB-17	SB-17	7027183351A 70797117
	Sample	Depth (ft)	14.0	2.0	7.0	9.0	2.0	7.0	11.0	4.0	8.5	9.0	11.0	3.5	5.0	10.5	Max.
	Dat	e Sampled:	7/16/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	7/17/91	Value
TEST	Da	te Injected:	7/25/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	Detected
METHOD	FUEL RANGE	MDL															
8015M	Gasoline [C5-C12]	1 mg/kg	ND	ND	ND	ND	ND	ND	ND	ND							
	Jet Fuel [C10-C16]	3 mg/kg	ND	ND	ND	ND	ND	ND	ND	344							
	Diesel [C9-C22]	1 mg/kg	ND	ND	ND	ND	#20		ND	2110							
	Hydraulic	5 mg/kg	-	-	-	-	-	-	-	-	-	-	-	450,	\$200	-	500
	Da	te Injected:	7/23/91	7/30/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	7/31/91	
8020	AROMATIC COMI	POUNDS	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dil=5]	[Dif=5]	[Dil=5]	[Dil=50]	[Dil=50]	[Dil=50]	
	Benzene	2.5 μg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	40
	Toluene	2.5 μg/kg	40%	ND	ND	ND	ND	ND	ND	45 2	520 5-	*33 T	700	1000	<i>8</i> 60°	2402	330
	Ethylbenzene	2.5 μg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Xylenes	2.5 μg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ИD	410	ND	450	380	ND	450

NOTES:

1. Laboratory analyses by Thermo Analytical Inc. (TMA/Norcal) of Richmond, California.

2. Complete Laboratory reports presented in Appendix E.

Laborato Complet

TABLE 8

MONITORING WELLS ANALYSES SUMMARY ADDITIONAL SUBSURFACE INVESTIGATION

958 - 28th Street Oakland, California

		ıd Water Well		MW-A2	MW-A3	MW-4A	MW-5	MW-6	MW-7	Max.	Blind
	1	Date Sampled:	7/18/91	7/18/91	7/18/91	7/19/91	7/18/91	7/18/91	7/19/91	Value	7/19/91
METHOD		Date Injected:	8/1/91	8/1/91	8/1/91	8/1/91	8/1/91	8/1/91	8/1/91	Detected	8/1/91
8015M	FUEL RANGE	MDL				·					0/1///
[5030]	Gasoline [C5-C12]		ND	ND	ND	2,60	ND	0.30	ND	2.60	2.50
	Jet Fuel [C10-C16]	0.05 mg/L	ND	ND							
[3520]	Diesel [C9-C22]	0.05 mg/L	ND	מא	ND						
8020	AROMATIC COM	Date Injected: IPOUNDS	7/30/91	7/30/91	7/30/91	7/30/91	7/30/91	7/30/91	7/30/91		7/30/91
[5030]	Benzene	0.5 μg/L	ND	28.	ND	68	ND	42	ND	68	98
"	Toluene	0.5 μg/L	ND	ND	ND	3	ND	1	ND	9	70
11	Ethylbenzene	0.5 μg/L	ND	ND	ND	8	ND	3	ND	8	
ļ!	Xylenes	0.5 μg/L	ND	ND	ND	31	ND	9	ND	31	<u>11</u> 47

- 1. Laboratory Analyses by Thermo Analytical Inc. (TMA/Norcal) of Richmond, California.
- 2. All ground water monitoring wells were sampled after purging at least 3 well caseing volumes of water from each well and physical properties had stabilized, in area of former fuel oil tank area.
- 3. All sample analyses were performed on undiluted samples, i.e. dilution=1.00.
- 4. Blind sample was a duplicate of well MW-4A.
- 5. Complete laboratory analyses report contained in Appendix F.

TABLE 9

MONITORING WELLS ANALYSES SUMMARY

958 - 28th Street Oakland, California

		Ground \	Nater Well	MW-A1	MW-A1	MW-A1	MW-A2	MW-A2	MW-A2	MW-A3	MW-A3	MW-A3
METHOD		Date	e Sampled:	Mar-90	Nov-90	7/18/91	Mar-90	Nov-90	7/18/91	Mar-90	Nov-90	7/18/91
8015M	FUEL RANGE	MDL	MCL		indication.				Section of the sectio			
[5030]	Gasoline [C5-C12]	50 μg/L	NA	169EE06	ND	ND	1.1E+06	719.	ND	ND	ND	ND
	Jet Fuel [C10-C16]	50 μg/L	NA	-	-	ND	-	*	ND	-	-	ND
[3510]	Diesel [C9-C22]	50 μg/L	NA	ND	-	ND	ND	-	ND	ND		ND
8020	AROMATIC COM	IPOUNDS		o inigental	#50]3:W01]	, kis Aleksania	SWA ANGELS	Marka Éstab			23.00 (\$0.00 XX	
[5030]	Benzene	0.5 μg/L	1 μg/L	3 50	\$7.7 2	ND	35)	32 5	282	ND	ND	ND
и	Toluene	0.5 μg/L	NA	ND	ND	ND	254	2 274;	ND	ND	ND	ND
"	Ethylbenzene	0.5 μg/L	680 μg/L		ND	ND	ND	ND	ND	ND	ND	ND
"	Xylenes	0.5 μg/L	1750 μg/L	243	3 5 .3	ND	18 297	<i>1</i> 3.4	ND	ND	ND	ND

		Ground V	Vater Well	MW-4	MW-4A	MW-5	MW-5	MW-5	MW-6	MW-6	MW-6	MW-7
METHOD		Date	Sampled:	Nov-90	7/19/91	Mar-90	Nov-90	7/18/91	Mar-90	Nov-90	7/18/91	7/19/91
8015M	FUEL RANGE	MDL	MCL	nidiki);		(0.800)
[5030]	Gasoline [C5-C12]	50 μg/L	NA	NA	2260*	ND	ND	ND	ND	370	<u> </u>	ND
	Jet Fuel [C10-C16]	50 μg/L	NA	NA	ND	-	-	ND	~	-	ND	ND
[3510]	Diesel [C9-C22]	50 μg/L	NA	NA	ND	ND	-	ND	ND	-	ND	ND
8020	AROMATIC COM	1POUNDS			ar i ara an Air ii athiridii		ytekseläsiiks.		32,334,60	(\$1866.78 \$167.75); -		
[5030]	Benzene	0.5 μg/L	1 μg/L	NA	268₹	ND	ND	ND	ND	<i>∞8-</i> 9->	42	ND
"	Toluene	$0.5 \mu g/L$	NA	NA	13/	ND	ND	ND	ND	ND	1.	ND
n	Ethylbenzene	0.5 μg/L	680 μg/L	NA	18	ND	ND	ND	ND	ND	3.	ND
"				NA	.3 <u>1</u> .	ND	ND	ND	ND	1.8	20 0	ND

- 1. Laboratory Analyses by Thermo Analytical Inc. (TMA/Norcal) of Richmond, California.
- 2. All ground water monitoring wells were sampled after purging at least 3 well caseing volumes of water from each well and physical properties had stabilized. in area of former fuel oil tank area.
- 3. All sample analyses, excepting MW-4 on March 1990, were performed on undiluted samples. Dilution for MW-4 was 5 x.
- 4. Quality Control testing not included.
- 5. Post-November 1990 sampling excluded MW-4, which contained free product and subsequent abandonment.

BOKING LOGS

PROJECT NAME				LC	OG O	F TES	BORING	BORING NO.	MW-4A
PROJECT NAME	1	IVI							
LOCATION			PROJEC	CT NAI	ME		ARATEX		
CONTRACTOR W. HAZMAT SURFACE ELEV. 24.3 6.1N.					_				12012110
DRILLING METHOD				_					24.3
NSUAL CLASSIFICATION No. TYPE N	<u> </u>		DRILLIN	IG ME	THOD				
NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH AND GENERAL OBSERVATIONS NO. TYPE N % DEPTH N % DEPTH NO. TYPE N % N & TYPE N & N &			SAMPLING	NOT	ES				
1 SS 8/11/11 100 M SILT (ML) dark gray OVM = 0 CLAY (CL), brownish yellow, trace gravel, stiff OVM = 0	INT	ERVAL	RECO	VERY	MOIS	TURE			1
SILT (ML) dark gray OVM = 0 CLAY (CL), dark gray, some silt, stiff 5	NO.	TYPE	N	%		DEPTH	AND G	SENERAL OBSERVAT	IONS
2 SS 12/21/26 66 5 SANDY CLAY (CL), brownish yellow, trace gravel, stiff OVM = 0 CLAY (CL), brownish yellow, trace gravel, stiff OVM = 0 brownish yellow, trace gravel, stiff OVM = 0 brownish yellow, trace gravel, stiff OVM = 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, stiff OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, stiff OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, sub angular, some clay ovM = > 2,000 SAND (SW), stained olive gray, trace gravel, stiff OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, stiff OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, stiff OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, stiff OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, stiff OVM = > 2,000 SAND (SW), stained olive gray, trace gravel, stained olive gray, trace gravel, stained olive gray, trace gravel, stained olive gr							↑ 3" asphalt		
2 SS 12/21/26 66 5 SANDY CLAY (CL), brownish yellow, trace gravel, stiff OVM = 0 brownish yellow, trace gravel, stiff OVM = > 2,000 stained olive gray, trace gravel, sub angular, some clay OVM = > 2,000 SANDY GRAVEL (GW), some clay, brownish yellow ovM = 7 SS 17/10/10 33 V.W SS 13/24/34 100 V.M SS 13/24/34 100 V.M SS 13/24/34 100 V.M SS 12/14/21 33 WET SS 12/14/21 33 WET SS 14/17/22 33 V.W SS 14/17/22 33 V.W GENERAL NOTES DATE STARTED 16 JUL 91 DATE COMPLETED 16 JUL 91 DATE COMPLETED 16 JUL 91 DATE COMPLETED 16 JUL 91 RIG CME 75 CLAY (CL), dravk gray, some slit, stiff SANDY CLAY (CL), brownish yellow, trace gravel, sub angular, some clay, ovm = 3 sand, brownish yellow, trace gravel, sub angular, some clay, ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow ovm = 10 clay (CL), brownish yellow, trace gravel, stiff ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 10 clay (CL), brownish yellow, trace gravel, sub angular, some clay (DVM = 2 clay (CL), brownish yellow, trace gravel, sub angular, some clay (DVM = 2 clay (CL), brownish yellow, trace gravel, sub angular, some clay (DVM = 2	1	SS	8/11/11	100	М	-			
2 SS 12/21/26 66 5 SANDY CLAY (CL), brownish yellow, trace gravel, stiff OVM = 0 3 SS 16/24/36 100 M 5 brownish yellow, trace gravel stained olive gray ovm = 0 stained olive gray ovm = 0 stained olive gray ovm = 2,000 5 SS 16/21/24 100 V.M 5 SANDY GRAVEL (GW), stained olive gray, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), stained olive gray, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), stained olive gray, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), stained olive gray, trace gravel, sub angular, some clay ovm = 0 ovm = 2,000 SANDY GRAVEL (GW), stained olive gray, trace gravel, sub angular, some clay ovm = 0 ovm = 2,000 SANDY GRAVEL (GW), stained olive gray, trace gravel, sub angular, some clay ovm = 0 ovm = 2,000 SANDY GRAVEL (GW), stained olive gray, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), stained olive gray, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow, poorly graded ovm = 2,000 CLAY (CL), brownish yellow, trace gravel, sub angular, some clay ovm = 2,000 SANDY GRAVEL (GW), some clay, brownish yellow, poorly graded ovm = 2,000 CLAY (CL), brownish yellow, very stiff, pockets of silt ovm = 3,000 SANDY GLAY (CL), pockets of silt, yellow, stiff ovm = 2,000 SANDY GLAY (CL), pockets of silt, yellow, stiff ovm = 2,000 SANDY CLAY (CL), pockets of silt, yellow, stiff ovm = 2,000 SANDY CLAY (CL), pockets of silt, yellow, stiff ovm = 2,000 SANDY CLAY (CL), pockets of silt, yellow, stiff ovm = 2,000 SANDY CLAY (CL), pockets of silt, yellow, stiff ovm = 2,000 SANDY CLAY (CL),			-			-	77		
OVM = 0 16/24/36 100 M						-	CLAY (CL), dark gra	y, some silt, stiff	
OVM = 0 16/24/36 100 M			7						
OVM = 0 16/24/36 100 M	2	ss	12/21/26	66		5	SANDY CLAY (CL)	brownish vellow trace	e gravel stiff
4 SS 9/27/32 100 M John Sand Sand Sand Sand Sand Sand Sand San		l t	1					a. o. m.o.r. y oo.r., m.d.o.	g.u.o., o.m
4 SS 9/27/32 100 M John Sand Sand Sand Sand Sand Sand Sand San	3	ss	16/24/36	100	м		brownish vellow, tra	ce gravel	
SAND (SW), stained olive gray, trace gravel, sub angular, some clay (OVM = > 2,000 SANDY GRAVEL (GW), some clay, brownish yellow (OVM = 71 CLAYEY SAND (SC), fine sand, brownish yellow, trace gravel 7 SS 7/10/10 33 V.W 8 SS 13/24/34 100 V.M 9 SS 12/14/21 33 WET 10 SS 9/12/14 100 M 11 SS 9/12/14 100 M 12 SS 14/17/22 33 V.W 13 SANDY (SW), stained olive gray, trace gravel, sub angular, some clay (OVM = > 2,000 SANDY GRAVEL (GW), some clay, brownish yellow (OVM = 71 CLAYEY SAND (SC), fine sand, brownish yellow, poorly graded CLAY (CL), brownish yellow, stiff OVM = 0 CLAY (CL), brownish yellow, very stiff, pockets of silt OVM = 44 CLAY (CL), pockets of silt, yellowish red, very stiff OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 1 CLAY (CL), yellowish red, loose (STRED GOV) (STR		}	1				stained olive gray	3·4·-	
SS 16/21/24 100 V.M Some clay OVM = > 2,000	4	SS	9/27/32	100	М	-	OVM = > 2,000		
SS 16/21/24 100 V.M			-			10-	SAND (SW), stained	olive gray, trace grav	el, sub angular,
SANDY GRAVEL (GW), some clay, brownish yellow OVM = 71 CLAYEY SAND (SC), fine sand, brownish yellow, trace gravel 7	5	90	16/21/24	100	37 M	-			
6 SS 8/14/16 100 WET	3		10/21/24	100	V.IVI	_			
7 SS 7/10/10 33 V.W 15	ٔ ج	cc	0/14/10	100	MICH	돌 - 		W) , some clay, brown	ish yellow
7 SS 7/10/10 33 V.W 15	O		0/14/10	100	AACI	_	· \	fine sand brownish	vellow trace
SS	_]			15		, into bario, brownion	yonow, trace
8 SS 13/24/34 100 V.M OV.M		88	7/10/10	33	V.W	_	/ /		
9 SS 12/14/21 33 WET 10 SS 9/12/14 100 M 11 SS 7/10/12 33 V.W 12 SS 14/17/22 33 V.W GENERAL NOTES DATE STARTED 16 JUL 91 DATE COMPLETED 16 JUL 91 RIG CME 75 OVM = 0 CLAY (CL), brownish yellow, very stiff, pockets of silt OVM = 0 CLAY (CL), pockets of silt, yellowish red, very stiff OVM = 0 OVM = 0 OVM = 0 WATER LEVEL OBSERVATIONS WHILE DRILLING □ 13.0 AFTER DRILLING □ 13.0 AFTER DRILLING			}				//		ooorly graded
9 SS 12/14/21 33 WET 20 CLAY (CL), brownish yellow, very stiff, pockets of silt OVM = 318 SILTY CLAY (CL-ML), yellowish red, very stiff OVM = 44 CLAY (CL), pockets of silt, yellowish red, stiff, plastic OVM = 3 SANDY CLAY (CL), yellowish red, loose STRED GOVM = 0 OVM = 0 OVM = 0 OVM = 0 WATER LEVEL OBSERVATIONS DATE STARTED 16 JUL 91 DATE COMPLETED 16 JUL 91 AT COMPLETION AFTER DRILLING AT COMPLETION AFTER DRILLING	8	SS	13/24/34	100	V.M			n yellow, stiff	
10 SS 9/12/14 100 M 20 OVM = 318 SILTY CLAY (CL-ML), yellowish red, very stiff OVM = 44 CLAY (CL), pockets of silt, yellowish red, stiff, plastic OVM = 3 SANDY CLAY (CL), yellowish red, loose STERED GFO OVM = 0 OVM = 0 OVM = 0 12 SS 14/17/22 33 V.W 25 OVM = 0 OVM = 0 GENERAL NOTES WATER LEVEL OBSERVATIONS OVM = 0		<u> </u>	}				//	a vollous yons atiff noo	alenta of ailt
10 SS 9/12/14 100 M OVM = 44 CLAY (CL), pockets of silt, yellowish red, very stiff OVM = 44 CLAY (CL), pockets of silt, yellowish red, stiff, plastic OVM = 3 SANDY CLAY (CL), yellowish red, loose STEED GEO OVM = 0 OVM = 0 OVM = 0 12 SS 14/17/22 33 V.W 25 OVM = 0 OVM = 0 CAY (CL), pockets of silt, yellowish red, loose STEED GEO OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 0 OVM = 1 OVM = 0 OVM = 1 OVM = 0	9	SS	12/14/21	33	WET	20.	OVM = 318	i yellow, very still, poc	CKERS OF SIR
10 SS 9/12/14 100 M OVM = 44 CLAY (CL), pockets of silt, yellowish red, stiff, plastic OVM = 3 SANDY CLAY (CL), yellowish red, loose STERED GFOLOWM = 0 OVM = 0 OVM = 0 OVM =			}			20—	/'XI \), vellowish red, very s	stiff
OVM = 3 SANDY CLAY (CL), yellowish red, loose STERED GFO OVM = 0 OVM =	10	SS	9/12/14	100	М				
SANDY CLAY (CL), yellowish red, loose STERED GFO OVM = 0 OVM = 0 OVM = 0 OVM = 0 WATER LEVEL OBSERVATIONS DATE STARTED 16 JUL 91 DATE COMPLETED 16 JUL 91 RIG		F		i	İ	1		of silt, yellowish red, s	tiff, plastic
GENERAL NOTES DATE STARTED 16 JUL 91 DATE COMPLETED 16 JUL 91 AT COMPLETION AFTER DRILLING AFTER DRILLING AFTER DRILLING	11	SS	7/10/12	33	V.W		OVM = 3		TERED GFO
GENERAL NOTES DATE STARTED 16 JUL 91 DATE COMPLETED 16 JUL 91 AT COMPLETION AFTER DRILLING AT COMPLETION AFTER DRILLING		H		Ì			SANDY CLAY (CL), y	vellowish red, loose	2
GENERAL NOTES DATE STARTED 16 JUL 91 DATE COMPLETED 16 JUL 91 AT COMPLETION AFTER DRILLING AFTER DRILLING AFTER DRILLING	12	SS	14/17/22	33	V.W	25	OVM = 0	[\Z'\]	15/3/ A
GENERAL NOTES DATE STARTED 16 JUL 91 DATE COMPLETED 16 JUL 91 AT COMPLETION AFTER DRILLING AT COMPLETION AFTER DRILLING		1		l		_	<u>// </u>		S \ \ \
DATE STARTED 16 JUL 91 WHILE DRILLING \(\begin{array}{c c c c c c c c c c c c c c c c c c c						-		(*)	110. 4420
DATE STARTED 16 JUL 91 WHILE DRILLING \(\begin{array}{c c c c c c c c c c c c c c c c c c c		-		l		ㅓ		\\ <u>\</u> \\	/ _~ /
DATE STARTED 16 JUL 91 WHILE DRILLING \(\begin{array}{c c c c c c c c c c c c c c c c c c c						-		(4)	
DATE STARTED 16 JUL 91 WHILE DRILLING \(\begin{array}{c c c c c c c c c c c c c c c c c c c			CENEDA	I NO	TEO			MATER LEVEL ORGE	OF CALIFO
RIG AFTER DRILLING	חאדם	QTAD#				04	į	WATER LEVEL ODGE	NVATIONS
RIG AFTER DRILLING								<u></u> <u>1</u>	
							- !	₹	
OCE IN CONTRACTOR OCE IN							· ·	₽ ₽₽₽	1
LOGGED M.K. CHECKED CZZ WATER: DATE/TIME DEPTH									

		TT .	L	OG (OF TEST	BORING	BORING NO.	CD E
					F-203 (R 01	-87)	SHEET NO1	
		PROJE	CT NA	ME		ARATEX	PROJECT NO.	
		LOCAT			0/	AKLAND	INSTALLATION	
		CONTR				V. HAZMAT	SURFACE ELEV.	24.2
		DRILLIN	IG ME	THOD	HOL	LOW STEM AUGER	BOREHOLE DIA.	6 IN.
		SAMPLING	G NO	ES				
	ERVAL	,	VER	MOIS	STURE		ISUAL CLASSIFICATIO	
NO.	TYPE	N	%		DEPTH	AND	GENERAL OBSERVAT	TONS
						3" asphalt		
						6" base		
1	SS	17/21/22	100			SILT (ML), dark gra	y, debris, brick (fill)	
					-	CLAY (CL) broupie	h vollou tropo fin a mu	
	1	-				very stiff	sh yellow, trace fine gra	avei, trace sand,
		1	-		-	OVM = 5		
ļ								
		-				01 1/5/ 011/5 (0.0		
ļ				ļ	1 !:	brown), trace medium to coa	ise gravel, reddish
		10/01/0	400		5	OVM = 34		
2	SS	12/21/2	100					}
						4		
						7		
3	SS	27/27/1	100			stained olive gray		
					±	GRAVEL (GP), coars	se sand, stained olive	gray
	1 [OVM = > 2,000		
4	SS	12/21	100		1	SILTY SAND (SM), to	race gravel, olive gray	
					 	OVM = > 2,000	J . J.	
						[] []		
5	ss	12/23/38	100	F.P	10	SAND (SW) trace of	oarse sand, trace silt, s	toined alive area
		, , , , , , ,		,		free product	oarse sand, hace siil, s	stained onve gray,
	l H							
						j		·
		04040			- 22	<u> </u>		
6	SS	6/10/10	66	WET		SANDY CLAY (CL), I	prownish yellow, track	red sand trace
						OVM = 230	(3)512	LIE OC
					¥	200	A S N	E 3
7	SS	6/9/15	33	WET			1/2 N	2 1400
ŀ						OVM = 269	X O N	0. 4426 🕏
	[]	•	ļ				\v_\	/_ /
		GENERA	I NO	TES		4	WATER LEVEL OBSE	ALLAZINA BOLL
DATE	STARTI				04	į.		CALIFOR
				5 JUL 15 JI		WHILE DRILLING	<u></u>	
DATE COMPLETED15 JUL 91 RIG CME 75						AT COMPLETION AFTER DRILLING	¥	
					LO		DEPTH	
LOGO	SED	M.K. (CHEC	KFD	111	UATED DATE / TIME		

APPENDIX E

	S.A.	T	LO			BORING		SB-6
Æ	IVI	<u>I</u> .			-203 (R 01		SHEET NO1_OF	
		PROJEC		ΛE _		ARATEX	PROJECT NO. 12	012.10
		LOCATIO				AKLAND	INSTALLATION SURFACE ELEV	24.2
		CONTRA				W. HAZMAT DLLOW STEM AUGER	BOREHOLE DIA.	6 IN.
		DRILLING				LLOW STEW AUGEN	BOTTET TOTE DIVE	<u> </u>
		SAMPLING			ruos	VI	SUAL CLASSIFICATION	
	ERVAL			MOIST		AND (SENERAL OBSERVATIONS	3
NO.	TYPE	N	%		DEPTH			
1	SS	13/8/9	100	М		3" asphalt SILT (ML), dark gray		and groups
2	SS	13/14/26	100	М	5	CLAY (CL), brownis OVM = 0	h yellow, trace fine sand ar	nd gravel
3	SS	15/18/22	66	M	_	SANDY CLAY (CL), OVM = 0	brownish yellow, trace gra	vel
4	SS	15/36/334	100	M		OVM = 0		į
5	ss	15/22/30	66	WET	10	SILTY SAND (SM),	brownish yellow, trace grav	vel
6	SS	18/24/20	100	WET	_ 	SANDY CLAY (CL),	trace gravel, brownish yell	
					15		No. 4426	(x)
		GENER	AL NO	DTES			WATER LEVEL OBSERVA	
DAT	E STAR	red		15 JUI	_91	WHILE DRILLING	<u> </u>	
		PLETED			UL 91	AT COMPLETION	¥	
		(AFTER DRILLING		
		:F				 1	DEPTH	
LOG	GED	M.K.	CHE	CKED	CZ	∠ WATER: DATE/TIME	DEPTH	

R	17	7	LC			BORING	BORING NO.	SB-17
.F		<u>. </u>			F-203 (R 0°		SHEET NO. 1	
				_			PROJECT NO.	12012.10
		LOCATIO	_			AKLAND W. HAZMAT	INSTALLATION _ SURFACE ELEV.	22.3
		DRILLIN				LLOW STEM AUGER		6 IN.
		SAMPLING				LLOIT OTHER ADDRESS		
INTE	RVAL			MOIS	TURE		SUAL CLASSIFICATIO	
NO.	TYPE	N	%		DEPTH	AND G	SENERAL OBSERVATI	ONS
1	SS	12/21/22	100	М	-	3" asphalt 9" base SiLT (ML), dark gray CLAY (CL), dark gra		
2	SS	9/11/12	100	М	_	OVM = > 2,000 stained OVM = 56		
3	SS	24/32/35	100	М	5	CLAYEY SANDY GR	RAVEL (GW), stained o	live gray,
4	SS	20/22/25	100	M	_	OVM = 44		i e
5	SS	25/18/15	100	M	_			
6	SS	15/21/25	100	M	10	CLAY (CH), olive bro	own, stiff	
7	SS	18/20/25	100	М		SANDY CLAY (CL), s yellow, very stiff OVM = 56 OVM = 4.7	some fine sand, trace	OED CEO
					15—		(*CAZ	No. 4426 SO
		GENERA	AL NO	TES			WATER LEVEL OBSE	RVATIONS
DATE	START	ED	1	8 JUL	91	WHILE DRILLING		3.0
		_ETED _				AT COMPLETION	₩	
		<u>C</u>				AFTER DRILLING		į
		M K				-	DEPTH	
		M.K	CHEC	VED	(roist	WAIER: DATE/TIME	DEPTH	

R			L	OG C	F TEST	BORING	BORING NO	SB-8
- 4					F-203 (R 01	1-87)	SHEET NO. 1	
		PROJE		ME .	 , <u>-</u> -	ARATEX	PROJECT NO.	
		LOCAT				AKLAND	INSTALLATION _	
		CONTR				W. HAZMAT	SURFACE ELEV.	22.5
		DRILLI			<u>HO</u>	LLOW STEM AUGER	BOREHOLE DIA.	6 IN
13.100	<u>.</u>	SAMPLIN		.,		V	ISUAL CLASSIFICATIO	M
	ERVAL		7	MOIS			GENERAL OBSERVATI	· · · · · · · · · · · · · · · · · · ·
NO.	TYPE	N	%		DEPTH	AIL	CENTIAL ODOLIVAN	ONS
						3" asphalt		
						9" base		
						BRICK		
		7				SILT (ML), dark gra	y	
1	ss	6/7/10	100	М			-	
					1 -	CLAY (CL), dark gra	ay , stained, trace grave	ıl,
				Ì		OVM = 566		
		-				CLAVEY SANDY OF	RAVEL (GW), stained of	h., bl.,
						OVM = > 2,000	TAYEL (GVV), Stained Of	ive pide
2	SS	6/10/12	100	м	5	· 중 장		
-		0/10/12	100	IVI		. 역· 제· 제·		
						毒气 		
1	1							}
İ						「● ● ○		
3	SS	14/23/28	100	F.P.	- [free product OV	M = > 2,000	
1	ľ				<u> </u>	· 中 •		
4	SS	12/23/22	100	F.P.		SANDY CLAY (CL)	some gravel, stained, fr	oo product
	Ĥ	,,			-2	OVM = < 2,000	some graver, stameu, m	ee broadcr
	[]							
5	SS	10/11/15	100		10	OVM = < 2,000		
١ ،	33	10/11/15	100	М		CLAY (CL), olive bro	wn, trace gravel	
]					OVM = 6.7	,	
							FOEL	CCO
İ							STERLE	GEOLOGIS
6	SS	12/15/20	100	М	7	trace sand and silt	CATHE NO.	(16/2/6/)
	1					OVM = 6.7	1,14	5/7/
1	Н	l	1		_ +		MO.	4426 5
ļ	H				Ā \f	4		/ 1
	Н						102	12/2
							STATE OF C	ALLEON
				1				
.		GENERA					WATER LEVEL OBSER	
		ED				WHILE DRILLING	13.	5
DATE COMPLETED 17 JUL 91						AT COMPLETION	<u>¥</u>	
RIG CME 75 CREW CHIEF T. JARAMILLO						AFTER DRILLING		
CHEW	CHIEF		T. JAF	RAMIL	_0	CAVE-IN: DATE/TIME	DEPTH	
LUGG	⊫U	M.K	CHEC	KED .	<u> </u>	WATER: DATE/TIME	DEPTH	

WATER: DATE/TIME ______ DEPTH _____

APPENUIX E

R	M	7	LC			BORING	BORING NO.	
" F					F-203 (R 0		SHEET NO. 1	
			_				PROJECT NO	12012.10
		LOCATI CONTR	_		<u>C</u>	W. HAZMAT	INSTALLATION	
		DRILLIN				LLOW STEM AUGER	SURFACE ELEV. BOREHOLE DIA.	22.1 6 IN.
		SAMPLING				LLOW OTEM ADDER	BONE TOLL DIA.	6 IN
INTE	ERVAL		VERY	,	TURF	VI	SUAL CLASSIFICATIO	N
NO.	TYPE	N	%	""	DEPTH	AND	GENERAL OBSERVATI	IONS
1	SS	10/10/11		М		3" base SILT (ML), dark gra CLAY (CL), dark gra OVM = > 2,000		
2	SS	7/13/24	100	М	5	SANDY SILTY CLAY OVM = < 2,000	Y (CL), trace gravel, sta	ined olive gray,
3	SS	12/14/21	100	М		SANDY GRAVEL (G OVM = 277	W), trace clay stained	olive gray
4	SS	4/6/10	100	М		CLAY (CL), olive bro	own, plastic	
5	SS	8/14/22	100	М	10	CLAY (CL), trace sai pockets of silt, OVM = 15	nd, brownish yellow, tra	ace gravel, D GEOLOGICALIST AA26
6	SS	12/21/26	100	М	¥ -	OVM = 650	1 /3	4426 \$ \$
		OFFICE						UALI.
DATE	START	GENERA ED			04	į.	WATER LEVEL OBSER	
		ETED	1		91 IL 91	_ WHILE DRILLING	¥13	5.0
			ME 75			_ AT COMPLETION _ AFTER DRILLING	=	
	/ CHIEF		<u>T. JAF</u>	_		<u> </u>	DEPTH	
		M.K.				WATER: DATE/TIME	•	

	1.4		LC	OG O	F TES	TBC	ORING	BORING NO.	SB-11			
7		I .			F-203 (R 0			SHEET NO. 1				
_			CT NA	ME _		AF	RATEX	PROJECT NO.				
		LOCATI			C		AND	INSTALLATION				
		CONTRA	ACTO	R		W. HA	AZMAT	SURFACE ELEV.	21.6			
		DRILLIN	G ME	THOD	HC) DLLO	W STEM AUGER	BOREHOLE DIA.	6 [N.			
		SAMPLING	NOT	ES				SUAL CLASSIFICATION	7A1			
	ERVAL		1	MOIS				GENERAL OBSERVAT				
NO.	TYPE	N	%	ļ	DEPTH	~~~						
			1		_		5" base					
1	SS	7/16/10	100	М		-	SILT (ML), dark gra		····			
		40/40/00	400			\mathbb{Z}	CLAY (CL), dark gra OVM = > 2,000	ay, trace silt				
2	SS	16/16/20	100	М	_	- 1	OVM = > 2,000 $OVM = 29$					
					5			NAN wallawidah wad aas				
3	SS	5/11/15	100	М		* <u>-</u>	OVM = 2.8	GW), yellowish red, so	те сіау			
					_	÷ ÷	O V IVI - 2.0					
		_			_		CLAY (CL), brownis	sh yellow				
4	ss	6/7/9	100	М	_		OVM = 11					
					OVM = 0							
5	SS	SS 9/12/15 100 M 10			OVM = 0							
1					SANDY CLAY (CL), trace silt, trace gravel							
6	SS	12/13/24	100	М	<u> </u>		OVM = 0					
		-			=							
7	ss	17/59	66	М	45	///-	CLAY (CL) brownis	sh yellow with yellowis	h red silt			
					15		OVM = 0	in jenom man jenomo	Trica one			
8	SS	29/50	66	М								
9	SS	24/50	66	М				rownish yellow , trace	gravel			
[-		OVM = 0		STERED GEOLOGIAL L. LIELA GOL			
10	ss	12/18/23	100	V.W.	20-		OVM = 10.7		No. 4426			
		1						P.E.	1. 1. 1. (A) (A)			
11	SS	6/17/24	100	V.W.			OVM = 29		S			
		1	i		-			*	S No. 4426 5 ★			
12	ss	12/17/23	100	V.W.			CLAY (CL), yellowis	sh red, some silt				
		1	:		25		OVM = 0	in rea, some silt	SWOF CALIFORNIA			
13	ss	10/12/15	100	v.w.			SANDY GRAVEL (G	W), poor, brownish ye	HOWOF CALLYON			
		1				*	OVM = 0		VIII			
	l t	1 [-	*	OVM = 0		ļ			
		<u> </u>] -	#	SAND (SP), mediun	n brownish vellow				
14	14 SS 7/8 33 WET 30				30	4 - H \		W), brownish yellow,				
						OVM = 0	itty, brownish yellow,					
	LL	GENER		TEC	<u>i</u>	<u> </u>		WATER LEVEL OBSE	PIVATIONS			
GENERAL NOTES DATE STARTED							W// III E DDU 1 13/0					
DATE COLIN ETCE					WHILE DRILLING	¥1	3.0					
		CELED	NAE 7		7F A1		AT COMPLETION					
					10		AFTER DRILLING	DEPTH				
CREW CHIEF T. JARAMILLO LOGGED M.K. CHECKED CLL							WATER: DATE/TIME					

P.			L	OG C	F TES	BORING	BORING NO	CD 10
					F-203 (R 0		SHEET NO1	
		PROJE	CT NA	ME		ARATEX	PROJECT NO.	
		LOCATI	ION .		C	AKLAND	INSTALLATION	
						W. HAZMAT	SURFACE ELEV.	22,2
		DRILLIN	IG ME	THOD	HO	LLOW STEM AUGER	BOREHOLE DIA.	6 IN.
		SAMPLING	3 NOT	ES			70111 OL 10017 DATE	
·	ERVAL	, 	VERY	MOIS	TURE		ISUAL CLASSIFICATIO	
NO.	TYPE	N	%		DEPTH	AND	GENERAL OBSERVAT	IONS
						SILT (ML), dark gra	ay	
1	SS	8/4/5	100	М	_			
'		0/4/3	100	IVI		CLAY (CL), dark gr OVM = 0	ay, trace of silt, stiff	
						OVM = U		
						//		
2	SS	4/8/9	100	М		brownish yellow		
		1	<u> </u>			SANDY CLAY (CL)	, trace gravel, brownish	vellow
					_	OVM = 0	, mare graver, are miles	, , 0,110,11,
					5			
	}	-]			
3	ss	21/34/46	100	М		SANDY GRAVEL (C	W), trace clay, yellowis	sh red
	[OVM = 0	arry, made chay, yenerin	Sir i Çu
	00	40 /77 /0	400	• •				
4	SS	12/7/9	100	М	-t	CLAY (CH), olive br	own, plastic	
						OVM = 86		
ļ]			10-			
_	00	404040				/		
5	SS	10/12/15	100	М			brownish yellow, trace	gravel
	H					OVM = > 2,000		
	<u> </u>]	ļ		∇			
6	SS	6/9/15	100	М	* 1	pockets of yellowish	red silt	O GEOLOGIA
	4				4	OVM = > 2,000	1000	TE TOO
					Ë			
- 1	<u> </u>				15		1 3 110	4222
							()	
1			ŀ				100	CALIFORNIA
					_		17/E OF	EORIN
1		}		-			Or	CALIFO
	H				4			
ŀ								
		GENERA	-014 1	re				
DAT⊏	OT 4 DT-	GENERA				i	WATER LEVEL OBSER	· · · · · · · · · · · · · · · · · · ·
	STARTE			6 JUL		_ WHILE DRILLING		.0
	COMPL	_	11F 7C		L 91	_ AT COMPLETION	<u></u>	
		CI	ME 75			_ AFTER DRILLING		
LOGG	ED.	M.K. (CHECI	<u>1AMILI</u> KED	<u>U</u>	_ CAVE-IN: DATE/TIME	DEPTH	

		T	LC	G O	F TEST	BORING	BORING NO. SB-13			
1		<u> </u>		F	-203 (R 0		SHEET NO1_ OF1_			
				ΛE _			PROJECT NO. 12012.10			
		LOCATIO				AKLAND	INSTALLATION			
		CONTRA				W. HAZMAT	SURFACE ELEV. 21.0 BOREHOLE DIA. 6 IN.			
					<u>HC</u>	LLOW STEM AUGER	BONEHOLL DIA. 0 114.			
		SAMPLING				VI	SUAL CLASSIFICATION			
	ERVAL	RECO\		MOIS	DEPTH	AND	GENERAL OBSERVATIONS			
NO.	TYPE	N	%		DEFIR					
						SILT (ML), dark gra	y			
1	ss	3/6/7	100	М	_	CLAY (CL), dark gra	ay, trace silt, stiff			
		-				OVM = 0				
		-								
2	ss	6/11/16	100	М	-	r / 1	AND (CL), fine sand, brownish yellow,			
1]		\	-	dense				
		-				OVM = 0				
3	SS	14/22/5	100	М	5	SANDY GRAVEL (C	W), yellowish red trace clay			
-						OVM = 4.7				
						· 4·				
4	SS	9/7/6	100	М	_	CLAY (CH), olive but	rown stiff			
*		3,170		.*.		CLAT (CIT), ONVE DI	Offin, Sun			
					_	Y /				
5	SS	11/16/18	100	M	-	SANDY CLAY (CL)	brownish yellow, trace gravel, stiff			
						OVM = 19	Common Jones of made States, com			
6	SS	12/13/12	66	М	10					
					-	neakota af ailt				
		H				pockets of silt OVM = 2				
7	SS	6/13/28	100	М	~					
					= -	SILTY CLAY (CL)	nterbedded red silt, stiff			
		H				OVM = 0				
		 			-		STERED GEOLOGICAL L. LIELAUGICA			
			[15	1	STERED GEOLOGICAL STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GEOLOGICA STERED GE			
					13		No. 4426 X			
		H			-	-	★(S No. 4426 5)★)			
							\^\ / /			
		П					\s\ \s\ \s\ \s\ \s\ \s\ \s\ \s\ \s\ \s\			
		Ц			-		OF CALIFORNIA			
			-				OF CALL			
		H			_	1				
L	<u> </u>	1					WATER LEVEL ORGERVATIONS			
ļ		GENER	AL NO	OTES			WATER LEVEL OBSERVATIONS			
1	E STAR			17 JUI		WHILE DRILLING	<u>¥</u> 12,5			
		PLETED					¥			
L.						AFTER DRILLING	PERTU			
		EF					IME DEPTH			
LOG	:GED	M.K.	CHE	CKED	121	WATER: DATE/TIME	DEPTH			

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LOG OF TEST B							ORING	BORING NO.	CD 44
F-203 (R 01-8								SHEET NO.	
						_ A	RATEX	_ PROJECT NO	
					AND	_ INSTALLATION	12012,10		
						W. F	HAZMAT	_ SURFACE ELEV.	20.8
						<u>)LLC</u>	W STEM AUGER	BOREHOLE DIA.	6 IN.
		SAMPLING	G NOT	ES					
INTERVAL RECOVERY MOISTURE					TURE			VISUAL CLASSIFICAT	
NO.	TYPE	N	%		DEPTH		ANL	GENERAL OBSERVA	ATIONS
							SILT (ML), dark gr	ay	
1	ss	8/9/9	100	М				······································	
·		0/3/3	100				SILTY CLAY (CL),	dark gray, trace grave	el
]					¬ OVM = 0		
2	ss	44/44/40	100				\	SAND (CL), sand, bro	yunlah vallaya linta
2	33	14/14/16	100	М			gravel	SAME (OL), SANG, DIC	ownish yellow, little
		1				· 争, · · · · · · · · · · · · · · · · · · ·		GW), yellowish red, tra	ace clav
					_	4	OVM = 0	,, ,	,
3	SS	32/50	100	М	3	*	OVM = 0		
						# # # # # # # # # # # # # # # # # # #	OVIVI = U		
		-							
4	SS	6/7/9	100				CLAY (CH), o;ive b	rown stiff	
							OVM = 0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
5	SS	6/14/25	100						
		0/11/20	,00		-		\OVM = 0		
					10		SANDY CLAY (CL)	, brownish yellow, trac	ce gravel, stiff
6	SS	7/13/21	100	М] 10		OVM = 0		}
ĺ	H				— [·				ĺ
						4.			
7	SS	4/11/17	100	М	Z Z		SANDY CLAY (CL)	, yellowish red, pocket	ts of silt, loose
ļ	H								ts of silt, loose ED GEOLOG No. 4426
	H							STER	No. 4426
	[7]				-			[3] A	r. 2165 45 (57)
	Ц				15—			14/2	1 (2)
								* 3	No. 4426
	Н				\dashv			1 1	/4/
1	- 11							\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	OF CALIFORNIA
	П	ļ			-			NE.	OF CALIFO
1	H		1	1	_				
			-						
	H				\dashv				
GENERAL NOTES								WATER LEVEL OBSE	ERVATIONS
DATE STARTED 17 JUL 91							WHILE DRILLING	¥	12.5
DATE COMPLETED 17 JUL 91							AT COMPLETION	<u> </u>	
RIG CME 75							AFTER DRILLING		
CREW CHIEF T. JARAMILLO								DEPTH	
000000							WATER: DATE/TIME	DEPTH	

APPENDIA E

1	

LOG OF TEST BO F-203 (R 01-87)							BORING NO. SB-15
.Æ	771				-203 (R 01		SHEET NO1_ OF1
	PROJECT NAME					ARATEX	PROJECT NO. <u>12012.10</u>
LOCATION							INSTALLATION
CONTRACTOR						W, HAZMAT	SURFACE ELEV. 22.1
						LLOW STEM AUGER	BOREHOLE DIA. 6 IN.
		SAMPLING				VIS	BUAL CLASSIFICATION
INTERVAL RECOVERY MOISTU				AND G	SENERAL OBSERVATIONS		
NO.	TYPE	N	%		DEPTH		
1	SS	12/11/11	100	М		SILT (ML), dark gray	,
2	SS	9/14/25	100	M	_	CLAY (CL), dark gra OVM = 0	y, trace silt, stiff
3	SS	15/23/35	100	M	5 —	OVM = 0	brownish yellow, stiff W), brownish yellow, dense
4	SS			DRY			
5	SS	6/21/35	1000	REAS		CLAY (CH), olive bro OVM = 0 OVM = 0	own, trace gravel, stiff
6	ss	8/19/29	100	М	10	CLAYEY SAND (SC) OVM = 0	, brownish yellow, trace gravel
7	SS	9/19/25	100	М	호 - -	SANDY CLAY (CL), OVM = 0	little silt, trace gravel, very stiff
8	SS	9/13/17	66	М	15—	SILTY SANDY CLAY	(CL), brownish yellow, loose
							* No. 4426 S No. 4426 S ** ** ** ** ** ** ** ** **
ļ 	L	GENER/	AI NC	TFS	<u> </u>		WATER LEVEL OBSERVATIONS
DATE	START			17 JUL	01	WHILE DRILLING	¥ 13.5
				17 JUL 17 JU		AT COMPLETION	<u> </u>
1						AFTER DRILLING	· · · · · · · · · · · · · · · · · · ·
							DEPTH
						WATER: DATE/TIME	1

APPENDIX E



PROJECT NAME:	SERVISCO	NO.	12012.10
VELL NG.	MW-7		
DATE INSTALLED	06-17-91		

<u> </u>	ELEV. (T.O.C.) 21.37				SING DETAILS TYPE OF PIPE:	
	GROUND SURF. ELEY.		DERTH CRAY	~,		
	Concrete /xx				PVC, STAINLESS, TEFLON, O	
	BENTONITE PELLETS/GRAHULAR/POWDER		FT.	в)	TYPE OF PIPE JOINTS;	
		53 St	0.5 PT.	,	COUPLINGS, THREADED (W/T.	IDF7) ATURD
	BACKFILL MATERIAL			c)	WAS SOLVENT USED? YES OF	
	6 Sack Mix				TYPE OF WELL SCREEN:	<u></u>
PIP					PVC, STAINLESS, TEFLON, O	OTHER
15 FT. 9	BACKFILL HETHOD		BOREHOLE		WELL SCREEN SLOT SIZE	
. S	PIPE TREMIE/AUGER TREMIE GRAVITY FILLED		bia. 8 in.		PIPE DIA: ID IN.	
LENGTH	UNAVILL FILLED	15 TO 15 TO	12.5 rt.		INSTALLED PROTECTOR PIPE PROTECTOR PIPE DIA IN	W/LOCK? YES OR HO
<u>-</u>	BENTONITE PRICETS (CRANKE AR (ROUNER			2) WELL	L DEVELOPMENT	
	P ELLETS/GRANULAR/POWDER		545	A)	нетнор	
			FT.		BAILING, PUMPING, SURGING	, COMPRESSED AIR
	SILICA SAND		14.5 FT.		OTHER EK	Hand Pump
	FILTER PACK				(NOTE ADDITIONAL COMMENTS	BELOW)
_x +	MATERIAL		12.49 rt.		TIME SPENT FOR DEVELOPMENT	
SCREEN	#3"Sand			c)	APPROXIMATE WATER VOLUME:	REHOVED 110-Gallon
VELL S						ADDED
3,17	WELL BOTTON ELEY.		30.0 FT.	D) 1	WATER CLARITY BEFORE DEVEL	LOPHENT?
	SEAL MATERIAL	8.00	FT.		CLEAR, TURBID, OPAQUE	
		G2582	FT.	E) 1	WATER CLARITY AFTER DEVELO	DPHENT?
	BACKFILL HATERIAL				CLEAR, SLIGHTLY TURBID, TO	IRBID, OPAQUE
			FT.		ODOR? YES OR NO	
					R LEVEL SUMMARY	
					DEPTH FROM TOP OF CASING A	FTER DEVELOPMENT?
				2	33.45 FT. OR DRY	
					OTHER HEASUREMENTS (T.O.C.	
					OX-19-01/Init	
						Sampling 33.86
				D	DATE/TINE 08-27-91/	34.37
	ADDITIONAL COMMENTS: Develope					
	water was very turbid. Co	mpleted with	n flush mounted	cristy	-box type cover. T.O.(C. elevation
	surveyed relative to mean s	sea level.			·	

No. 12012.10° MV-4A VELL NO.

DATE INSTALLED 07-16-91

ELEV. 1) CASING DETAILS (T.O.C.) 24.13 Ft A) TYPE OF PIPE: GROUND SURF. DEPTH FROM PVC. STAINLESS, TEFLON, OTHER GROUND SURFACE Concrete 0.0 FT. PIPE SCHEDULE 40 BENTONITE PELLETS/GRANULAR/POUDER B) TYPE OF PIPE JOINTS; 0.5 PT. COUPLINGS, THREADED (W/TAPE?), OTHER BACKFILL MATERIAL C) WAS SOLVENT USED? YES OR NO 6 Sack Mix D) TYPE OF WELL SCREEN: PIPE PVC, STAINLESS, TEPLON, OTHER SOLID BACKFILL METHOD BOREHOLE E) WELL SCREEN SLOT SIZE 0.01 DIA. 8 in. PIPE TREMIE/AUGER TREMIE P) PIPE DIA: ID IN. 4 OD IN. ò GRAVITY FILLED G) INSTALLED PROTECTOR PIPE U/LOCK? YES OR NO П.8 гг. PROTECTOR PIPE DIA. ____ IN. BENTONITE 2) WELL DEVELOPMENT PELLETS/GRANULAR/POWDER A) METHOD FT. BAILING, PUNPING, SURGING, COMPRESSED AIR SILICA SAND OTHER <u>13.8</u> rt. (NOTE ADDITIONAL COMMENTS BELOW) FILTER PACK KATERIAL 15.07 rr. B) TIME SPENT FOR DEVELOPMENT? 4 HOUS . SCREEN "#3 Sand c) APPROXIMATE WATER VOLUME: REMOVED 25-Gallon ADDED WELL BOTTOM D) WATER CLARITY BEFORE DEVELOPMENT? ELEV. CLEAR, TURBID, OPAQUE SEAL MATERIAL E) WATER CLARITY AFTER DEVELOPHENT? BACKFILL CLEAR, SLIGHTLY TURBID, TURBID, OPAQUE HATERIAL F) ODOR? YES OR NO 3) WATER LEVEL SUMMARY

- A) DEPTH FROM TOP OF CASING AFTER DEVELOPMENT? 39.2 FT. OR DRY
- B) OTHER HEASUREMENTS (T.O.C.): DATE/TIME 07-15-91/Initial 45.43 DATE/TIME 07-18-91/Fre Sampling 39.2 DATE/TIME 08-27-91/39.26

ADDITIONAL COMMENTS: Developed 07-19-91, the well was swabbed for 15 minutes, 55 gallons bailed. Water was very turbid. Completed with flush mounted cristy-box type cover. T.O.C. Elevation surveyed reactive to mean sea Level.

APPENDIX E

APPENDIX E
GEOLOGIC LOGS

zb:166005rv.rpt:ARA_SERVISCO_SSI

Rev 310 8/03/90



LEGEND

- Standard split spoon sampler used where indicated by "SS". Modified California Sampler indicated by "CS".
- 2. Lithologic samples from liner #1 or shoe.
- 3. Backfilled to surface with Type II portland cement and capped with fast dry Burke Cement.
- 4. Penetration resistance values (N) by tube-type, 140 pound hammer, free-falling 30 inches; rope and cat-head operated.
- 5. Asterisk indicates sample submitted for laboratory hydrocarbon analyses.

I E.		T	LO	G OF TES		ORING	BORING NO	SB-1
				F-203 (R 0			SHEET NO. 1	
-							PROJECT NO	
			_			-	INSTALLATION_	
						·	SURFACE ELEV.	
		DRILL	ING M	IETHOD		HSA	BOREHOLE DIA.	<u>8.5 IN.</u>
		AMPLING				VISUA	L CLASSIFICATIO)N
	ERVAL		- 1	MOISTURE	_		JERAL OBSERVAT	
NO.	TYPE	N	IN	DEPTH	12.1			
						Concrete sidewalk	over base course.	
1	ss	12	1	-		Medium GRAVEL	, some sand, trace s	ilt. brown, dry.
•		3	1			(FILL)	, Joine Janua, Ilado	, 0.0, 41.).
					* •			
		-		<u> </u>				
		1		_		Silty CLAY, occasi	ional fine gravel, ol	ive gray, very
				5		stiff, plastic, moist		• • • •
2	SS	24	14					
				_				
	<u> </u>	1						
		1						
		_		_				
								•
		-		-		Tiche alive grove C		
							LAY with brownish ry stiff (p.p. = 3.75)	
3*	CS	33	18	10		moist. (CH)	() bixx (p.p. – 5.70)	,b, piastiv,
				_		` '		
	ļ ,							
		-		-		thau - 55 ana	n, aliaht adam	
						[hnu = 55 ppn]	n, sngnt odorj	
	i i	1						
		_		_		···		
							trace medium to fin	
4*	CS	45	18	15		pockets, moist (SM	nal brownish-yellow	silty clay
4	Co	43	10			pockets, moist (SM	,	
				_		[hnu= 100 ppr	n; gasoline odor]	
		_		_		END OF BORING	AT 16.5 FT.	
		-		-	1			
•								
]	See Attached Leger	nd.	
	<u> </u>	CENTE		OTES.	<u> </u>	***	ATTENT OF CO.	CD VA TRONG
		GENER.					ATER LEVEL OBS	
ľ				MAR 90	-	WHILE DRILLING	5\\	I/A
1				6 MAR 90	- 1		. ₹ <u> </u>	I/A
1				5		AFTER DRILLING		
1				Keevey			DEPTH	
LOG	GEDZ	. Batchko	CHE	CKED Davis		WAIER: DAIE/TIME	DEPTH	

R		T	LO	G OF TEST		BORING NO. SB-2
- E		DP O IE	מידי אנ.			SHEET NO. 1 OF 1 PROJECT NO. 1660.05
1						
•						SURFACE ELEV.
						BOREHOLE DIA. 8.5 IN.
	SA	MPLING	3 NO	res	VIS	UAL CLASSIFICATION
INTE	RVAL	RECO	ERY	MOISTURE	ANDG	ENERAL OBSERVATIONS
NO.	TYPE	N	IN	DEPTH	M.D.O	
	SS	7	1,2		4" Concrete side	walk over 3" base course.
1	22	, i	12	-	SILT, some clay	Dk. Br., loose, wet, dilatent, (FILL)
2	SS	40	18	5—	Silty CLAY, occ yellowish red m	casional fine gravel, olive gray with ottling, v. stiff, plastic, moist. (CH)
3*	CS	35	18	10	pockets, very sti plastic, moist. (C	ve gray, with brownish yellow silty clay iff (p.p.=3.2 and T.V.>1.0tsf), CH) pm; slight odor]
4*	CS	50-6"	12	15—	SILT, some clay	, olive gray to brown, moist. (MH)
					clay pockets, mo	
		GENER.	AL N	OTES	ļ	WATER LEVEL OBSERVATIONS
DAT	E STAR	TED	6	MAR 90	WHILE DRILLI	$NG \stackrel{\square}{=} N/A$
DAT	E COM	PLETED		6 MAR 90	AT COMPLETI	ON ¥N/A
				5		ING
				Keevey	CAVE-IN: DATE/TIME	DEPTH
LOG	GEDZ.	Batchko	CHE	CKED <u>Davis</u>	WATER: DATE/TIME _	DEPTH

R		T	LC	G OF TES		BORING NOSB-3 SHEET NO1OF1
7		DP () IE (יד' או.			PROJECT NO1660.05
						INSTALLATION03/06/90
						SURFACE ELEV.
					_	BOREHOLE DIA. 8.5 IN.
		MPLINO			1121	
INTE	ERVAL			MOISTURE	VI	SUAL CLASSIFICATION
	TYPE	N N	IN	DEPTH	AND	GENERAL OBSERVATIONS
		• •				ver 4" base course.
2*	SS	6	18	5	clay, light of very stiff (p.p. pockets, plastic	live gray with brownish yellow mottling, =4.25 and T.V.>1.0tsf), occasional silt
3*	CS	29	18	15	gravels, loose-wet (no free w [hnu=25 p	ine, some medium to fine subangular medium dense, trace clay, nonplastic, ater). (SM) opm; very slight odor] ING AT 15.0 FT.
DAT	E COM	PLETED	6	OTES MAR 90 6 MAR 90 5	AT COMPLET	WATER LEVEL OBSERVATIONS LING N/A N/A N/A
CRF	W CHIE	F	rie 3 P	Keevey	CAVE-IN: DATE/TIE	ME DEPTH
1				CKED <u>Davis</u>	•	DEPTH
100		~HITHU		UATIS DATIS		Wet 111

R		T	LC	OG OF TE		BORING	BORING NO			
- T		DD O IE	ידי או			Servisco - SSI	SHEET NO. 1			
						and, CA				
		CONTR	ACT	OR V	V. Ha	zmat Drilling	SURFACE ELEV	' <u>-ν</u>	3/03/30	
						mat Drilling SURFACE ELEV. BOREHOLE DIA. 8.5				
	\$2	MPLINC							GENER	
INTE	ERVAL			MOISTURI	Ξ		SSIFICATION		WEL	
—	TYPE	N	IN]		AND GENERAL	OBSERVATIONS		CONSTR	
-					-	2" a.c. over 3" grav	el base.		-	1 -
	1				_					
						Clayey SILT, dark				
	-				-	occasional reddish plastic, moist. (FIL		ts,		\ - <u>-</u>
					-0	Silty CLAY, occasi brownish yellow, v				·
				_		moist. (CH)	ery stirr, plastic,			
1	SS	40	18	5		• •	ppm; no odor]			
		·	Ĭ							
						With 1mm 0 roots With dense fine SA				
	-				-//	with dense tine SA	ind seam at o.			
									200000 200000 200000	
							•			
	-									
						SAND, trace fine t	o medium gravel			
2*	CS	40	18	10		subangular, some s		nish		
						yellow-olive gray,		et		∄
						(no free water). (SI	P-SM)			
1			,				; gasoline-like odo	orl [
							, 8			
						Silty CLAY, trace		sh		∄
	-				-//	yellow, stiff (T.V.=				
						free water), plastic reddish-brown silty		19		
3*	CS	26	18	₹ 15	(/	(CH)	, imo sana pooko.			
					-//	[hnu=4 ppm;	slight gasoline ode	or]		
						Cardina man a situ	-4 201			
	l H				-//	Grading more silty gray clay pockets,	_			
						wet (trace free wat		,		
					-{//	Ch.m.s. 4	don dosees 33			
						[hnu=4; no o	uor detected]			
	<u> </u>	GENERA	L N	OTES		WA	TER LEVEL OB	SERV	ATIONS	Postatija
DAT	E STAR	RTED	5	MAR 90		WHILE DRILLING	3 ⊈	22.0		
1				5 MAR 90		AT COMPLETION	¥	15.0		
				5		l .				
				Keeyey		_ CAVE-IN: DATE/TIME	DEPTH			
						WATER: DATE/TIME				

R		7	LC	G O	F TES	T BORING		
- 1	77				F-203 (R 0		SHEET NO. 2	
							_ PROJECT NO	
							_ INSTALLATION_	
							_ SURFACE ELEV.	
					OD	<u>nsa</u>	BOREHOLE DIA.	
-> 100T		MPLING				VISUAL CI	LASSIFICATION	GENERAL
	ERVAL		-	1	TURE	AND GENERA	L OBSERVATIONS	WELL
	TYPE	N	IN	<u> </u>	DEPTH	 		CONSTRUCT.
5	SS	35	18		25————————————————————————————————————	brownish-yellow mottling, firm, s (CL)	pleted at 14:15.	

R	11/		LC	G OF TES			BORING				
		DD OIE	∕ጥ እ፣				SHEET N				
						Servisco - SSI nd. CA					
						mat Drilling					
						HSA					
					7						
INITI	ERVAL	AMPLING		MOISTURE	-	VISUAL CL	ASSIFICAT	ION		GENEI WEL	
—	TYPE	N	IN	1	,	AND GENERA	L OBSERVA	TIONS		CONSTR	
140.	TIFE	14	1114	DEFT		28 . 28		4H 1		CONSIR	1001
						$2" + 2"$ a.c. over \sim course.	approximate	y 4" base	,		
		1		-		Course.			_/		_
		_		-		Clayey SAND, w				-	
						brown, medium				. .	
		_		-	1:1	moist, slightly pl	astic, no odo	r. (SC)			_
											-
1	CS	50	18	5—	-[/]						·
1	C3	30	10				·				-
				_		Silty CLAY, trac	e sand, brow	nish			
		-	İ	-	-	yellow, very stiff					
						[hnu=0, no	odor detected	1]			
		1		-							
İ		<u> </u>									
2*	CS	29	18	10-	-	Same as above w	ith coordians	1 Cina	Í		∄
	CS	29	10			gravel and very s					∄
							; hint of gase				
	-		1	_	- 600	odor]					
	-	i		-							∄
	<u> </u>				1::1	4					∄‱
		•				Gravelly SAND,					
2*		70	١,,	₹ 15	-	brownish yellow-		lense, wet			
2.	CS	78	16		: :	(no free water). (SW)				
	1			_	1::1	[hnu=10 ppn	n; weak hydr	ocarbon			
				<u> </u>	1::1	odor]	,				
											₹***
	l t	1		-	₩	Silty CLAY, trace	a fina cand	hrownich			
						yellow, stiff (T.V	•				
						wet. (CH)	,,,	,			
	<u> </u>										30000
_		GENER					VATER LEV				
1				MAR 90		WHILE DRILLIN	/G ¥	17	7.0		
l				6 MAR 90		AT COMPLETIC		15	5.0_		
				<i>V</i>		AFTER DRILLI		.			
1				Keevey		CAVE-IN: DATE/TIME					
LOG	GED Z.	Batchko	CHE	CKED <u>Davis</u>	<u></u>	WATER: DATE/TIME	3/6 10:00	DEPTH		15.30'	

R		T	LC		TES ⁻ 203 (R 0		BORING	BORING NO. N	
		PROJE	CT N	AME	Arat	ex S	Servisco - SSI	PROJECT NO1	660.05
								INSTALLATION	
								SURFACE ELEV.	
		DRILLI	NG N	METHO	D		<u>HSA</u>	BOREHOLE DIA.	105 IN.
		MPLINC			· · · · · · · · · · · · · · · · ·	}	VISUAL CLA	SSIFICATION	GENERAL
	RVAL		7	MOIST			AND GENERAL	OBSERVATIONS	WELL
	ТҮРЕ	N	IN	L	DEPTH	1222			CONSTRUCT
4	CS	35	6		_		[hnu=10 ppm; like odor]	slight hydrocarbon-	
5	CS	70	18		25		and clay, brownish with some free wat		
	-						——————————————————————————————————————	no odor distinguished] nd and clay, brownish	
6	CS	32	4		30			nse, wet with trace dilatant, slightly	
		0 0 0			-		END OF BORING 4-inch well comple		
					35—		See Attached Leger	nd.	
					40— —				

R		T	LC	OG OF TES		BORING NOSHEET NO1O	
•		PROJE	CT N	AMEArat	ex Servisco - SSI	PROJECT NO	
		LOCAT	NOI.	Oa	kland, CA	INSTALLATION	03/05/90
					·	SURFACE ELEV	
		DRILL	ING N	METHOD	HSA	BOREHOLE DIA	105 IN.
	S	AMPLING	3 NO	ΓES	VISITAL CI	ASSIFICATION	GENERAL
····	ERVAL	RECO	YERY	MOISTURE	AND GENERAL	L OBSERVATIONS	WELL
NO.	TYPE	N	IN	DEPTH	AND GENERAL	- CODDER VATIONS	CONSTRUCT
1	CS	12	18	5	subangular, trace dark brown to bro odor. (SW)	ium to fine gravel, clay, well graded, own, loose, dry, no istinguishable odor]	
2*	CS	21	18	10	stiff (T.V.=1.0 tsf) flocculated. (CH)	light olive gray, very), plastic, moist, ; slight organic odor]	
3*	CS	34	15	Y - 15	angular gravels, li greenish gray clay water, nonplastic- (SC-CL)	, some medium to fine ght olive gray, with pockets, trace free slightly plastic, wet. m; slight stale organic	
	<u>. </u>	GENER	AL N	OTES	w	ATER LEVEL OBSER	VATIONS
DAT	E STAR			MAR 90		G <u>¥</u> 18.0	
1				5 MAR 90		N ¥ 14.2	
RIG			ME 5	5	AFTER DRILLIN		
CRE	W CHIE	F	В.	Keevey	CAVE-IN: DATE/TIME _	DEPTH	
1				CKED <u>Davis</u>	.	DEPTH	

R			T	LO	G OF TES'	T BORING	BORING NO. M SHEET NO. 2 OF	
			PROJE	CT N	AME <u>Ara</u>	ex Servisco - SSI	PROJECT NO. 10	
							INSTALLATION0	
							SURFACE ELEV	
						HSA	BOREHOLE DIA	IN
			MPLINC			VISUAL CLA	ASSIFICATION	GENERA
	RVAI	¬ }-		1	MOISTURE	AND GENERAL	OBSERVATIONS	WELL
NO. 4	TYPE CS		N 18	IN 18	DEPTH			CONSTRU
5	CS		56	18	25	gravel, brownish y tsf), wet (no free finu=15 ppm; T.V. at 25'=0.5 tsf SAND, well, some gravels, subrounde medium dense, we (SW)	nd pockets and fine rellow, firm (T.V.=0.27 water), plastic. (CH) stight organic odor]. medium to fine red, yellowish red,	
6	SS			18	30	SILT, trace fine sa brownish yellow, s wet with trace free dilatant, slightly p [no odor dete	stiff (T.V.=0.65tsf), e water, slightly lastic. (ML) cted]	
		H			-	4-inch well comple	eted at 12:00.	
		Ц			35—			
		П				See Attached Lege	nd.	
		Н			-			
ľ		Ц					j	
		Н						
			:		40-			
					40-			
		H			-			
	!	H		Į				
		П						