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# **SOIL & GROUNDWATER SITE ASSESSMENT:**

DONGARY INVESTMENTS - OAKLAND 2225 7th street Oakland, CA. 94607

March 18, 1993 RAMCON Job #476004



P.O. Box 1026 3751 Commerce Drive West Sacramento, CA 95691

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Ms. Jennifer Eberle Hazardous Materials Specialist Alameda County Health Care Services Agency Department of Environmental Health 80 Swan Way, Room 200 Oakland, CA. 94621

RE- SITE ASSESSMENT: DONGARY INVESTMENTS - OAKLAND

**2225** 7th street

Oakland, CA. 94607 RAMCON Job #476004

Dear Ms. Eberle,

The site assessment report includes a description of the work completed in the field, site plans of the boring\monitor well locations, calculation of the groundwater gradient, the tabulated analytical data, boring & well completion diagrams, two cross sections, and copies of all analytical data. Additionally, a site plan with the estimated extent of the plume has been included.

Following RAMCON's "Soil & Groundwater Site Assessment Work Plan" dated 11-13-92, a total of 16 soil borings were drilled at the subject site, (Appendix 1, Plate 1 & 2). Three of the soil borings were later converted into groundwater monitoring wells.

#### **SUMMARY:**

Based on the field observations and analyses of soil and water samples collected from during the assessment, the extent of the free product plume extends 160 feet north of the southern end of the main excavation, less than 20 feet south of the northern end of the main excavation, and has an estimated width of 200 feet, (Appendix 1, Plate 3). The total dimensions of the plume defined by the soil borings are approximately 200 feet by 300 feet. Vertical contamination was observed at approximately 4 feet from grade and extends to the water table at 6 to 7 feet. No samples from below the water table were analyzed. Water samples collected from the three monitor wells were free of BTEX and Total Petroleum Hydrocarbons but contained chlorinated solvents.

Our client is currently reviewing proposals from consulting firms to remediate the site.

**Previous Reports- RAMCON** has filed the following reports with the Alameda County Health Care Services Agency Department of Environmental Health (CAHCS): "Soil & Groundwater Site Assessment Work Plan", dated 11-13-92, and "Tank Removal Work Summary", dated 10-12-92.

Current Site Conditions- Both the main excavation and the waste oil excavation are open and free product, (diesel), is present floating on the groundwater. Four stockpiles are located around the main excavation. A total of four 55 gallon barrels of water are stored on site: three barrels of rinsate from steam cleaning the auger flight and one barrel of water generated from developing the three groundwater monitoring wells.

#### SITE BACKGROUND & TANK REMOVALS:

The subject site is located approximately 1 mile south of the Interstate 80 toll gate to the Bay Bridge at the intersection of Maritime and 7th Street, (Plates 1 & 2). The property is owned by the Port of Oakland, leased to Dongary Investments, who in turn sublease the property to ANR Freight, NW Transport Services, and Sealand Services Inc.

During the summer of 1989 one of the 20,000 gallon diesel tanks failed a leak detection test. Bore holes were placed around the eight existing tanks and samples of the soil and water were collected and analyzed. Contamination was detected and in March of 1990 the one leaking diesel tank was removed. Soil samples were collected and hydrocarbon contamination found below the former diesel tank. The contaminated soil was excavated, disposed of off site, and the excavation was backfilled. A report summarizing the soil borings and tank removal was forwarded to the Alameda County of Hazardous Materials Division on June 7, 1991.

On 7-27-92, **RAMCON's** personnel removed 6 diesel tanks and 1 bulk oil tank. Upon removal the tanks were inspected and no obvious holes or leaks were noted in the six diesel tanks. One hole was observed in the bulk oil tank. On 8-18-92, **RAMCON** personnel excavated and removed one 2,000 gallon waste oil tank. Upon removal the tank was inspected and no obvious holes or leaks were noted.

Groundwater seeped into the main excavation and the waste oil excavation, filling the tank impressions. Hydrocarbon contamination was noted floating on the water and the excavated soil had a strong diesel odor. Groundwater was observed at approximately 6 to 8 feet from grade and fluctuated about 1 foot in response to tidal effects. The dimensions of the single excavation containing the seven tanks are 110 ft by 45 ft and ranged in depth from 10 to 13 feet and the waste oil excavation are 18 ft by 12 ft and 11 ft deep.

The concentration of TPH as Diesel measured in the 16 main excavation <u>soil samples averaged</u> 28,000 ppm. The analyses of the <u>composite samples</u> from the stockpiled soil detected an average concentration of TPH as Diesel of 5,800 ppm.

The soil samples from the waste oil pit contained measurable levels of Benzene, TPH as Diesel (270 ppm and 27 ppm), TPH as Motor Oil, four Halogenated Solvent compounds, and five Semi-Volatile compounds. No Oil & Grease compounds or Organochlorine Pesticides & PCB's were detected and the concentration of the five waste oil metals (Cd/Cr/Pb/Ni/Zn) were below the Title 22 STLC values. For further information, please refer to RAMCON's "Tank Removal Summary".

#### **SOIL SITE ASSESSMENT:**

In order to determine the extent of the soil and groundwater hydrocarbon contamination associated with the former underground storage tanks; **RAMCON** drilled a total of 16 soil borings, (BH1 to BH16) and converted three of the borings to groundwater monitoring wells: (BH15= MW-1, BH16= MW-2, and BH13= MW3), (Appendix 1, Plate 2).

Taber Drilling, (C51, C57, & C61 license #466270) drilled all of the soil borings and installed three monitor wells. The drill cuttings were added to the stockpiles surrounding the main excavation and covered with plastic. All auger flights and the core barrel were steamed cleaned between borings. The rinsate was collected in a wash tub and later transferred into 55 gallon drums. Currently, three barrels of steam rinse water are stored along the fence line 30 feet north west of the main excavation. The water in the barrels has not be been profiled for disposal.

RAMCON's Project Geologist, Mr. Jaff Auchterlonie, collected and described the soil samples from the soil borings. All of the borings, with the exception of boring #16, were continuously cored over a five foot five interval to a depth of 9 to 10 feet. A log of each soil boring was made noting the lithology, bedding, sample points, and any obvious contamination. Please refer to Appendix 2 for copies of the sixteen soil borings and the well completion diagram for the three groundwater monitor wells.

Soil Sample Collection- A continuous coring device was used to collect a five foot core from approximately 5 to 10 feet. The core barrel was opened and samples were immediately collected into 2" by 6" brass sleeves. The sleeves were sealed with teflon tape, plastic caps, and duct tape. The samples were then labeled, placed on ice, and transported under chain-of-custody to Western Environmental Science & Technology (WEST) for analyses. WEST is a DOHS certified laboratory, (CA DOHS ELAP #1346). A split spoon sampler was used to collect samples at a depth of 10 feet in BH-4.

A total of 29 soil samples were collected and 25 of the samples were analyzed for TPH as Diesel & Motor Oil (EPA method 8015 modified). Six of the samples were saturated with diesel and not analyzed. Of the 25 samples analyzed, 13 samples were also analyzed for BTEX & TPH as Gasoline, (EPA method 8020/8015 modified).

Field Observations- Six of the sixteen borings drilled, bore holes 3, 4, 5, 7, 8, 10, and 11, contained free product. The occurrence of free product was verified by:

- \* diesel odors were noted coming from the cuttings while drilling
- \* In core samples while describing the lithology
- \* Noted in fluid samples collected directly from the open borings.

Typically, a strong diesel odor was noted in the sand at a depth of four feet to five feet. At this point the sand was dry and the presence of diesel is a residual coating of the grains. From 4 feet to 7 feet the concentration of diesel increased. At the base of the cores, (6 to 7 feet), free product would flow out of the core when samples were collected.

The recovery of soil using the continuous coring device appears to be controlled by the depth to ground water. In most cases, no core was recovered below the water table at a depth of seven feet. While drilling the auger flight would liquify sediment at the water table and no soil could enter the core barrel. When the auger flight was removed from the hole; the boring would collapse up to the water table. In some cases, the formation would flow up the inside of the auger flight when the core barrel was removed. Based on the unconsolidated nature of the formation, and trenching below the water table, 7 feet, will require shoring to remain open.

ANALYTICAL DATA- SOIL: A total of 19 soil samples were analyzed and 13 soil samples, collected from bores holes (2, 6, 9, 12, 13, 14, 15, and 16), were free of BTEX, TPH as Diesel contamination. Six of the samples, collected from bore holes (1, 4, 3, 5, 7, and 10) contained diesel in concentrations ranging from 42 ppm to 7,400 ppm. Refer to Table 1 in Appendix 1, for a summary of WEST's sample logs #5555 & #5579.

Note: Only one foot of core of core was recovered from BH-1 at five feet. The sample contained 42 ppm diesel and 77 ppm motor oil. No obvious diesel contamination was noted in the drill cuttings or on the auger flights. No free product was observed in the bottom of the boring after the auger flights were removed. In addition, the signature of the gas chromatogram in the sample does not match the G.C. curves of samples collected from within the diesel plume.

For these reasons, BH1 is considered to lie outside of the free product plume and the contamination detected in BH1-5 maybe the result of a minor surface spill.

#### WATER SITE ASSESSMENT:

Water Sampling- A hydropunch was used in bore holes #9 and #13 to collect water samples. In BH9, the punch was pressed to 14 feet and pulled back to 12.5 feet and in BH13 the interval opened was from 13 to 15 feet. No water entered the hydropunch in either boring. The lack of water entering the hydropunch could to due pressing the hydropunch into a impermeable clay bed from 12 to 15 feet.

Groundwater Monitor Well completion- Three soil borings were completed as groundwater monitor wells: BH15= MW-1, BH16= MW-2, and BH13= MW3. All of wells were completed in the following manner: Drill a 12" hole to 15 feet and run in 10 feet of screen and 5 feet of blank PVC pipe. The PVC is a TriLoc brand and the slot size of the screen is (.010). Sand (#0/30 RMC Lonestar ARB Grade) was poured in the annular space up to 4 feet from grade, one foot of bentonite pellets were placed from 3 to 4 feet, cement was poured to surface, and a flush mount well cover box. See the well completion diagram attached in Appendix 2, Plate 1-2.

Groundwater Monitor Well Samples- Referring to Taber Consultants summary of well development, survey, and sampling attached in Appendix 3, one water sample was collected from each of the monitor wells. The samples were collected in 40 ml VOA bottles and one liter glass bottles, check to insure that no head space was present, and transported under chain-of-custody to WEST from analyses. The three samples, MW-1, MW-2, and MW-3 were analyzed for BTEX (EPA method 602/purge-and-trap) and TPH as Diesel & Motor Oil (EPA method 8015/extraction). Sample MW-1, was also analyzed for Volatile Organic Priority Pollutants (EPA method 624)

#### ANALYTICAL DATA- WATER:

The water samples collected from the borings were free of BTEX, TPH as Diesel, and TPH as Motor Oil contamination above the laboratory detection limits, (Appendix 1, Table 2). Referring to WEST's sample log #5701, distinct spikes are present on the BTEX gas chromatogram curves in all three water samples. In order to define what the spikes represent, sample MW-1 was analyzed for Volatile Organic Priority Pollutants (EPA method 624). Five solvents were detected in the water sample at concentrations ranging from 1.9 ug/L to 23 ug/L.

Solvents- Based on the presence of the spikes on the three water samples G.C. curves it is assumed that the water from all three wells contains solvents. Since the three wells are located around the main excavation and a gradient has been defined at the site; the occurrence of solvents in the water indicates the solvents may be introduced from a source up gradient of the main tank pit.

Note: Two soil samples, PFA-1 & PFB-1, were collected from the waste oil pit following the tank removal on 8-18-92. The samples were analyzed for Halogenated Volatile Organics (EPA 8010) and detected the presence of solvents. The table below compares the analytes detected in the monitor well water sample to the two waste oil pit soil samples. MW-1 is located up gradient from and 230 feet south of the waste oil pit.

Analyte	MW-1	PFA-1	PFB-1
t-1, 2-Dichloroethene		.066 mg/kg	.066 mg/kg
. 1, 2-Dichloropropane	dende	.048 mg/kg	.087 mg/kg
c-1, 2-Dichloroethene	1.9 ug/L	.36 mg/kg	.036 mg/kg
1, 1-Dichloroethene	13 ug/L	<b></b>	
1, 1-Dichloroethane	23 ug/L		
Tetrachloroethene	3.2 ug/L	.0021 mg/kg	ND
Trichloroethene	7.9 ug/L		

A full description of the waste oil tank removal, sample collection, and analytical data can be found in RAMCON's "Tank Removal Work Summary" dated 10-12-92.

Groundwater Gradient- Review of other soil and groundwater remediation projects on file at the Alameda County Department of Environmental Health revealed three projects sites located within one half mile of the subject site: Southern Pacific Site, (Northeast, across the street from the Dongary Site), a site at 801 Maritime, and one site at the intersection of Ferry and Petroleum. The study of the S.P. site determined the groundwater gradient was in the North-Northwest direction. The 801 Maritime site concluded the tidal effects would override the gradient and the groundwater flow direction was not studied. At the Ferry and Petroleum site a groundwater study determined that the tidal influences did not effect the groundwater. The varied conclusions of the three groundwater studies may be the result of the heterogenous nature of the Bay mud and the backfill material used to originally develop the Port of Oakland. From observations made at the Dongary site open pit; tidal influences appear to effect the groundwater level.

Taber Consultants surveyed the three monitor well locations and measured the depth to ground water in each well on 01-08-93. The flow direction was determined to be S85W and the gradient was calculated to be 0.0014 feet per foot, (Appendix 3, Plate 1).

Note: The flow direction determined by Taber differed from the S.P. flow direction by approximately 50 degrees. Refer to Appendix 1, Plate 5, the flow direction of S85W does not fit the direction of the free product plume as determined by soil borings.

Gradients and groundwater flow directions are dynamic and can change seasonally in response to rain and surface runoff. Considering the main excavation is open and significant amounts of rain fell in the month of December and January; it is not surprising that the flow direction was not consistent with the plume direction. In addition, tidal effects on the groundwater may have an effect on a one time measurement.

#### LITHOLOGY:

Based on descriptions of the continuous cores and the cuttings from the auger flights the two distinct lithologies were encountered at the site, a uniform well sorted sand and a poorly sorted clayey sand interval, (Appendix 1, Plate 4).

Sand- 13 of the 16 borings encountered a SAND from 4 to 7 feet that is well sorted, fine to medium grained, contains less than 5% clay and is very loose. The top of the sand varies from 2 to 5 feet. Since no core was recovered from 7 to 10 feet, it appears that lost core interval is composed of sand that was liquefying ahead of the auger flight. Based on the liquefaction assumption, the sand interval appears to extend from 4 to 10 feet. The following borings encountered the sand: BH1, BH2, BH3, BH4, BH5, BH7, BH8, BH9, BH11, BH13, BH14, BH15, and BH16.

The interval overlying the sand is asphalt and gravel from 0 to 1 foot, mixed sand\gravel\ and clay soil from 1 to 3 feet, and sandy clay from 2 to 5 feet. The overlying soil is loose and poorly sorted.

The interval underlying the sand was penetrated in four borings: BH9 to 11.5 feet, and BH13, BH14, and BH16. In BH4 a splitspoon sample from 10 to 11.5 was recovered and was made up of interbedded sand and clay. The sand beds were 1" to 2" thick, well sorted, and loose. The clay was green in color, highly plastic. Observation of the auger cuttings and of the material stuck to the auger flight indicates the formation from 10 to 15 feet is dominated by green and black clay with minor amounts sand. The dominance of clay is also supported by our failure to collect water samples using a hydropunch from 12 to 15 feet.

**Poorly sorted clayey sand interval-** Borings BH6, BH10, and BH12 encountered this lithology. The interval occurs from 4 to 10 feet and is dominated by blue green clayey sand. In bore hole 12, the lithology consists of stiff clay and clayey sand from 3 to 9 feet.

Note: BH12 was drilled to a depth of 9 feet, allowed to remain open over night, and no groundwater entered the boring. Based on this observation; the lithology appears to effect or impede the groundwater flow. In bore hole 10, green clay and black fractured gravel was observed at 4.5 feet before the auger failed to make hole.

Lateral Changes in Lithology- The lateral change from the uniform sand to the poorly sorted clayey sand interval occurs within a distance of 25 feet between BH11 and BH10. The change in lithology is estimated trend east-west between BH10 and BH11, and BH6 and BH4, (Plate 3 and the cross sections in Plate 4).

#### **CONCLUSIONS:**

Plume Dimensions- Based on the field observations and analyses of soil and water samples collected from during the assessment, the free product plume is estimated to extend 160 feet north of the southern end of the main excavation, less than 20 feet south of the northern end of the main excavation, and has an estimated width of 200 feet, (Plate 3). The total dimensions of the plume defined by the soil borings is approximately 200 feet by 300 feet. Vertical contamination was observed from approximately 4 feet from grade and extends to the water table at 7 feet. (No soil samples from below the water table were analyzed.)

Water Quality- Water samples collected from the three monitor wells, located outside of the free product plume, were free of BTEX and Total Petroleum Hydrocarbons and contained chlorinated solvents. Since the solvents are present in all three wells and the wells are located both up and down gradient of the main excavation and the waste oil pit; part or all of the solvents detected water appear to be coming from a source located up gradient from the excavations. It is unlikely that the solvents detected in the waste oil pit soil samples could migrate in the water to all three wells.

The soluble concentrations of hydrocarbons in the water underlying the free product are not known.

Summary- Soil and groundwater contamination exists at the subject site. Based on the data gathered in the site assessment, the limits of the plume have been defined to the south, east, west, and north of the main excavation. The water sampled in three groundwater monitoring wells is free of hydrocarbon contamination and contains solvents.

Remediation of the soil and groundwater will be required and our client is currently reviewing proposals from consulting firms to remediate the site. The stockpiled soil and five 55 gallon barrels of rinsate and well water will require further treatment and/or disposal.

If you have any questions pertaining to the assessment work plan; please feel free to contact Jaff Auchterlonie @ (916) 372-7535.

Sincerely, Jaffy & auchton

Jaffrey S Auchterloine

**RAMCON-** Project Geologist

Daniel J. Hinrichs P.E.

Consulting Engineer

cc. Mr. Don Ringsby, **Dongary Investments** 

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#### **APPENDICIES**

# **APPENDIX 1- Plates & Tables**

riate 1	General Location Map
Plate 2	Site Plan- Soil Borings and Monitor Well Locations
Plate 3	Site Plan- Index to Cross Sections, and Estimated Free Product Limits
Plate 4	Cross Sections A-A' and B-B'
Plate 5	Site Plan- Taber Consultants Groundwater Gradient
Table 1	Analytical Summary, 25 Soil Boring Samples
Table 2	Analytical Summary, 3 Monitor Well Water Samples

# **APPENDIX 2- Well Diagram and Soil Boring Logs**

Well Completion Diagram

16 Soil Boring Logs

# **APPENDIX 3- Taber Consultants Reports**

Groundwater Gradient and Flow Direction

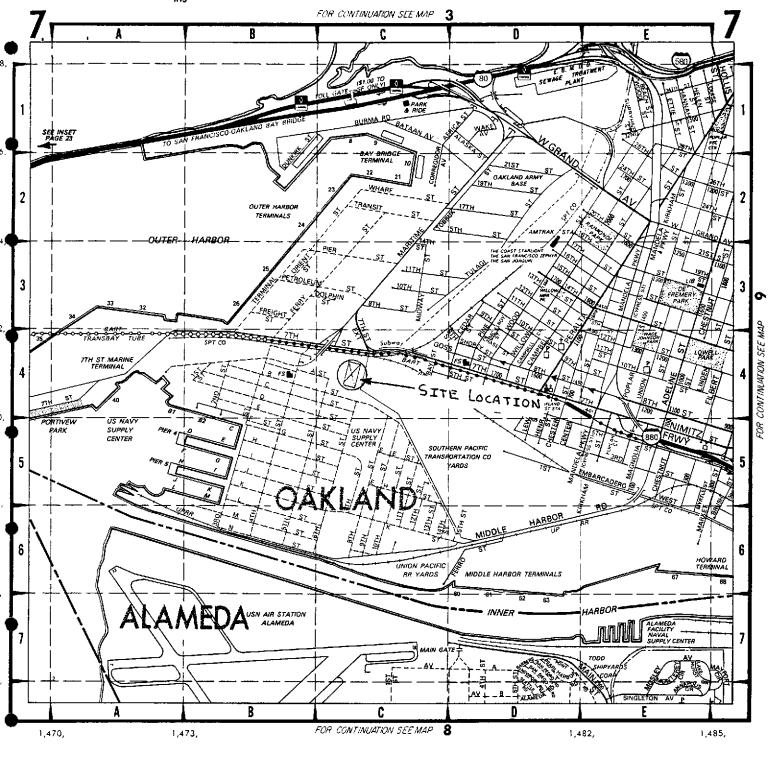
Sieve Analyses of uniform sand

### **APPENDIX 4- Analytical Data**

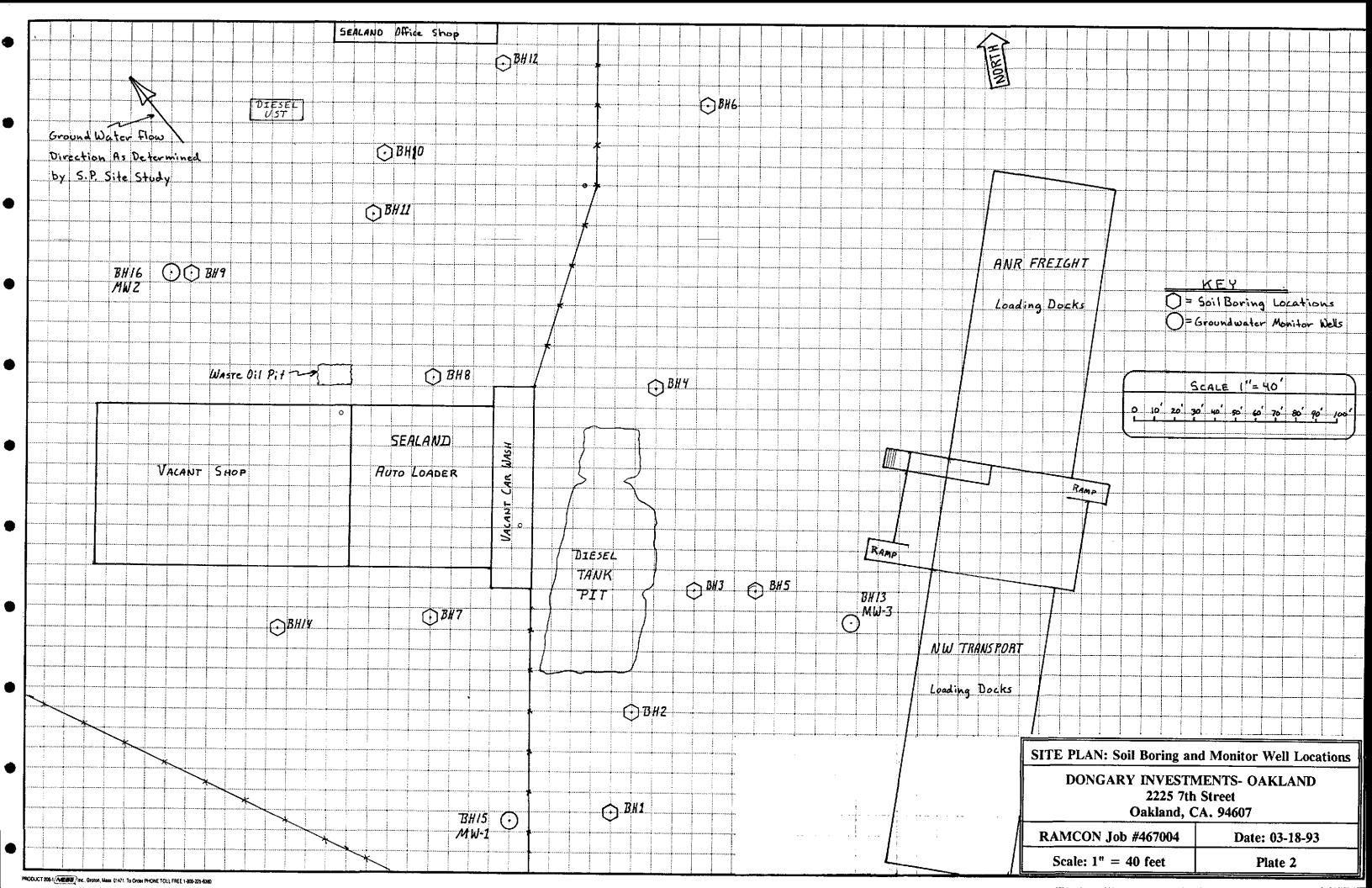
Sample Log #5555	Sampled 12-15-92, 6 soil boring samples
Sample Log #5579	Sampled 12-15-92 & 12-16-92, 13 soil boring samples

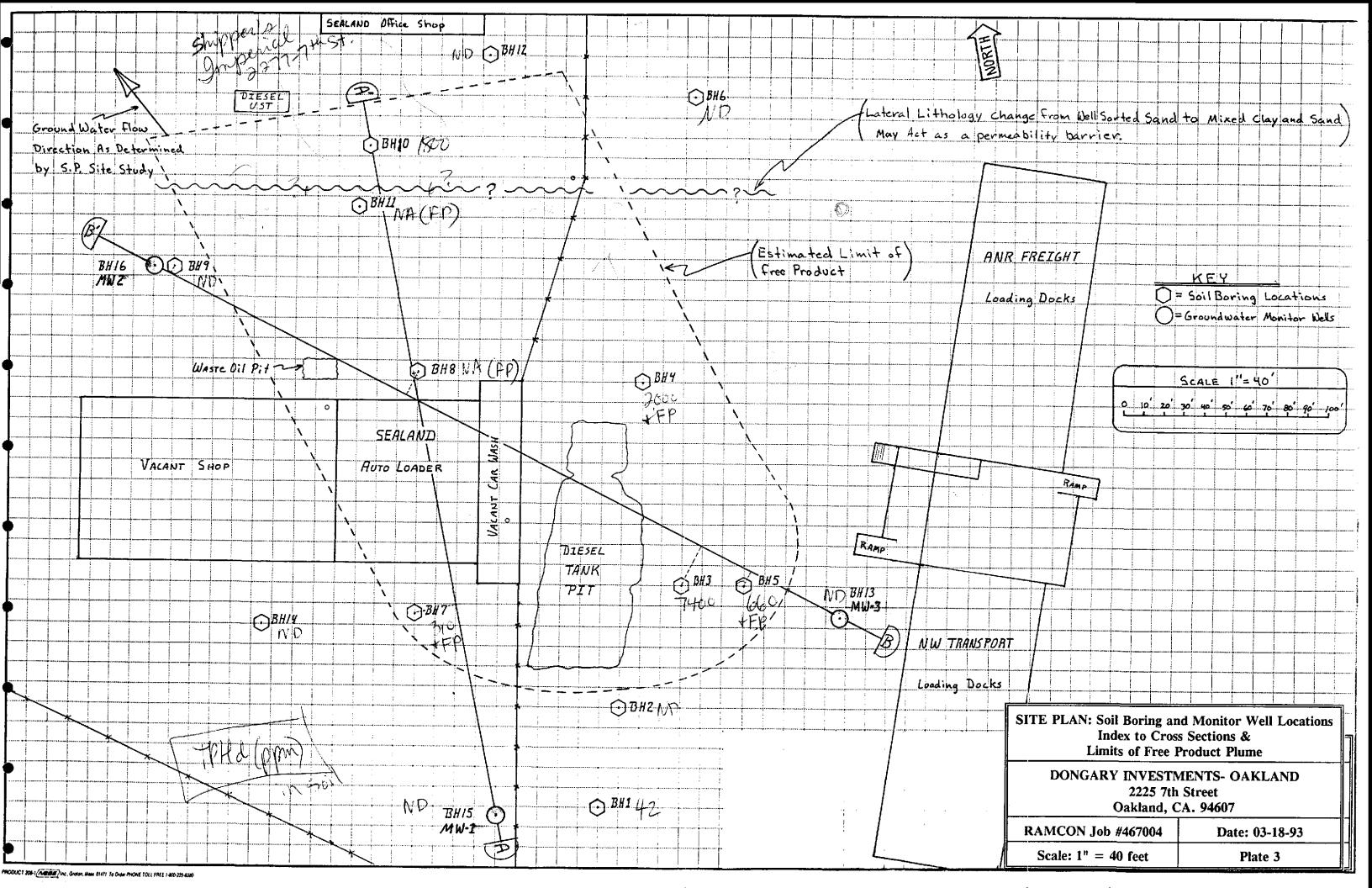
Sample Log #5701 Sampled 01-15-93, 3 monitor well water samples

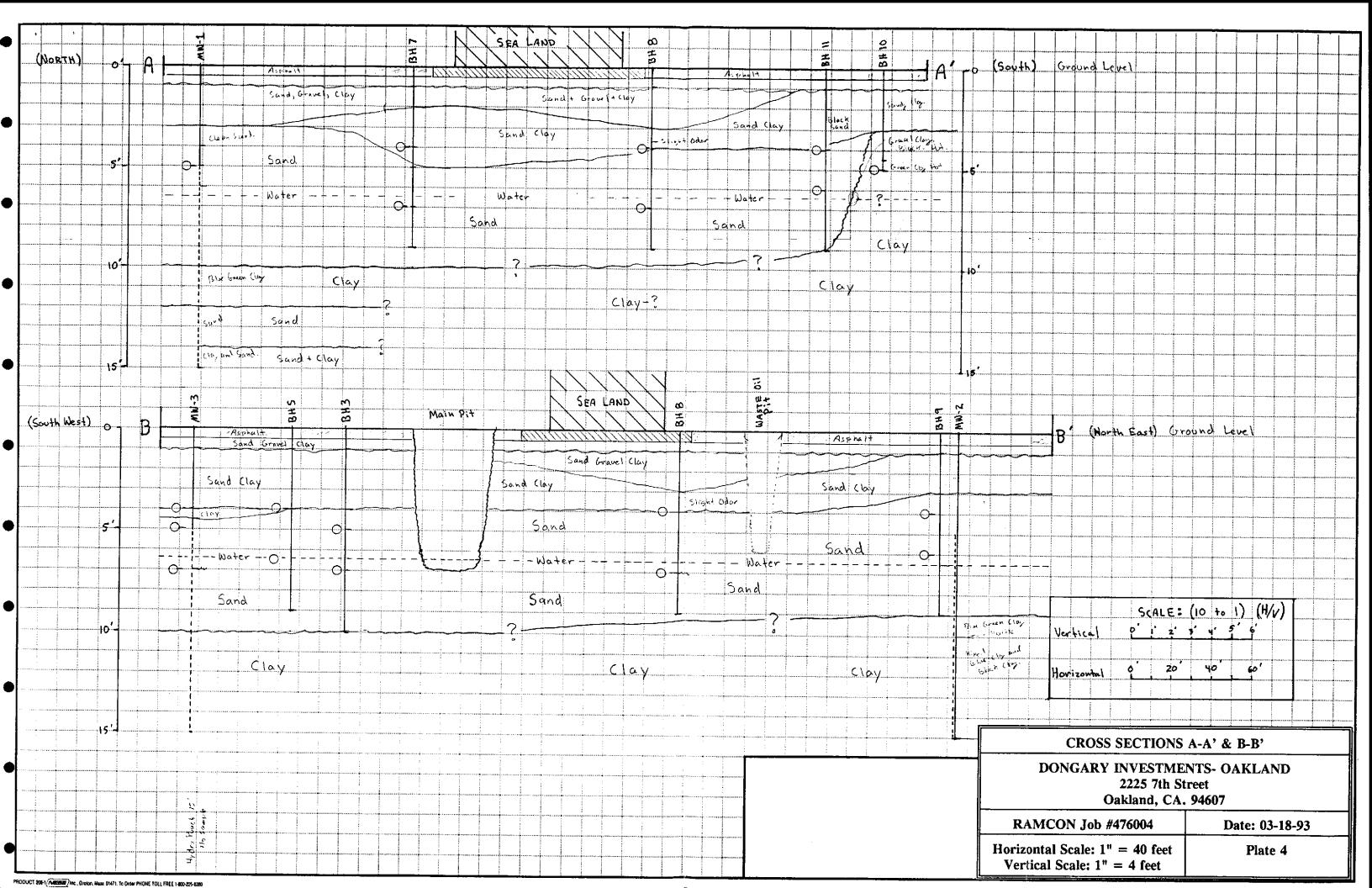
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GENERAL LOCATION MAP				
DONGARY INVESTMENTS- OAKLAND 2225 7th Street Oakland, CA. 94607				
RAMCON Job #467004	Date: 03-18-93			
Scale: 1" = 2,200 feet				







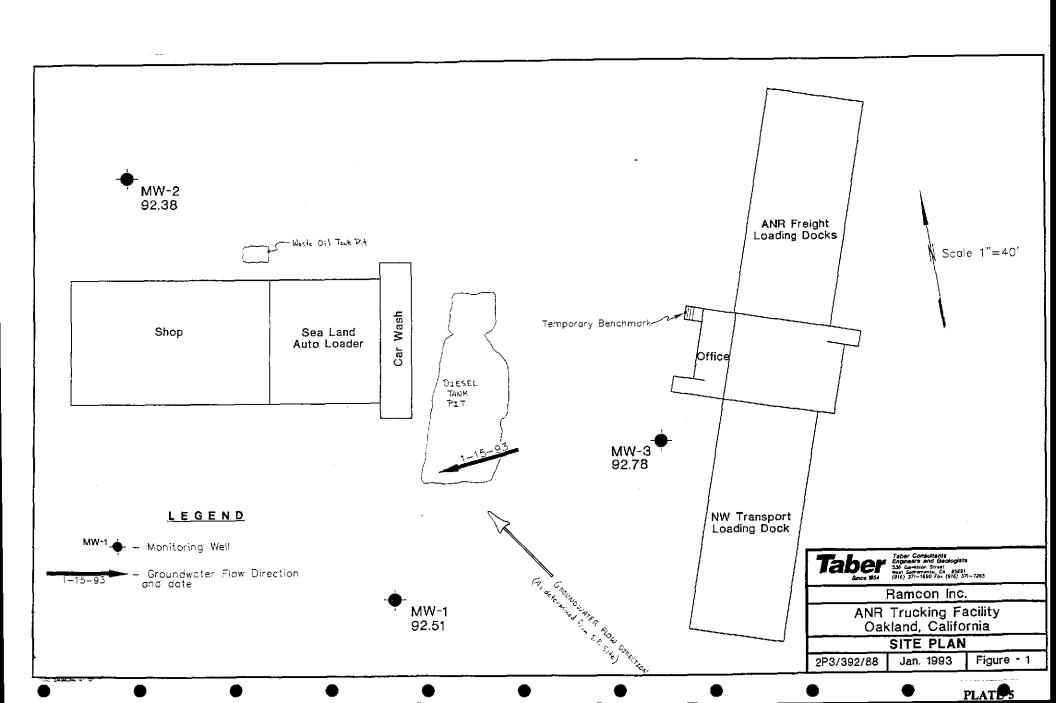


TABLE 1: ANALYTICAL SUMMARY, DONGARY INVESTMENTS- Oakland

Soil Samples from 16 Soil borings, drilled Dec. 14-16, 1992 WEST, Sample Logs #5555 & #5579

WEST, Sail	iple Logs #3333 & #33	779		ī	· · · · · · · · · · · · · · · · · · ·
Sample #	Location	TPH Diesel	TPH Motor Oil	BTEX	TPH Gasoline
BH1-5'	205' South & 40' East	42	77		<del></del>
BH2-5'	155' South & 50' East	ND	ND		
BH2-8'		ND	ND		
BH3-5'	100' South & 80' East	7,400	< 200		
BH4-4'	60' East	2,000	< 100		
BH4-6'		*	*	*	*
BH5-4'	100' South & 110' East	660	< 50		
ВН5-6.5'		* ,	*	*	*
BH6-4'	140' North & 85' East	ND	ND	ND	ND
ВН6-7		ND	ND	ND	ND
BH7-4'	15' South & 50' West	310	18		
BH7-7'		*	*	*	*
BH8-4'	5' North & 50' West	*	*	3/4	*
BH8-7'		*	*	*	*
BH9-4'	55' North & 170' West	ND	ND	ND	ND
BH9-6'		ND	53	ND	ND
BH10-5*	115' North & 75' West	1,800	ND		<b></b>
BH11-4'	85' North & 80' West	*	*	*	*
BH12-4'	160' North & 15' West	ND	ND	ND	ND
BH12-9,		ND	ND	ND	ND
BH13-4'	15' South & 137' East	ND	16	ND	ND
BH13-7'		ND	ND	ND	ND
BH14-4'	20' South & 125' West	ND	ND	ND	ND
BH14-7'		ND	ND	ND	ND
BH15-5'	115' South & 10' West	ND	ND	ND	ND
Reporting	Limits- mg/kg or ppm	(10 to	200 mg/kg)	(.005)	(10 mg/kg)

Note: All locations measured perpendicular from the North-East corner of the Car Wash.

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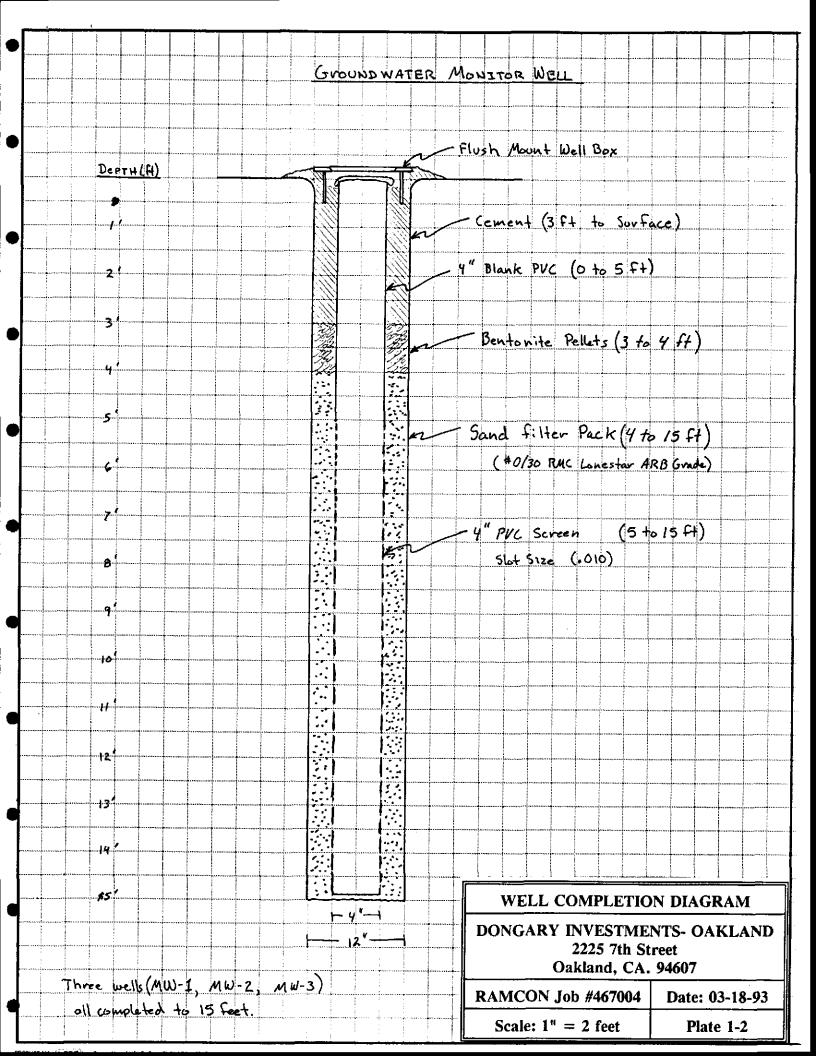
<sup>\* =</sup> No Analyses Run, Strong Diesel Odor and Free Product Observed in Soil Sample.

#### TABLE 2: ANALYTICAL SUMMARY, DONGARY INVESTMENTS- Oakland **RAMCON Job #476004** 3 Water Samples Collected from Monitor Wells MW-1, MW-2, & MW-3 Sampled 01-15-93 WEST, Sample Log #5701 Sample # Location TPH as TPH as Diesel Motor Oil B - T - E - X 115' South & 10' West ND ND MW-1 \* ND - ND - ND - ND ND ND MW-2 \* 53' North & 180' West ND - ND - ND - ND ND - ND - ND - ND ND ND MW-3 \* 15' South & 137' East (50 ug/L) Reporting Limits- ug/L or ppb (0.30 ug/L)

Note: All locations measured perpendicular from the North-East corner of the Car Wash.

Based on field observations and a gradient study; MW-1 and MW-3 are located up-gradient from the Diesel Pit. MW-2 is located down-gradient from the Diesel Pit and the Waste Oil Pit.

<sup>\* =</sup> Laboratory noted discrete peaks on the BTEX G.C. curve. Ran sample MW-1 for Volatile Organics (EPA method 624) and detected the following solvents:



BORE HOLE #: BH- I LOCATION: 205' N & 40'W DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92

APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

			<u></u>			
		SAN	MPLE	USCS	LITH	SOIL
	SAMPLE NUMBER	Ш	INTERVAL	CLASS	LOG	DESCRIPTIONS
DEPTH	SAP	TYPE	FROM & TO	02/00	230	
0	_					ASPHALT & GRAVEL BASE
				GC		
2				GC		RUSTY TAN GRAVEL & SAND. dry No Odor. Loose
4				SW		SAND, WELL SORTED.(5% CLAY.  Medium Grain, Dry. No Odor  Very Loose  GRAVEL. 1/2" diameter
6	BH1-5	cc	5 ft to 10 ft Rec. 18	SW		SAND. WELL SORTED. (5% CLAY  Medium to Fine Grain  Moist. Very Loose. No Odor
8						SAND & MINOR CLAY BEDS  Very Loose Wel. No Odor
	_					
	-					TOTAL DEPTH 10 FEET
12	-					

DONGARY INVEST OAKLAND RAMCON Job #476004

Logged by: J. Auchterlonie

BORE HOLE #: BH-2

LOCATION: 155' N & 50' W

DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92

APPROXIMATE SURFACE ELEVATION: 10 feet above seg level.

DOLL	ng locali	ons me	asurea perpendicula	r from the	N.E. COFNER	of the Sed Land Car Wash.
		SAN	1PLE	USCS	LITH	SOIL
DEPTH	SAMPLE NUMBER	TYPE	INTERVAL	CLASS	LOG	DESCRIPTIONS
뮘	S.S.	<u></u>	FROM & TO			
0				GC		ASPHALT & GRAVEL BASE
						CLAYEY SAND, Greenish Gray No Odor, Loose
2				GC		
	-					
4	-					And the second s
	- BH2-5	СС	5 fr to 10 fr			SAND. WELL SORTED. (5% CLAY
6	_		Rec. 36 <sup>-</sup>	SW		Medium to Fine Grain Moist, Very Loose, No Odor Clay Balls, Shell Fragments, & Burrows
	_					
8	_BH2-8	СС	Lost Core			
	_					
10	-	ļ				TOTAL DEPTH TO FEET
	<u> </u>					
12	-					

BORE HOLE #: BH- 3 LOCATION: 100' S & 80' E DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92 DATE COMPLETED: 12-14-92 APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

		1 1			
DEPTH	<del></del>	MPLE INTERVAL FROM & TO	USCS CLASS	LITH LOG	SOIL DESCRIPTIONS
0 -			GC		ASPHALT & GRAVEL BASE
2			GC		CLAEY SAND. (30%), Greenish Gray Poorly sorted. Moist, soft, No Odor
4 - - BH3	-5 CC		GC		CLAYEY SAND, Black, (30 % clay) poorly sorted. maist, strong diesel ador
6 -		5 ft to 10 ft Rec. 24	SW		SAND. WELL SORTED. (5% CLAY  Medium to Fine Grain  Moist. Very Loose.  Stronng Diesel Odor
- внз-	-7" CC				SAND & MINOR CLAY BEDS Very Loose Wet.
10-					TOTAL DEPTH 10 FEET
12-					

BORE HOLE #: BH-4 LOCATION: 60' due East DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92 DATE COMPLETED: 12-14-92 APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

			asarea perpendicale	ii HOM MIC	N.L. COME	of the Sea Earla Car Wash.
	SAMPLE			USCS	LITH	SOIL
DEPTH	SAMPLE	TYPE	INTERVAL FROM & TO	CLASS	LOG	DESCRIPTIONS
0						
				GC		ASPHALT & GRAVEL BASE
2				GC		CLAYEY SAND. Greenish Gray No Odor. Loose
4	- BH4-4	cc		SW		SAND. WELL SORTED. (5% CLAY  Medium to Fine Grain  Moist. Very Loose. No Odor
6	-BH4-6	CC	4 ft to 9 ft Rec. 24"	SW		SAND. WELL SORTED. (5% CLAY Medium to Fine Grain Moist. Very Loose. Strong Diesel Odor. slight saturation at 4' increasing to saturated-free diesel at 6'
8						
10	−BH4-IO*	SS				SAND & CLAY, alternating beds sand beds are fine grained and well sorted Clay bed is green & 6° thick
12						TOTAL DEPTH II FEET .

BORE HOLE #: BH-5 LOCATION: 100' S & 110' E DRILLED BY: TABER DRILLING

DATE STARTED: 12-14-92

APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

						of the Sed Edild Cd: Wdsi.
	SAMPLE			- USCS	LITH	SOIL
DEPTH	SAMPLE NUMBER	Ы	INTERVAL	CLASS	LOG	DESCRIPTIONS
	SA	TYPE	FROM & TO			
0				GC		ASPHALT & GRAVEL BASE
2				GC		SAND. SILTY & CLAYEY. (30% cłay). Dark Gray. soft. very slight diesel odor
4	- BH5-4	СС	4 ft to 9 ft			
6	BH5-6.5	cc	Rec. 30°	SW		SAND. WELL SORTED. <5% CLAY  Medium to Fine Grain  Moist. Very Loose.  Strong Diesel Odor. slight saturation at 4' increasing to saturated-free diesel at 6'
8						
10	-					TOTAL DEPTH 9 FEET
12						

BORE HOLE #: BH-6 LOCATION: 140' N & 85' E DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92 APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

				21 11 0111 1116	TALL, COLLIE	of the dea Edita Car Wash.
	SAMPLE		USCS	LITH	SOIL	
DEPTH	SAMPLE	TYPE	INTERVAL FROM & TO	CLASS	LOG	DESCRIPTIONS
0				GC		ASPHALT & GRAVEL BASE
2				GC		GRAVEL. SAND. and CLAY. Black. soft. moist. poorley sorted. Slight Diesel Odor.
4	- - BH6 - 4	СС		SC		SILT & CLAY, Black, soft, moist, Slight Diesel Odor
			CORE FROM 4 feet to 9 feet	SC		CLAYEY SAND, Blue Green, fine to medium grained, poorly sorted. Plastic, no odor or stain.
6	_		RECOVERED 45	SW		SAND. Clayey, Blue Green. medium grained, mottled texture, soft, No Odor or stain.
	-BH6-7	CC		СН		CLAY, Blue Green, plastic, moist, No Odor or Stain.
8	_		Lost Core			
	-					TOTAL DEPTH 9 FEET
	-					
12	-					

BORE HOLE #: BH-7 LOCATION: 15' S & 50' W DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92

APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

		SAN	1PLE	USCS	LITH	SOIL
王	SAMPLE NUMBER	Ш	INTERVAL	CLASS	LOG	DESCRIPTIONS
DEPTH	SAN	TYPE	FROM & TO			
0						ASPHALT & GRAVEL BASE
				GC	···	
2				GC		GRAVEL & CLAYEY SAND. Dark Gray. loose.  medium to coarse grained. poorly sorted.  No Odor or Stain.
				SC		CLAYEY SAND, Greenish Gray, loose, medium grained, poorly sorted, Very Slight Odor.
4	- BH7-4	CC			٠	CLAYEY SAND, Greenish Gray, medium grained,
	_		CORE FROM 4 feet to 9 feet	SC		poorly sorted, loose, Diesel Odor.
6	_		RECOVERED 36"	SW		SAND. Light Brown. medium grained, very loose. < 5 % clay. well sorted, Strong Diesel Odor Saturation increases with depth. Product flows from sand at 7 feet.
	- ВН7-7	CC	Lost Core			
8	-				,	
	-	;			-	TOTAL DEPTH 9 FEET
10	_					·
	-					
12						

# DONGARY INVEST OAKLAND RAMCON Job #476004

Logged by: J. Auchterlonie

BORE HOLE #: BH-8

LOCATION: 5' N & 50' W

DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92

APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

	SAMPLE			USCS	LITH	SOIL
DEPTH	SAMPLE NUMBER	TYPE	INTERVAL	CLASS	LOG	DESCRIPTIONS
	SA	<u></u>	FROM & TO			
0				GC		ASPHALT & GRAVEL BASE
2				SC		CLAYEY SAND. Greenish Gray. loose, medium grained. poorly sorted. No odor from 1-3 feet. Diesel Odor from 3 to 4 feet Strong Diesel Odor from 4 to 4.5 ft
4	- BH8-4	CC	CORE FROM			
6	- - B∺8-6	CC	4 feet to 9 feet RECOVERED 36	SW		SAND. Light Brown. medium grained. very loose. < 5 % clay. well sorted. Strong Diesel Odor Saturation increases with depth. Sand satruated with product at 5.5 feet.
8	_		Lost Core			
10					,	TOTAL DEPTH 9 FEET
12						

BORE HOLE #: BH-9 LOCATION: 55' N & 170' W DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92 APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

	J			1		of the Sed Edita Car Wash,
	SAMPLE		USCS	LITH	SOIL	
DEPTH	SAMPLE NUMBER	TYPE	INTERVAL FROM & TO	CLASS	LOG	DESCRIPTIONS
0	_					ASPHALT & GRAVEL BASE
	  -  -			GC		- NOT THE BOWN EL BASE
2				SC		SAND, and CLAY, Dark Greenish Gray, soit, maist, poorley sorted. No Diesel Gaor of Stain.
4	- - BH9-4	CC		SC		SAND & CLAY. Greenish Gray, soft, moist No Diesel Odor or Stain.
6			CORE FROM 4 feet to 9 feet RECOVERED 30	SW		SAND. Greenish Gray, fine to medium grained. < 5% clay. Well Sorted. Very Loose. No Diesel Odor or Stain.
	-BH9-6	CC	Lost Core			
8	-					TOTAL DEPTH 9 FEET
10	-	į				
12						!

BORE HOLE #: BH-IO LOCATION: II5' N & 75' W DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92 APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

SAMPLE  HENC-5  BIT SOIL  DESCRIPTIONS  CLASS LITH SOIL  DESCRIPTIONS  ASPHALT & GRAVEL BASE  SAND. CLAY, GRAVEL, Block most, soft.  Sight Dessel Octor.  GRAVEL, SAND. & CLAY, Block most, soft.  Green CLAY & Block frontered MiDSTONE or CHERT  Bord, most, Strong Cherel Octor.  REFUSAL # 5 ft  10-  12-				<b>,</b> 1			
INTERVAL  CLASS LOG DESCRIPTIONS  FROM & TO  GC  ASPHALT & GRAVEL BASE  SAND. CLAY, GRAVEL Block, most, soft, GC  GRAVEL SAND. & CLAY, Block, most, soft, gravel F diameter, Sight Diesel Odor.  GRAVEL SAND. & CLAY, Block, most, soft, gravel F diameter, Sight Diesel Odor.  CH/GC  Green CLAY & Block fractured MIDSTONE or CHERT Hord, most, Strong Diesel Octor.  REFUSAL * 5 ft  TOTAL DEPTH * FEET			SAMPLE		LISCS	      T -i	SOLL
ASPHALT & GRAVEL BASE  SAND. CLAY, GRAVEL, Block, moist, soft, Slight Diesel Odor.  GRAVEL, SAND. & CLAY, Block, moist, soft, grovel I diameter. Slight Diesel Odor.  Green CLAY & Block fractured MIJDSTONE or CHERT Hard, most. Strong Diesel Odor.  REFUSAL © 5 ft  TOTAL DEPTH ** FEET		1PLE 1BER	Щ	INTERVAL			
GC  ASPHALT & GRAVEL BIOCK, moist, soft.  GC  GRAVEL, SAND, & CLAY, GRAVEL, Block, moist, soft.  GC  GRAVEL, SAND, & CLAY, Block, moist, soft.  gravel I' diameter. Slight Diesel Odor.  Green CLAY & Block fractured MUDSTONE or CHERT Hord, moist, Strong Diesel Odor.  REFUSAL @ 5 ft.  TOTAL DEPTH ** FEET		SAS	1	FROM & TO	02/100		
SAND. CLAY. GRAVEL. Block. moist. soft.  Slight Diesel Odor.  GRAVEL, SAND. & CLAY. Block. moist. soft. gravel F dometer. Slight Diesel Odor.  Green CLAY & Block froctured MUDSTONE or CHERT Hord. moist. Strong Diesel Odor.  REFUSAL © 5 ft  REFUSAL © 5 ft  TOTAL DEPTH * FEET	0						ASPHALT & GRAVEL BASE
GC = claying in et s  GRAVEL, SAND. & CLAY, Black, moist, seft, gravel F diameter. Slight Diesel Odor.  Green CLAY & Black fractured MUDSTONE or CHERT Hord, moist. Strong Diesel Odor.  REFUSAL * 5 ft  REFUSAL * 5 ft  TOTAL DEPTH ** FEET		_			GC		SAND CLAY GRAVEL Black most soft
GC  GRAVEL, SAND, & CLAY, Black moist, soft, gravel I' diameter. Slight Diesel Odor.  CH/GC  Green CLAY, & Black fractured MUDSTONE or CHERT Hard, moist. Strong Diesel Odor.  REFUSAL © 5 ft  TOTAL DEPTH ® FEET					GC	c chayen gra	St. 1 . D. 1 . O. 1
GC gravel \(\Gamma\) diameter. Slight Diesel Odor.  CH/GC Green CLAY & Black fractured MUDSTONE or CHERT Hand, moist. Strong Diesel Odor.  REFUSAL © 5 ft  TOTAL DEPTH \(\frac{1}{2}\) FEET	~						
CH/GC  Green CLAY & Black fractured MUDSTONE or CHERT Hand, moist. Strong Diesel Odor.  REFUSAL © 5 ft  TOTAL DEPTH ** FEET					GC	<u> </u>	
BHO-5 Bit  REFUSAL © 5 ft  TOTAL DEPTH FEET	4	_				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
8 -		-BHIO-5	Bit		CH/GC		
8 -				REFUSAL @ 5 ft			TOTAL DEPTH 🏖 FEET
	0	-					
		-					
	8	-					
		_					
	10	-					
12-		-					
	12	-					

BORE HOLE #: BH- II
LOCATION: 85' N & 80' W
DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-15-92 APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

		SAN	1PLE	USCS	LITH	SOIL
TH	SAMPLE	ᆔ	INTERVAL	CLASS	LOG	DESCRIPTIONS
DEPTH	SAS	TYPE	FROM & TO			
0						ASPHALT & GRAVEL BASE
				GC		
2				SC		CLAYEY SAND, Light Green, Loose, Moist, medium to coarse grained, poorly sorted. No Odor or Stain.
	-					CLAYEY SAND. Blackish Gray, loose. Moist. medium grained, poorly sorted, No Diesel Odor.
4	       BH   - 4	CC		SC		
	511 11 7		CORE FROM 4 feet to 9 feet	SC		CLAYEY SAND. Greenish Gray, medium grained, poorly sorted, loose, Diesel Odor.
6	~BH ∥ -6	cc	RECOVERED 27*	SW		SAND. Greeish Gray. medium grained, <u>very loose.</u> < 5 % clay. well sorted. Strong Diesel Odor Saturation increases with depth.
			Lost Core			Product flows from sand at 6 feet.
8						
	_					TOTAL DEPTH 9 FEET
	  -					
12						

BORE HOLE #: BH- 12 LOCATION: 160' N & 15' W DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92 DATE COMPLETED: 12-16-92 APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

			· · ·			
	SAMPLE			USCS	LITH	SOIL
工	SAMPLE NUMBER	<u>u</u>	INTERVAL	CLASS	LOG	DESCRIPTIONS
DEPTH	SAF	TYPE	FROM & TO			
0						ASPHALT & GRAVEL BASE
				GC	•	
2	_			SC		CLAYEY SAND. Light Green. Loose. Moist. medium to coarse grained, poorly sorted. No Odor or Stain.
4	- - 8HI2-4'	CC		СН		CLAY. Green. stiff, moist, No Diesel Odor or Stain.
	-		CORE FROM 4 TO 9 Feet	SM		SAND. SiLTY & CLAYEY. Green, Stiff, Moist. Poorly Sorted. No Diesel Odor or Stain.
6			Recover 5 Feet		••••	1 Ches
	– 8HI2-7°	cc		SC		CLAYEY SAND. Green. Moist. Stiff, Poorly Sorted.  No Diesel Odor or Stain. 2 well sorted sand beds 2" & 3" thick.
8	_					Boring remained opened overnight and no water Entered boring.
	- BH(2-9°∶	CC				TOTAL DEPTH 9 FEET
10	-					
12	_					:

BORE HOLE #: BH- 13, (MW-3) LOCATION: 15' S & 137' E DRILLED BY: TABER DRILLING

DATE STARTED: 12-16-92

APPROXIMATE SURFACE ELEVATION: 10 feet above seg level.

	SAMPLE			USCS	LITH	SOIL
DEPTH	SAMPLE NUMBER	TYPE	INTERVAL FROM & TO	CLASS	LOG	DESCRIPTIONS
0			77	GC		ASPHALT & GRAVEL BASE
4	- ВНЗ-4° ВНЗ-5°	cc cc	Core from 4 to 9 ft Recover 36"	S C ch SW		CLAYEY SAND, Light Green, Loose, Moist, medium to coarse grained, poorly sorted, No Odor or Stain,  CLAY, Green, stiff, moist, No Diesel Odor or Stain  SAND, Light Brown, dry to moist, loose, well sorted fine to medium grained, No Diesel Odor.
8	8HI3-7' -	CC	LOST CORE 2 feet			Appears water saturated at 6 feet.
12	-			CL/SC	j	? SAND/CLAY contact estimated  CLAY. Green & Black. soft. plactic. moist to wet.  No Diesel Odor or Stain.  CLAY has minor amounts of interbedded SAND, and  CLAYEY SAND.
16	-					TOTAL DEPTH 15 feet.
20	-		BLANK from BENTONITE	m 5 to 15 feet O to 5 feet from 3 to 4 fe	eet	NTOR WELL.
20	-		CEMENT fro  Attempt to recover	m 0 to 3 feet hydropunch wa		o 14 failed.
24	-			, ,		

BORE HOLE #: BH-14

LOCATION: 20' S & 125' W

DRILLED BY: TABER DRILLING

DATE STARTED: 12-15-92

APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

	1	10/13 1116		T TOM ME	N.E. corner	of the Sea Land Car Wash.
	SAMPLE		MPLE	USCS	LITH	SOIL
DEPTH	SAMPLE NUMBER		INTERVAL	CLASS	LOG	DESCRIPTIONS
	SA	TYPE	FROM & TO			
0				GC		ASPHALT & GRAVEL BASE
2				SC		SAND. CLAY, & GRAVEL. Light Brownish Green. moist. loose. poorley sorted. No Diesel Odor or Stain.
4	- -BHI4-4′	CC	Core from 4 to 9 ft	SW		SAND. Light Brown. (15% Clay, soft, Dry. Weil Scried No Diesel Odor or Stain.
			Recover 36	SW		SAND. Greenish Gray, fine to medium grained.  < 5% clay. Well Sorted. Very Loose,  No Diesel Odor or Stain.
6	_					Sand is dry from 4 to 5 feet and Saturated from 6 to 7 feet.
8	- BHI4-7'	СС	Lost Core 2 ft			
10	-					TOTAL DEPTH 9 FEET
12	-					

BORE HOLE #: BH- 15, (MW-1) LOCATION: 115' S & 10' W DRILLED BY: TABER DRILLING

DATE STARTED: 12-16-92

APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

	SAMPLE		USCS LITH		SOIL	
DEPTH	SAMPLE NUMBER	TYPE	INTERVAL FROM & TO	USCS CLASS	LOG	DESCRIPTIONS
0	-			GC SC		ASPHALT & GRAVEL BASE  CLAYEY SAND & GRAVEL. Rusty Brown. Loose.  moist, medium to coarse grained.  Poorly sorted, No Odor or Stain.
8	8HI5-5'	СС	Core from 4 to 9 ft Recover 24" LOST CORE	SW		SAND. Light Brown, dry to moist, loose, well sorted fine to medium grained, No Diesel Odor.  Dry © 4 ft. Appears water saturated at 5 ft
12	_			CL/SC		? SAND/CLAY contact estimated CLAY. Green & Black, soft, plactic, moist to wet. No Diesel Odor or Stain, CLAY has minor amounts of interbedded SAND, and CLAYEY SAND.
16	-		BLANK from BENTONITE SAND filter	TO 4° GROUN m 5 to 15 feet O to 5 feet from 3 to 4 fe pack from 4 to im 0 to 3 feet	eet o 15 feet	TOTAL DEPTH IS feet.
24	-					

BORE HOLE #: BH- 16. (MW-2) LOCATION: 55' N & 180' W DRILLED BY: TABER DRILLING

DATE STARTED: 12-16-92 DATE COMPLETED: 12-16-92 APPROXIMATE SURFACE ELEVATION: 10 feet above sea level.

ļ	SAMPLE			USCS	LITH	SOIL
DEPTH	SAMPLE NUMBER	TYPE	INTERVAL FROM & TO	CLASS	LOG	DESCRIPTIONS
0	-		NO SAMPLES TAKEN	GC SC		ASPHALT & GRAVEL BASE  CLAYEY SAND. Dark Greenish Gray. Soft.  moist. medium to coarse grained.  Poorly sorted. No Odor or Stain.
8	-		See BH9 for core & samples.	SW		SAND. Greenish Gray, loose, well sorted, (5% Clay, fine to medium grained. No Diesel Odor, Dry @ 4 ft. Appears water saturated at 5 ft
12	-			CL/SC		? SAND/CLAY contact estimated CLAY. Green & Black. soft. plactic. moist to wet. No Diesel Odor or Stain. CLAY has minor amounts of interbedded SAND, and CLAYEY SAND.
16	-		BORING CONVERTED SCREEN from BLANK from	n 5 to 15 feet	DWATER MONI	TOTAL DEPTH IS feet.  TOR WELL.
20			SAND filter p	from 3 to 4 fe back from 4 to m 0 to 3 feet bet West of BH	15 feet	
24			Since BH9 was	cored and samp	oled: no sample:	s were collected from BHI6.



536 Galveston Street West Sacramento, CA 95691 (916) 371-1690 (707) 575-1568 Fax (916) 371-7265

January 26, 1993

2P3/392/94

Ramcon, Inc.

RECEIVED JAN 2 7 1993

3751 Commerce Drive West Sacramento, California 95691

Attention:

Mr. Michael Ramos

Subject:

**Environmental Services** 

ANR Trucking Facility Oakland, California

Gentlemen:

This letter presents the results of environmental services performed by Taber Consultants at the above site. These services were performed persuant to our proposal dated December 31, 1992 as authorized by your office.

Monitoring Wells MW-1, MW-2 and MW-3 were developed on January 8, 1993. Development was performed by mechanical surging and pumping using a 2-inch QED well development pump. Due to mechanical difficulties with the pump much of the development water was removed using a new, disposable polyethelyene bailer for each well. Development water was collected and retained on site in 55-gallon drums. Development proceeded until the water yield was clear and relatively free of suspended material. Due to an obstruction in its screened section, well MW-3 was only developed to a depth approximately 9 feet below the casing top.

The top of casing elevation for each well was surveyed relative to a temporary benchmark established at the center of the top step of the office building entry. An elevation of 100.00 feet was assumed for the benchmark. The surved elevations are presented on Table-1, below.

Depth to groundwater from the top of casing was measured in each well using a Solonist water meter and the groundwater elevation calculated based upon the survey elevations. Results of the measurements are presented in Table-1, below. Based upon the surveyed elevations and the north arrow direction shown on the Site Plan provided to us by your office, a groundwater flow direction of S85°W was calculated. The groundwater

Ramcon, Inc. January 26, 1993 Page 2



gradient was calculated to be 0.0014 feet per foot. The well locations, groundwater elevations and groundwater flow direction are shown on Figure-1, which was adapted from your site plan.

	TABLE 1		
	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>
Top of Casing Elevation	97.72	98.59	99.22
Groundwater Depth	5.21	6.21	6.44
Groundwater Elevation	92.51	92.38	92.78
	(+,13')	(0)	(+,40')

Note: All elevations in feet relative to temporary benchmark assumed elevation of 100.00 ft.

Groundwater samples for analytical testing were collected from the wells on January 15, 1993. Prior to sampling, each monitoring well was purged by evacuating a minimum of three well-casing volumes of water using a disposable bailer. During purging, groundwater was monitored for pH, electrical conductivity and temperature. Purged water was considered representative of fresh formation water when (1) the pH stabilized within  $\pm 0.2$  pH units, (2) electrical conductivity stabilized with  $\pm 5\%$  and (3) temperature was within  $\pm 1^{\circ}$ C for three consecutive field measurements.

Following purging, samples were collected with a new disposable polyethylene bailer for each well and decanted into one amber liter bottle and two 45 ml VOA vials. All samples collected in the field were immediately sealed, labeled and placed in an ice chest cooled to approximately 4°C, and transported to West Laboratory in Davis, California using proper chain-of-custody protocol.

The analyses requested for each sample included total petroleum hydrocarbons as diesel by Method 8015 (modified) and BTE & X by Method 8020. Results of the water analytical tests are to be forwarded directly to your office.

Ramcon, Inc. January 26, 1993 Page 3



The opportunity to be of continued service is sincerely appreciated. If you have any questions regarding the above, do not hesitate to call us.

Very truly yours,

TABER CONSULTANTS

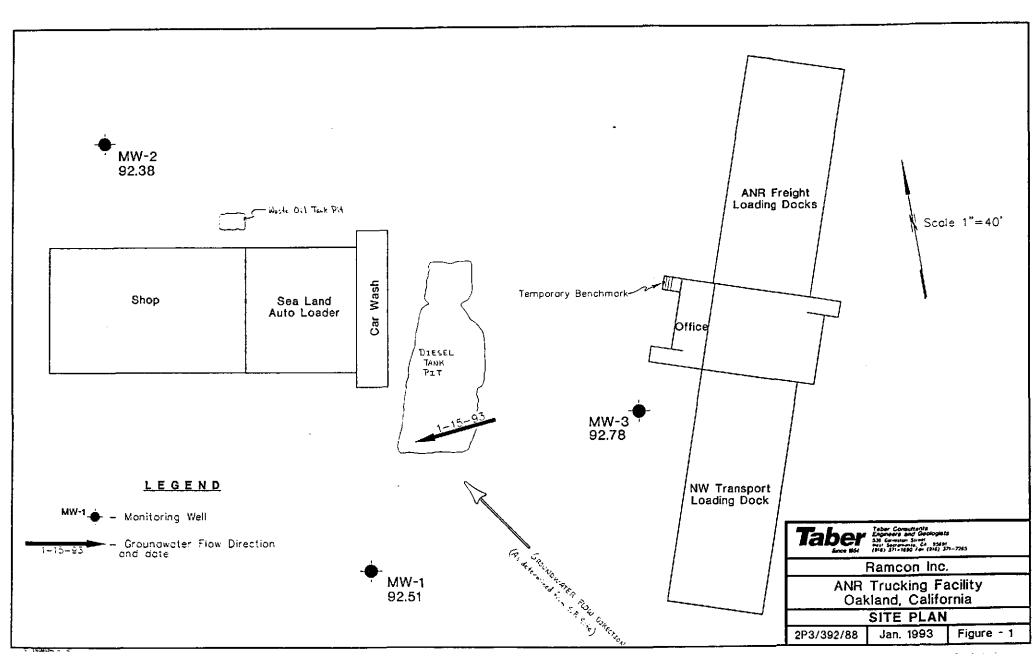
Thomas M. Skaug

Senior Geologist

Dave A. Diem

Environmental Manager

Distribution: Addressee (3)





536 Galveston Street West Sacramento, CA 95691 (916) 371-1690 (707) 575-1568 Fax (916) 371-7265

January 21, 1993

Ramcon
P.O. Box 1026
3751 Commerce Drive
West Sacramento, California 95691

RECEIVED JAN 2 5 1993

Attention:

Mr. Jaff Auchterlonie

Subject:

Laboratory Test Results

Oakland Site

2T2/393/04

## Gentlemen:

Transmitted herewith are results of laboratory tests and permeability estimate per your request of December 22, 1992. The sample received was less than a full tube volume (disturbed). Laboratory tests include dry unit weight, moisture content, sieve analysis, specific gravity and porosity (calculated on the basis of full tube volume where applicable).

As requested, an <u>estimate</u> of permeability has been made for the sample submitted. The following estimate is based on Hazen's formula (which correlates permeability to grain size for clean sands), not on actual laboratory permeability testing. Permeability of the soil sample calculated on the basis of laboratory grain size analysis (attached) and the Hazen's formula is estimated at  $1 \times 10^{-2}$  cm/sec to  $1.5 \times 10^{-2}$  cm/sec. Permeability of actual on-site soils may vary significantly depending on density, fines content and/or other factors.

If you have any questions regarding the foregoing, please call. We appreciate this opportunity to be of service.

I've to Medium Grained

Very truly yours,

TABER CONSULTANTS

Ralph J. Fisher

RJF/GDA/

Attachment: "Laboratory Test Results"

Distribution: Client (4)

Taber Consultants
Engineers and Geologists

## 7

## **GRAIN SIZE ANALYSIS**

Client		on		Dat	е	Job	No. 2T2/3	93/04
	le No.		1.92" Brass					
	Opening	Sieve Size	% Passing	% Passing	% Passing	% Passing	% Passing	% Passing
Inches	m.m.	<del> </del>	<u> </u>	<u> </u>			<u> </u>	
4.00	101.6	4*						
3.00	76.2	3*						ļ
2.50	63.5	2 1/2*						
2.00	50.8	2*	· · · · · · · · · · · · · · · · · · ·			! 		
1.50	38.1	1 1/2*						
1.00	25.4	1*						
.750	19.1	3/4"						
.500	12.7	1/2*						
.375	9.52	3/8*						
.312	7.93	5/16"						
.250	6.35	3						
.187	4.67	4						
.157	4.00	5						
.132	3.36	6						
.093	2.38	8						
.078	2.00	10	100	·				
.066	1.68	12						
.049	1.19	16		> 4 3/3				
.033	.84	20						-
.023	.59	30						
.016	.42	40	96					
.011	.29	50		)				
.009	.25	60		>62°10				
.008	.21	70						-
.007	.17	80	34	<del>)  </del>				
.006	.15	100	7-	30%				
.004	.10	140		7 "				
	.07	200	4	<del>)  </del>				
8200	i Equival			7 2 %				
Sample			365.9					
		3	202.2	<u></u>				

Additional Laboratory Tests

(62 % of Sample 15 (.21 + 6.17 mm)

Dry Unit Weight =  $89.6 \#/ft^3$  Specific Gravity = 2.66Moisture Content = 10.7% Porosity = .458



## ENTERED DEC 2 8 1992

December 17, 1992 Sample Log 5555

Jaff Auchterlonie Ramcon P.O. BOX 1026 West Sacramento, CA 95691

Subject: Analytical Results for 6 Soil Samples

Identified as: Project # 476003 (Dongary Investments-Oakland)

Received: 12/14/92 Purchase Order: 6982

Dear Mr. Auchterlonie:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on December 17, 1992 and describes procedures used to analyze the samples.

Sample(s) were received in brass sleeves that were sealed with PTFE sheets and plastic endcaps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

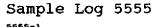
Sample(s) were analyzed using the following method(s):

"TPH as Diesel, Motor Oil, Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us at 916-757-4650 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Stewart Podolsky Senior Chemist





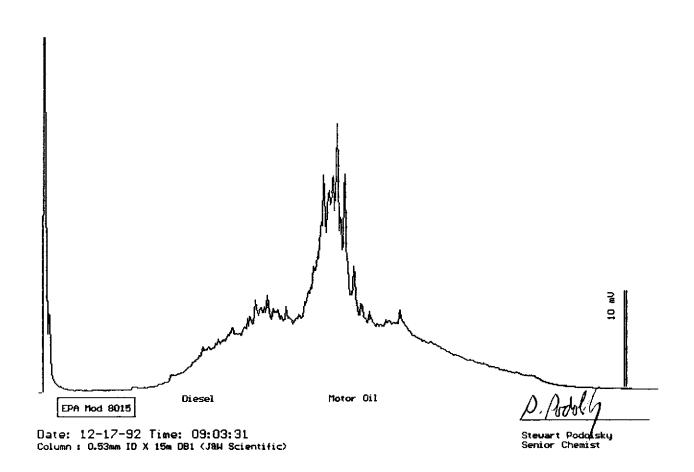
Sample: BH1-5'

From : Project # 476003 (Dongary Investments-Oakland)

Sampled: 12/14/92 Extracted: 12/15/92

Dilution: 1:1 QC Batch: 8066D

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel TPH as Motor Oil	(10) (10)	42 77





Sample Log 5555 ssss-2

Sample: BH2-5'

From : Project # 476003 (Dongary Investments-Oakland)

Sampled: 12/14/92 Extracted: 12/15/92

Dilution: 1:1 QC Batch: 7096A

Matrix : Soil

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10

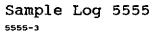
Date: 12-16-92 Time: 05:12:43 Column: 0.53mm ID X 15m DB1 (J&W Scientific)

EPA Mod 8015

Stewart Podolsky Senior Chemist

D. Polly

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Sample: BH2-8'

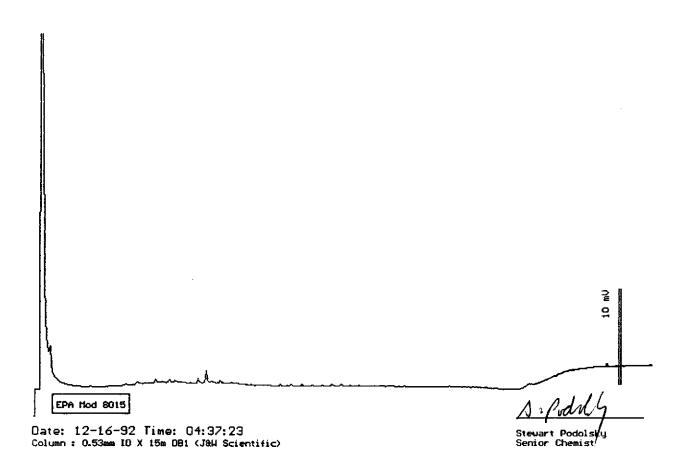
From : Project # 476003 (Dongary Investments-Oakland)

Sampled: 12/14/92 Extracted: 12/15/92 Dilution: 1:1

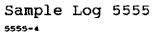
Dilution: 1:1 QC Batch: 7096A

Matrix : Soil

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10



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Sample: BH3-5'

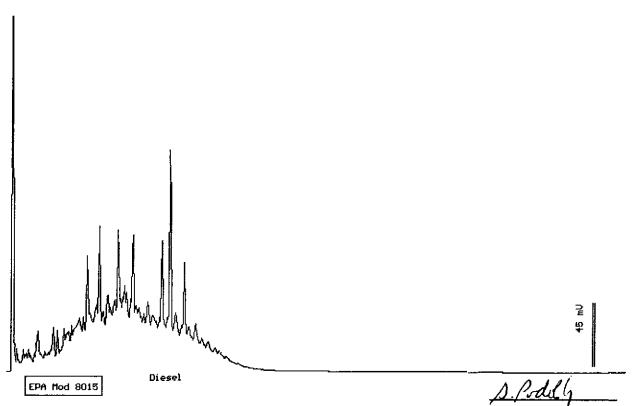
From : Project # 476003 (Dongary Investments-Oakland)

Sampled: 12/14/92 Extracted: 12/15/92

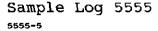
Dilution: 1:20 QC Batch: 8066C

Matrix : Soil

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel TPH as Motor Oil	(200) (200)	7400 <200



Date: 12-16-92 Time: 15:39:31 Column: 0.53mm ID X 15m DB1 (J&# Scientific) Stewart Podolsky Senior Chemist





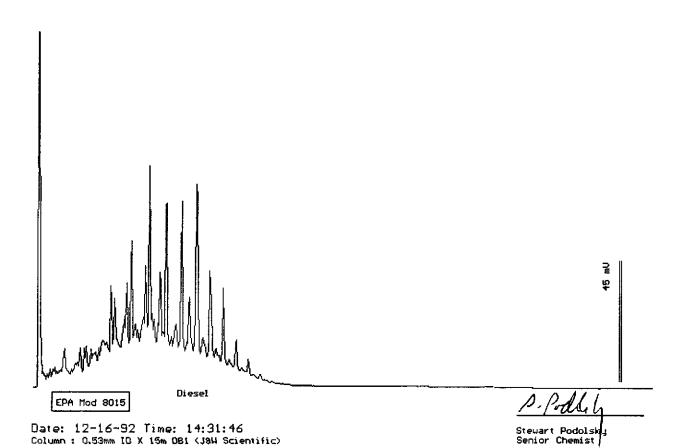
Sample: BH4-4'

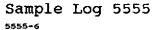
From : Project # 476003 (Dongary Investments-Oakland)

Sampled: 12/14/92 Extracted: 12/15/92

Dilution: 1:10 QC Batch: 8066C

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel TPH as Motor Oil	(100) (100)	2000 <100







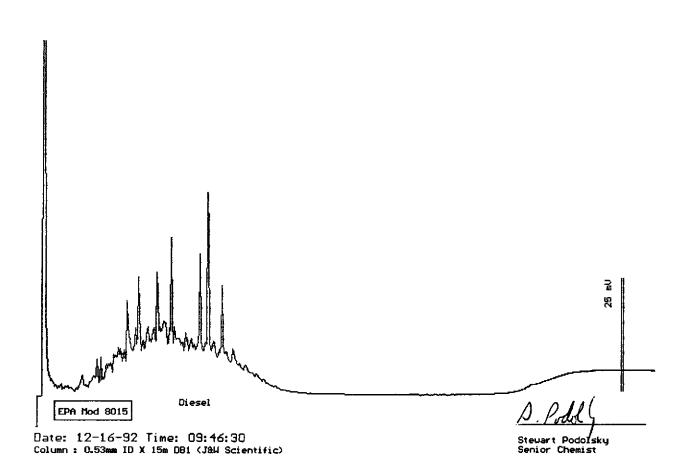
Sample: BH5-4'

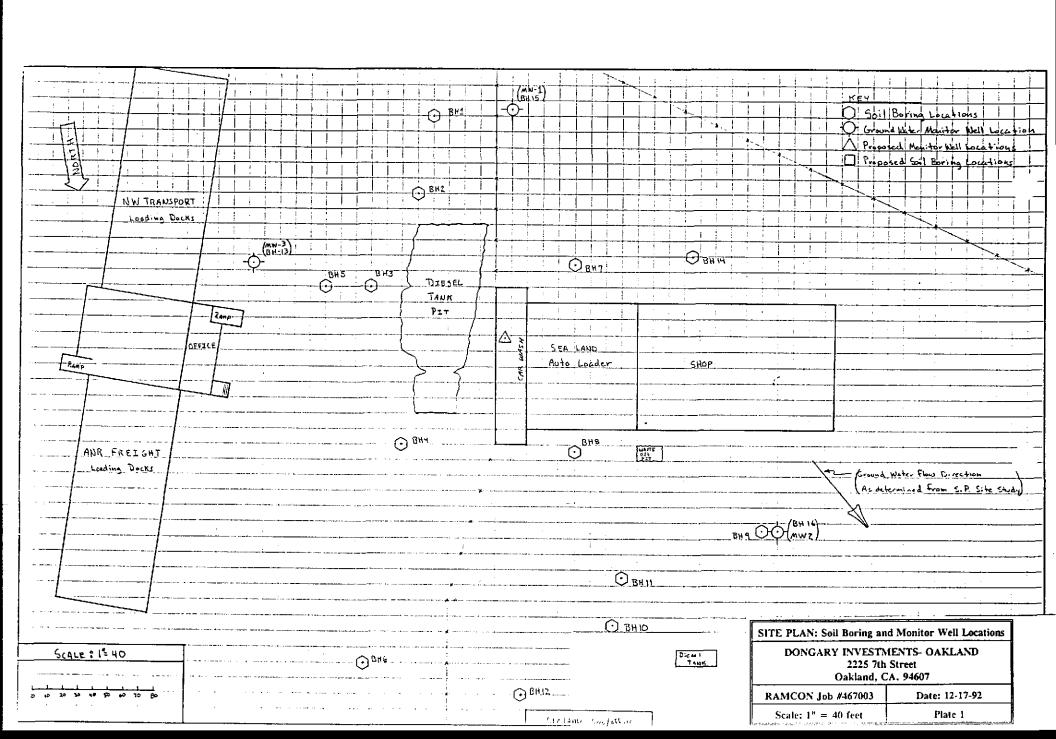
From : Project # 476003 (Dongary Investments-Oakland) Sampled : 12/14/92

Sampled: 12/14/92 Extracted: 12/15/92 Dilution: 1:5

Dilution: 1:5 QC Batch: 7096A

Parameter	(MDL) mg/kg	Measured Value =g/kg
TPH as Diesel	(50)	6 <b>60</b>
TPH as Motor Oil	(50)	<50





Western Environmen Science & Technolog		1046 Davi	Olive s, CA	Drive, Sui 95616	ite 3	i i	FAX ( LAB	#: 91	6-75 6-75 6-75	3-6	091		(	СН	IAI	N-(	OF	-C	JS	ТО	DΥ	R	EC	OF	Q F	1A	ΝD	Αl	NA	LY	SIS	R	EQ	UES	ST
Project Manager Auchter	Ramco rlonie	n		Ph	one #		72-	-75	35						,	AN.	AL	YS	s I	REC	)U	ES	Γ			•									T.
Company/Addre		Commer			X #:	3	372-	-42	09												T						N.E.							П	
Project Number: 476 003		P.O.#;	 82	Pro	oject I	Van	ne: โ	Dong	ary est	we NE	nts		BTEX/TPH as Gasoline (602/8020/8015)		[E	B/E,F,C)						:			tibility		als								(24 hr)
Project Location:	ZZZS Caklano	7th st. 4, Ca. 94	607	Sa	mpler	`,Siç	gnatu	ire:					oline (602/	(8015)	5520 B/E,	Total Oil & Grease IR (5520 B/E,F,C)	assay			sticides	Se	EPA 624/8240			Reactivity, Corrosivity, Ignitibility		EPA - Priority Pollutant Metals	39.2)							RUSH SERVICE (12 hr) or (24 hr)
Sample	Sam	pling		ntainer			erve		M	lat	rix 	2/8020)	H as Gas	iesel/Oil	Total Oil & Grease (5520 l	& Grease	r Fish Bio	8010	8020	ROBO - Pe	/8080-PCF	8240	8270	CLEAD	ty, Corros	Metals	ority Poll	LEAD(7420/7421/239.2)	b, Zn, Ni						ERVICE
ID	DATE	TIME	VOA	1L GLASS	HCI	S L	NONE		WATER	SOIL		BTEX (602/8020)	BTEX/TP	TPH as D	Total Oil	Total Oil	96 - Hou	EPA 601	EPA 602/	EPA 608/	EPA 608	EPA 624/	EPA 625/	ORGANIC	Reactivit	CAM - 17	EPA - Pri	LEAD(74:	Cd, Cr, Pb, Zn, Ni		į				RUSH S
BH1-5'	12-14-92	10:33 AM	1	117		1				7		$\vdash$	T	1	-			1	$\dagger$		t	╁	<u> </u>	<del> </del> -	$\vdash$	$\vdash$					-		<del> </del>	$\forall$	$\dashv$
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B1+2-8'	ч	12:36	1	1		7	1			1	1			7	П			7	1	1	$\dagger$									$\exists$	_	$\dagger$	<del> </del>	$\Box$	$\dashv$
BH3-5'	પ	120 PM	V	111	1	1	1			1	<u> </u>	1		1				T	_			T	T		<del>                                     </del>					T	$\dagger$	†	1		1
BH3-7'	L(	1:22Pm	V	1 1 1		1				1	Hold			_					1		T	T									1	$\dagger$	1		十
BH4-4'	fc	2:10 PM	V			V	/			1			_	V				_	1		T				1-							<del> </del>		$\Box$	$\uparrow$
BH4-7'	¥	2:11PM	V			V	1			1	Hola	d							1						Γ					1	-	$\dagger$			1
BH5-41	t (	3:11PA	√			1				1				1																1	1	1	1		+
BH5-6%'	ų	3:12 PM	V			V				<b>V</b>	HOW	V	,								-	Ţ									_	十	1.		$\uparrow$
BH4-11"		Z:15 PA	1		-	1				/	Hole	d					$\dashv$											_				-			1
Relinquished b	m <sub>2</sub>	Į.	ate /-92	Time 3:38թդ	1 .	cei	ived	by:				<u> </u>						Re	ma	_l_ ırks	: ;	<u> </u> 		1+cl		 رنور	<u> </u>	+h	e se	<u> </u>	am,	ا واون	  mi	3 -	<u> </u>

Received by:

Received by Laboratory:

Date Time

Date Time

12-14-92 18:02

Relinquished by

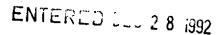
Relinquished by

TAT

RUSH SERVICE (12 hr) or (24 hr)
EXPEDITED SERVICE (48 hr) or (1 wk)
STANDARD SERVICE (2wk)

BHZ-7' Accepted No samples BHZ-81 OR BHY-7'
BHY-6' Accepted Labeled 12/14/12

BILL TO: RAMCON





December 22, 1992 Sample Log 5579

Jaff Auchterlonie Ramcon P.O. BOX 1026 West Sacramento, CA 95691

Subject: Analytical Results for 13 Soil Samples

Identified as: Project # 476003 (Dongary Invest., Oakland)

Received: 12/17/92 Purchase Order: 6991

Dear Mr. Auchterlonie:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on December 22, 1992 and describes procedures used to analyze the samples.

Sample(s) were received in brass sleeves that were sealed with PTFE sheets and plastic endcaps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

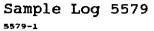
Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 8020/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"TPH as Diesel, Motor Oil, Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us at 916-757-4650 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Stewart Podolsky Senior Chemist





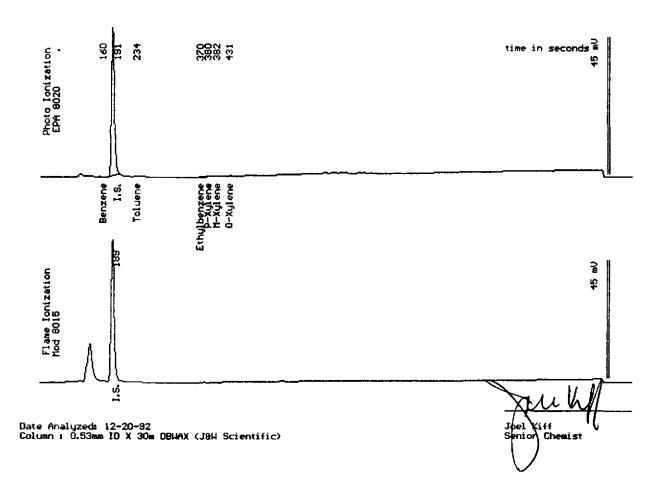
Sample: BH6-4'

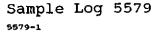
From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value =g/kg						
Benzene	(.0050)	<.0050						
Toluene	(.0050)	<.0050						
Ethylbenzene	(.0050)	<.0050						
Total Xylenes	(.0050)	<.0050						
TPH as Gasoline	(.50)	<.50						







Sample: BH6-4'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067D

Matrix : Soil

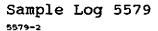
Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10

EPA Hod 8015

Date: 12-22-92 Time: 01:36:14
Column: 0.53mm ID X 15m DB1 (78H Scientific)

Stewart Podolsky Senior Chemist

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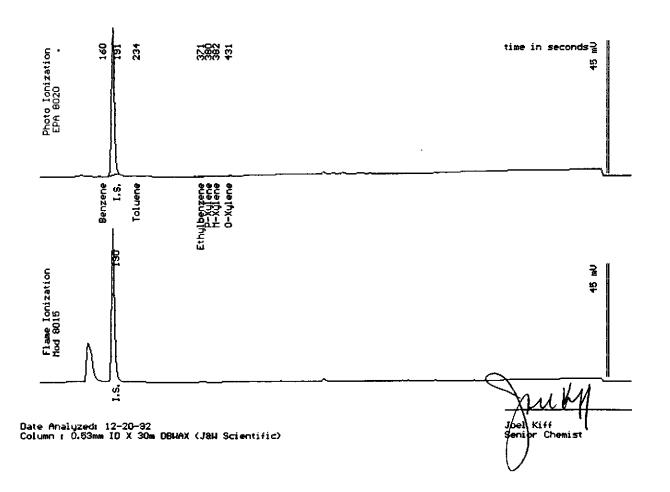
Sample: BH6-7'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value =g/kg
		<del></del>
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50





Sample Log 5579

Sample: BH6-7'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067D

Matrix : Soil

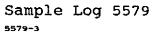
Parameter	(MDL) mg/kg	Measured Value ==g/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10

Date: 12-22-92 Time: 02:11:42 Column: 0.53mm ID X 15m DB1 (J&W Scientific)

EPA Mod 8015

Stewart Podolsky Senior Chemist

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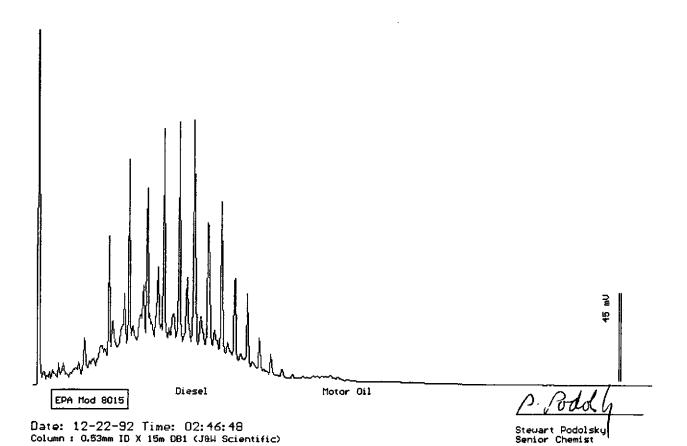
Sample: BH7-4'

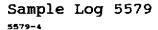
From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067D

Parameter	(MDL) mag/keg	Measured Value mg/kg
TPH as Diesel	(10)	310
TPH as Motor Oil	(10)	18







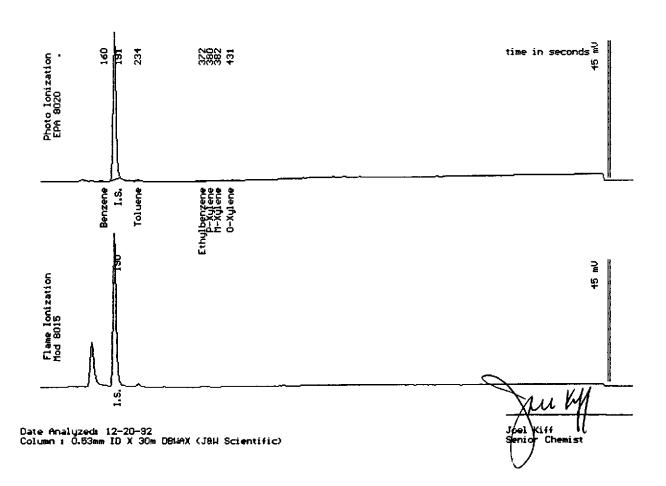
Sample: BH9-4'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50





Sample Log 5579

Sample: BH9-4'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067D

Matrix : Soil

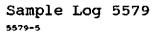
Parameter	(MDL) mg/kg	Measured Value =g/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10

EPA Mod 8015

Date: 12-22-92 Time: 03:21:16 Column: 0.53mm ID X 15m DB1 (J84 Scientific)

Stewart Podolsky Senior Chemist

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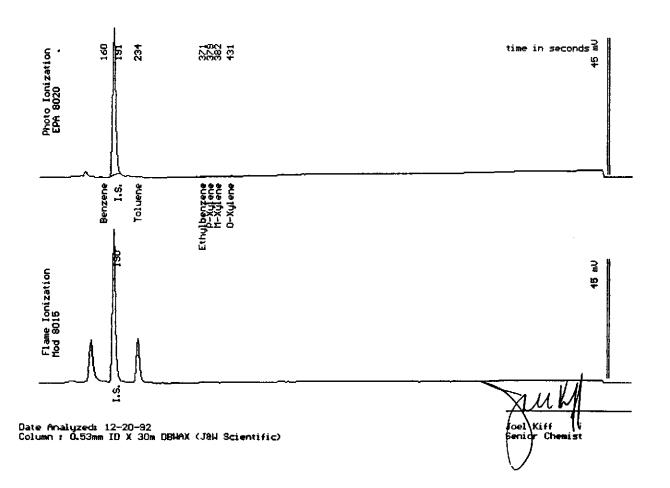
Sample: BH9-6'

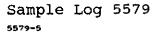
From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50







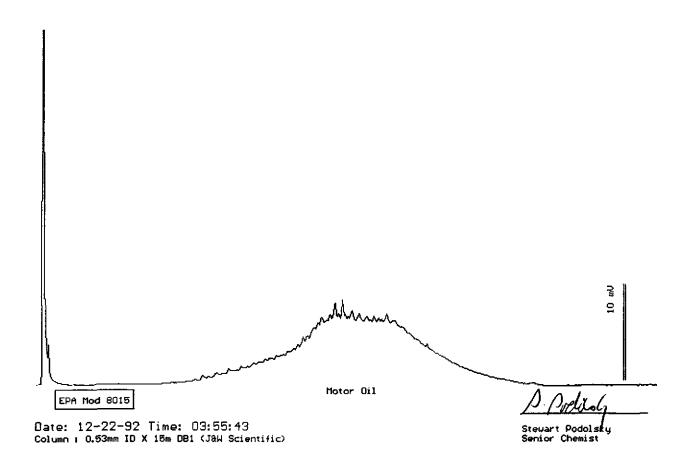
Sample: BH9-6'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067D

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel TPH as Motor Oil	(10) (10)	<10 53





Sample Log 5579

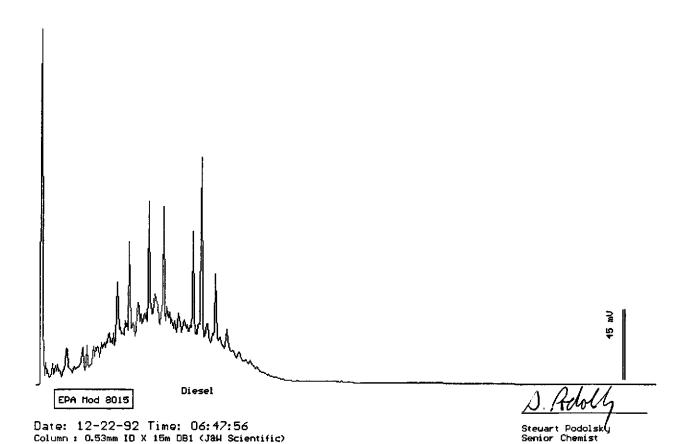
Sample: BH10-5'

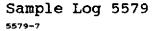
From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:5 QC Batch: 8067D

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(50)	1800
TPH as Motor Oil	(50)	<50







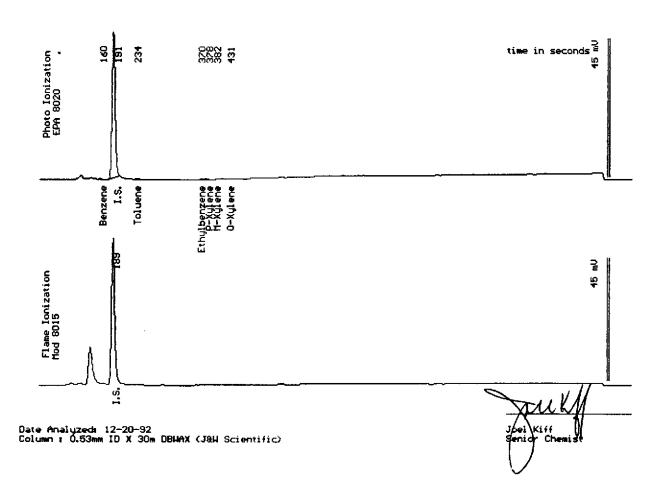
Sample: BH12-4'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50





Sample Log 5579 5579-7

Sample: BH12-4'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1

QC Batch: 8067E

Matrix : Soil

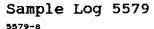
Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10

EPA Mod 8015

Date: 12-22-92 Time: 07:22:29 Column: 0.53mm ID X 15m DB1 (J&H Scientific)

Stewart Podolsky Senior Chemist

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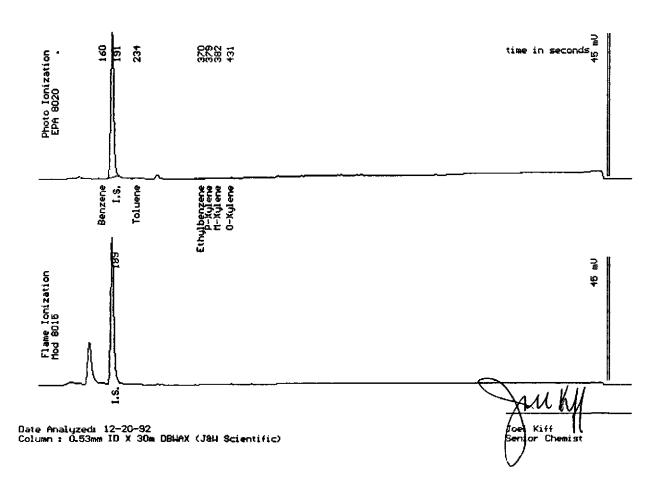
Sample: BH12-9'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50





Sample Log 5579

Sample: BH12-9'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067E

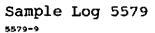
Matrix : Soil

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(10) (10)	<10 <10

EPA Mod 8015

Date: 12-22-92 Time: 07:57:12 Column: 0.53mm ID X 15m DB1 (JAW Scientific) Stewart Podolsky Senior Chemist

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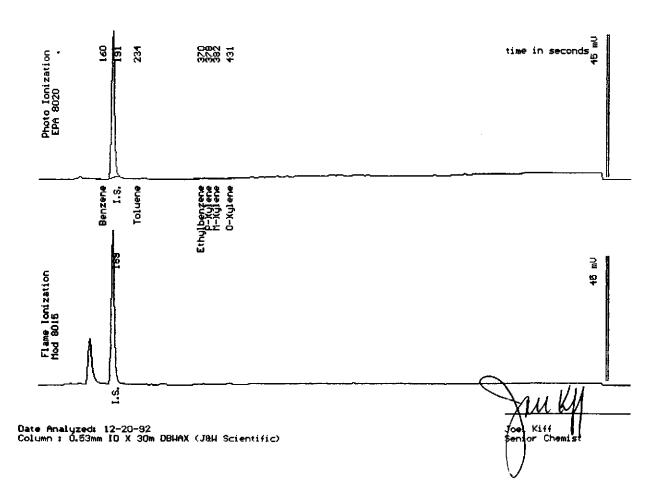


Sample: BH13-4'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value ≖g/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50





Sample Log 5579 5579-9

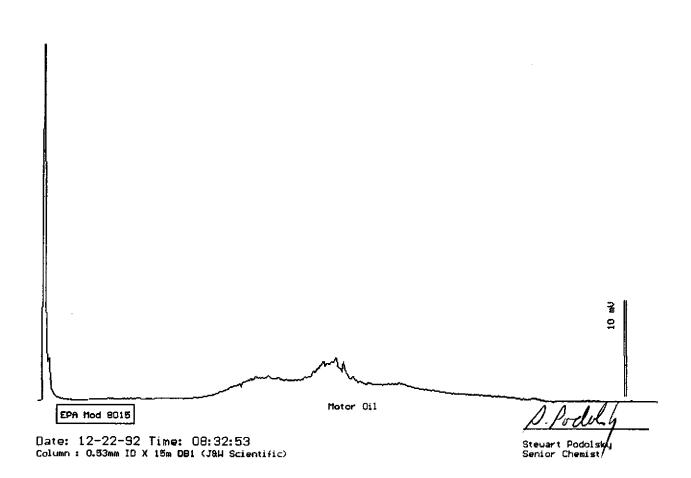
Sample: BH13-4'

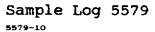
From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067E

Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	16







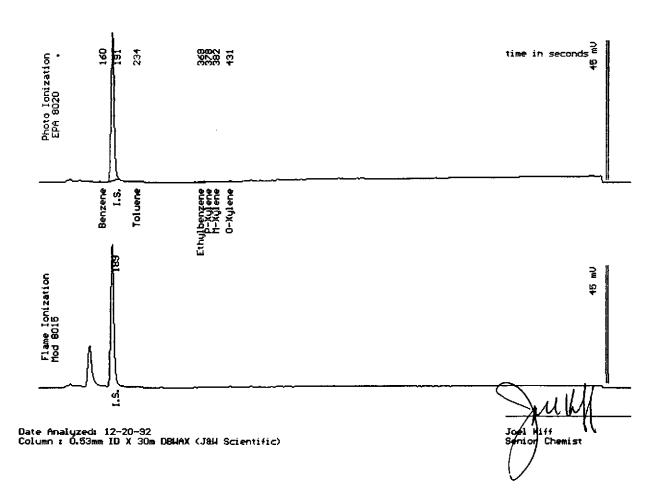
Sample: BH13-7'

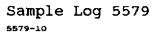
From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50







Sample: BH13-7'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067E

Matrix : Soil

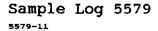
Parameter	(MDL) mg/kg	Measured Value =g/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10

Date: 12-22-92 Time: 09:07:45
Column: 0.53mm ID X 15m DB1 (J&W Scientific)

EPA Mod 8015

Stewart Podolský Senior Chemist

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Sample: BH14-4'

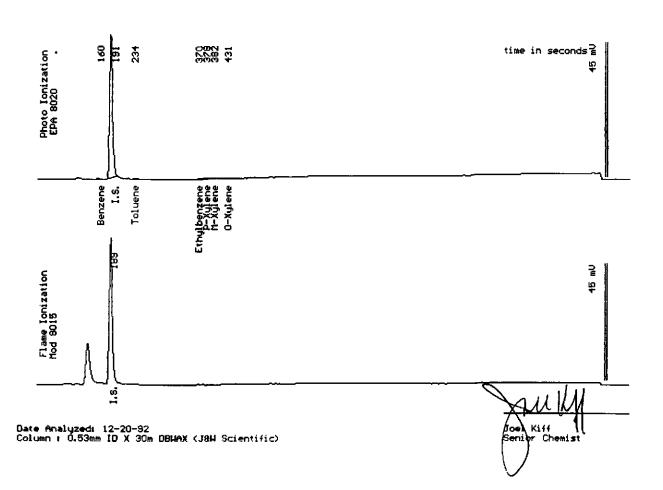
From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1

QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value mg/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50





Sample Log 5579

Sample: BH14-4'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067E

Matrix : Soil

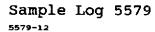
Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10

Date: 12-22-92 Time: 09:42:40 Column: 0.53mm ID X 15m DB1 (J&W Scientific)

EPA Mod 8015

Stewart Podolsky Senior Chemist

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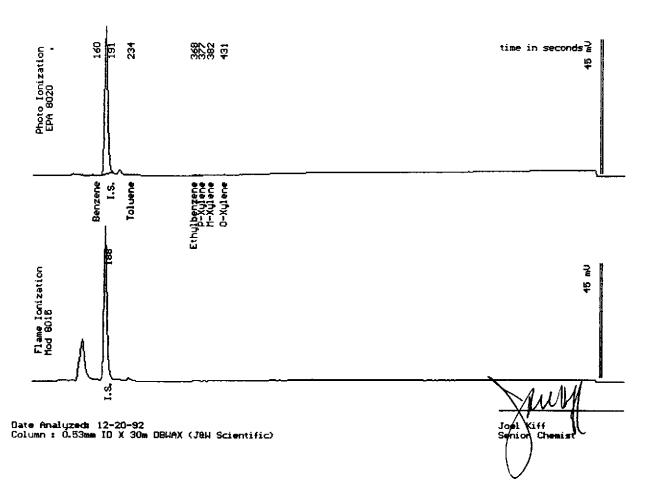
Sample: BH14-7'

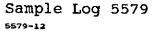
From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Parameter	(MDL) mg/kg	Measured Value mg/kg
Benzene	( 0050)	< 0050
Toluene	(.0050)	<.0050
	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50







Sample: BH14-7'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067E

Matrix : Soil

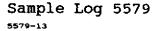
Parameter	(MDL) mg/kg	Measured Value =g/kg					
TPH as Diesel	(10)	<10					
TPH as Motor Oil	(10)	<10					

EPA Mod 8015

Date: 12-22-92 Time: 10:17:11

Column: 0.53mm ID X 15m DB1 (J&W Scientific)

Stewart Podolsky Senior Chemist





Sample: BH15-5'

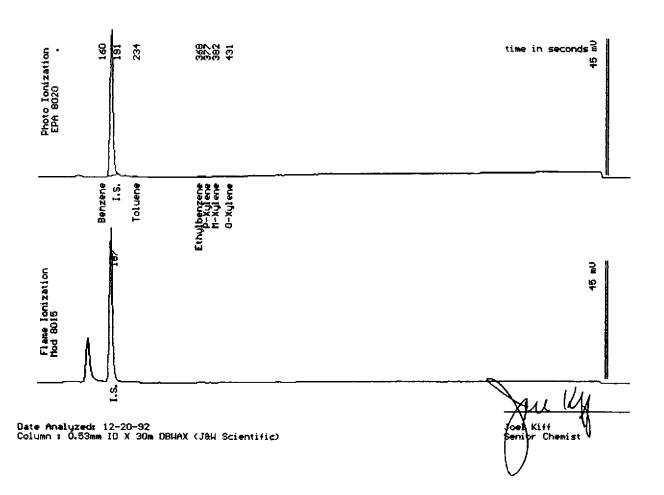
From : Project # 476003 (Dongary Invest., Oakland)

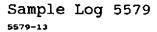
Sampled: 12/15/92

Dilution: 1:1 QC Batch: 4072g

Matrix : Soil

Parameter	(MDL) mg/kg	Measured Value ≖g/kg
Benzene	(.0050)	<.0050
Toluene	(.0050)	<.0050
Ethylbenzene	(.0050)	<.0050
Total Xylenes	(.0050)	<.0050
TPH as Gasoline	(.50)	<.50







Sample: BH15-5'

From : Project # 476003 (Dongary Invest., Oakland)

Sampled: 12/15/92 Extracted: 12/21/92

Dilution: 1:1 QC Batch: 8067E

Matrix : Soil

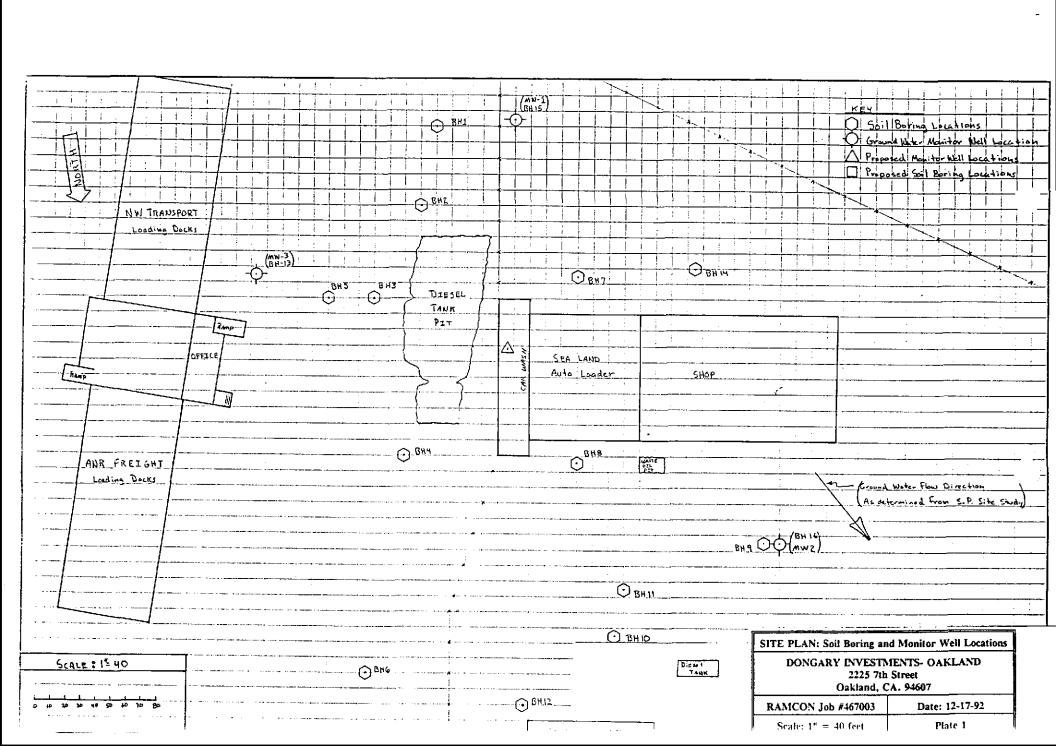
Parameter	(MDL) mg/kg	Measured Value mg/kg
TPH as Diesel	(10)	<10
TPH as Motor Oil	(10)	<10

Date: 12-22-92 Time: 10:52:08 Column: 0.53mm ID X 15m DB1 (J&W Scientific)

EPA Mod 8015

Stewart Podolsky Senior Chemist

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Western Environme Science & Technolo		1046 Davi	Olive s, CA	e Dr. 1 956	ive, S 116	uite :	3	FA LA	\X #: \B#: !	916-	753- 753- 757-	609	1		(	CH.	Αll	N-(	OF-	-CI	UST	ΙΟΙ	Ŋ	RI	EC	OF	RD	AN	D.	ΑN	IAL	.YS	IS I	REC	QUE	EST	•
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Company/Addr		Commer				AX #		37	2-4	20	9				5)															.(v)  L(v)		T			T		
Project Number: 476003		P.O.#: 1991			ŀ	Projec	t Na	ame	: Doi	nga Kla	•	Cnvl	١.		8020/801		F)	B/E,F,C)									tibility		als	1						(24 hr)	
Project Location	2225 7	akland	57						ature Ata		Ł.,				oline (602/	TPH as Diesel/Oil (8015)	Total Oil & Grease (5520 B/E,F)	3 IR (5520	assay			- Pesticides	38				Reactivity, Corrosivity, Ignitibility	CAM - 17 Metals	utant Met	39.2)						RUSH SERVICE (12 hr) or (24 hr)	
Sample	Sam	pling	C	onta	aine	r			od rved		Ma	tri	κ	2/8020)	l as Gas	esel/Oil	Grease	& Grease	Fish Bio	3010	3020	3080 - Pe	3080-PC	3240	3270	LEAD	y, Corros	Metals	rity Poll	0/7421/2	Cr, Pb, Zn, Ni					RVICE	
ΙĎ	DATE	TIME	VOA	SLEEVE	1L PLASTIC	Ę	HNO3	ICE	NONE	WATER	SOIL			BTEX (602/8020)	втех/тр	TPH as Di	Total Oil &	Total Oil	96 - Hour	EPA 601/	EPA 602/8020	EPA 608/6	EPA 608/	EPA 624/8	EPA 625/8270	ORGANIC LEAD	Reactivity	CAM - 17	EPA · Pric	LEAD(7420/7421/239.2)	Cd, Ct, PD					RUSH SE	
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Relinquished by:

Date Time Received by:

12-17-92 3:34 PA

Relinquished by:

Date Time Received by:

Remarks: Note: We may need to run

BTEX and TPH gasoline on Some of
this samples. Please preserve some

of the sumple.

Relinguished by ) Date, Time

Received by Laboratory:

boratory: Bill To: Ram con

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TAT

RUSH SERVICE (12 hr) or (24 hr)
EXPEDITED SERVICE (48 hr) or (1 wk)
STANDARD SERVICE (2wk)

Western Environmen Science & Technolog		1046 Davi	Oli s, C	ve l A 9	Driv 561 	e, Sı 6 	iite 3	3	FA LA	X #.	916-7 916-7 916-7	'53-6	30 <b>9</b> 1	ř		_	СН	IIA	<b>V-C</b>	)F·	-Cl	JST	0[	γ	RE	EC	OR	D A	AN	D,	ΔN	AL	YS	IS I	RE(	ฉบเ	EST	-
Project Manager Auchte		on				Р	hone	#:	37	72-	753	5						Δ	NA	\L\	/SI	SA	EQ	UE	ST	• .											7	ΑΤ
Company/Addre		Comme				. F	AX #	:	37	72-	420	9	<u></u>			(S)													耳	E.T.	(v) _(v)		T					wk)
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Project Location:	Port of O 2225 7 Oakland,	akland th st. (a. 946	07			S	ampl	er S	Sign	ature	ter	Ł.	<b></b>			BTEX/TPH as Gasoline (602/8020/8015)	(8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	assay			sticides	SS				Reactivity, Corrosivity, Ignitibility		EPA - Priority Pollutant Metals	39.2)						(12 hr) or	VICE 48
Sample	Sam	pling				ner	l		eth se	od ved		Ma	trix		2/8020)	das Gask	iesel/Oil (	Grease (	& Grease	96 - Hour Fish Bloassay	8010	3020	3080 - Pes	8080-PCE	3240	3270	LEAD	y, Corros	Metals	ority Poll	0//421/2	, 201, N				ŀ	ERVICE	ED SER
ID	DATE	TIME	VOA	SLEEVE	1L GLASS	1L PLASTIC	를	HNO3	ICE	NONE	WATER	SOIL			BTEX (602/8020)	BTEX/TP	TPH as Diesel/Oil (8015)	Total Oil 8	Total Oil	96 Hour	EPA 601/8010	EPA 602/8020 EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivit	CAM - 17 Metals	EPA - Pric	LEAD(7420/7421/239.2)	Cu, Ci, T					RUSH SE	EXPEDITED SERVICE(48 hr)or (1 wk)
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BH 15-5'	n 11	11: 21 AM		1					<b>/</b>			1				/	<b>V</b>	1													Ī							<b>✓</b>
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## **RECEIVED** FEB 2 2 1993 February 10, 1993

Sample Log 5701

Jaff Auchterlonie Ramcon P.O. Box 1026 West Sacramento, CA 95691

Subject: Analytical Results for 3 Water Samples

Identified as: Project # 476003 (ANR Trucking)

Received: 01/15/93 Purchase Order: 7192

Dear Mr. Auchterlonie:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on January 20, 1993 and describes procedures used to analyze the samples.

Water samples were received in 40-mL glass bottles sealed with TFE septae, and in 1-L glass bottles sealed with TFE-lined caps. Each sample was received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Diesel, Motor Oil, Jet/Kerosene" (Mod. 8015/Extraction)
"Volatile Organic Proirity Pollutants" (EPA Method 624)

Please refer to the following table(s) for summarized analytical results and contact us at 916-757-4650 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Senior Chemist



Sample Log 5701

Sample: MW-1

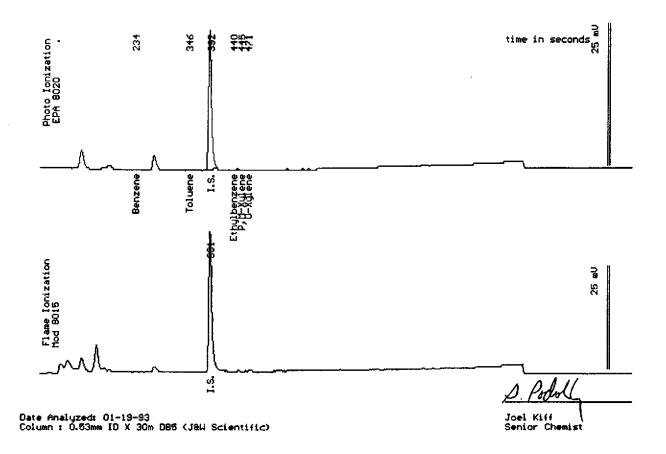
From : Project # 476003 (ANR Trucking)

Sampled: 01/15/93

Dilution: 1:1 QC Batch: 6091A

Matrix : Water

Parameter	(MDL) ug/t	Measured Value wg/L
Benzene Toluene Ethylbenzene Total Xylenes	(.30) (.30) (.30) (.30) (.50)	<.30 <.30 <.30 <.50





Sample Log 5701 5701-1

Sample: MW-1

From : Project # 476003 (ANR Trucking)

Sampled: 01/15/93 Extracted: 01/19/93

Dilution: 1:1 QC Batch: 8071D

Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
TPH as Diesel	(50)	<50
TPH as Motor Oil	(50)	<50

EPA Mod 8015

Date: 01-20-93 Time: 06:52:03 Column: 0.53mm ID X 15m DB1 (J&W Scientific) Stewart Podolsky Senior Chemist

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Sample Log 5701 5701-2

Sample: MW-2

From : Project # 476003 (ANR Trucking)

Sampled: 01/15/93 Extracted: 01/19/93

Dilution: 1:1 QC Batch: 8071D

Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
TPH as Diesel TPH as Motor Oil	(50) (50)	<50 <50

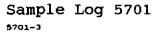
EPA Hod 8015

Date: 01-20-93 Time: 07:28:06

Column: 0.53mm ID X 15m DB1 (J&W Scientific)

Stewart Podolsky Senior Chemist

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Sample: MW-3

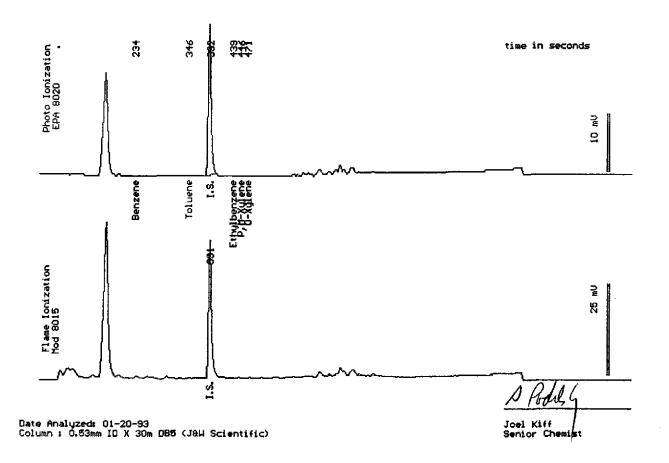
From : Project # 476003 (ANR Trucking)

Sampled : 01/15/93

Dilution: 1:1 QC Batch: 6091B

Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/t
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50





Sample Log 5701

Sample: MW-3

From : Project # 476003 (ANR Trucking)

Sampled: 01/15/93 Extracted: 01/19/92

Dilution: 1:1 QC Batch: 8071E

Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
mpu as Diesel	(50)	<50
TPH as Diesel TPH as Motor Oil	(50)	<50

Sample was lost after only one extraction. Value represents approximately 65% extraction efficiency.

EPA Mod 8015

Date: 01-20-93 Time: 11:33:30 Column: 0.53mm ID X 15m D81 (J&W Scientific)

Stewart Podolsky



Sample: MW-1

From : Project # 476003 (ANR Trucking)

Sampled: 01/15/93 Received: 01/15/93
Matrix: Water Analyzed: 01/21/93

## 624 - Volatile Organic Priority Pollutants

_	-	Measured
Parameter	(MDL) ug/L	Value ug/L Flag
Chloromethane	( 10)	< 10
Bromomethane	( 10)	< 10
cis-1,2-Dichloroethene	( 1.0)	1.9
trans-1,2-Dichloroethene	(1.0)	< 1.0
Vinyl Chloride	( 10)	< 10
Chloroethane	( 10)	< 10
Methylene Chloride	( 1.0)	< 1.0
Acetone	( 10)	< 10
Carbon Disulfide	( 1.0)	< 1.0
1,1-Dichloroethene	( 1.0)	13
1,1-Dichloroethane	( 1.0)	23
Chloroform	( 1.0)	< 1.0
1,2-Dichloroethane	( 1.0)	< 1.0
2-Butanone	( 10)	< 10
1,1,1-Trichloroethane	( 1.0)	< 1.0
Carbon Tetrachloride	(1.0)	< 1.0
Bromodichloromethane	( 1.0)	< 1.0
1,2-Dichloropropane	( 1.0)	< 1.0
cis-1,3-Dichloropropene	( 1.0)	< 1.0
Trichloroethene	( 1.0)	7.9
Dibromochloromethane	( 1.0)	< 1.0
1,1,2-Trichloroethane	( 1.0)	< 1.0
Benzene	( 1.0)	< 1.0
trans-1,3-Dichloropropene	( 1.0)	< 1.0
Bromoform	( 1.0)	< 1.0
4-Methyl-2-Pentanone	( 10)	< 10
2-Hexanone	( 10)	< 10
Tetrachloroethene	(1.0)	3.2
1,1,2,2-Tetrachloroethane	(1.0)	< 1.0
Toluene	( 1.0)	< 1.0
Chlorobenzene	(1.0)	< 1.0
Ethylbenzene	( 1.0)	< 1.0
Styrene	( 1.0)	< 1.0
P,M-Xylene	( 1.0)	< 1.0
O-Xylene	( 1.0)	< 1.0

John Kiff senior Chemiss





February 10, 1993 Sample Log 5701

EPA 624 System Monitoring Compound Recovery

Sample	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT	
MW-1	101	99	100		0	

QC Limits

SMC1	(TOL)	=	Toluene-d8	(88-110)
SMC2	(BFB)	=	Bromofluorobenzene	(86-115)
SMC3	(DCE)	=	1.2-Dichloroethane-d4	(76-114)

- # Column to be used to flag recovery values
- \* Values outside of QC limits
- D System Monitoring Compound diluted out

Jgelkiff Senior Chemiat



The following abbreviations and qualifiers may be present in the analytical reports to follow:

ug/L : Micrograms of target analyte in 1 Liter of sample.

mg/kg: Milligrams of target analyte in 1 kg of sample.

B: This data qualifier indicates that a method blank from the analytical batch contained this compound and the level found in the sample is within 5 times

that level. Use data with caution.

C : This data qualifier indicates that the presence of

the compound has been confirmed by GC/MS.

TCLP : Toxicity Characteristic Leaching Procedure

MS : Matrix Spike

MSD : Matrix Spike Duplicate

RPD : Relative Percent Difference (the difference between

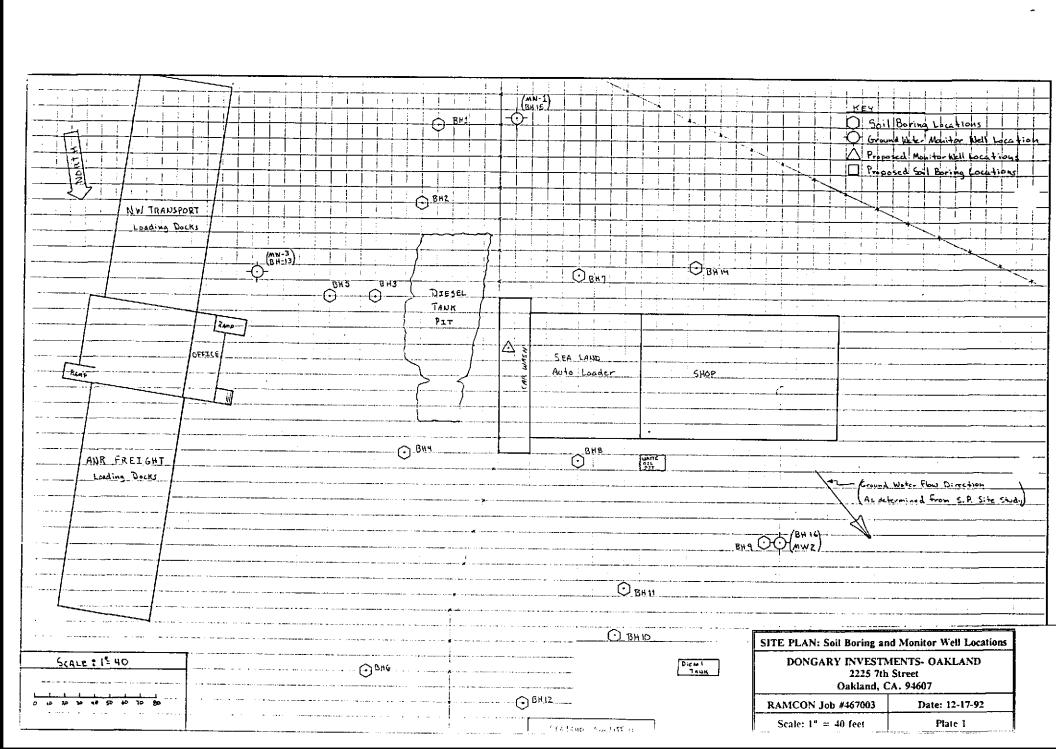
two values divided by the mean, expressed as a percentage.

% REC: Percent Recovery (the ratio between the measured value

and the expected value for a spiked sample, expressed

as a percentage.

< : Less than
> : Greater than





1046 Olive Drive, Suite 3 Davis, CA 95616 916-753-9500 FAX #: 916-753-6091

**CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST** 

Science & Technolo	gy		LAB#: 916-757-4650																																				
Project Manager: Ph							one #:												• •											_	_								_
Dane Deem							371-1690								ANALYSIS REQUEST															T.	TAT								
Company/Address: FA							: :							T			W.E.T.(0)												П	П									
Japer Consultants												<u>6</u>												ļ	T(	ATC	L (,								¥				
Project Number: P.O.#: Pro						rojec	t Na			ı	980		ĺ	5									<b>≱</b>	_	$\dashv$	$\dashv$		.					Ξ	٥					
Project Manager:  Dane Duem  Company/Address:  FA  Dabu Consultants  Project Number:  Project Number:  Project Location:  Oakland Caly.  Phoperature  Project Location:  Oakland Caly.							'R Juckeng								7802(			ק ה									II P		tals								r (24	<u>اچ</u>	₹
Project Location:	: , 0	Δ.			∫ S	ampl	mpler Signature:								(602	<u>~</u>	9/8	2220	_			des					P,		Σ								5	E (4)	E (2)
Oakland Calif.				Project Name: ANR Juckey Sampler Signature: Wath Amman											oline	89	5520	<u> </u>	9888			stici	8		i		sivity		utan	39.2							121	욁	2≤
Sample		pling	Container			١,	Method Preserved			\ \	Matrix			BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	sel/Oil	Total Oil & Grease (5520 B/E,F) Total Oil & Grease IR (5520 B/	lotal UII & Grease IR (5520 B/E,F,C)	Fish Big	010	2 2 2 2 3	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	240	270	ORGANIC LEAD	, Corros	CAM - 17 Metals	ity Pol	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni						RUSH SERVICE (12 hr) or (24 hr)	ED SEP	RD SEF
ID	DATE	TIME		ASS	1L PLASTIC	1	2		ш	EB				(602		as Die	<b>중</b>	5	Hour	501/8 502/8	EPA 615/8150	608/8	608/8	624/8	EPA 625/8270	ANIC	tivity	-12	Ē	)(7420	r, Pb,						H SE		NDAF
			VOA	ור הפו	J.	문	HNO3	핑	NONE	WATER	SOIL			BTE)	BTE	푭	Total	1018		EPA FPA	EPA	EPA	EPA	EPA	EPA	8	Read	δĺ	EPA	Ē	g,						RUS	ä	STAI
MW-1	1-15-93		2	1	-	$\dagger$	$\dagger$	П		4		$  \cdot  $	$\neg$	4		4	-		$\dagger$		$\dagger$			_	_	_		1	_	$\neg$		$\top$	+	+	+		+		+
MW-1 MW-2 MW-3	fi a		2	1				П		Y				4		4	_		1							1	1	1	7	寸		1	$\dagger$	$\dagger$				-+	4
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