

BUTTNER PROPERTIES, INC.

PROPERTY DEVELOPMENT • REAL ESTATE INVESTMENT • PROPERTY MANAGEMENT
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May 10, 2012

RECEIVED

9:48 am, May 17, 2012

Alameda County
Environmental Health

Alameda County Environmental Health Services
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Attention: Ms. Barbara Jakub, Hazardous Materials Specialist

RE: Dave's Station
2250 Telegraph Avenue
Oakland, California

Dear Ms. Jakub:

The "Corrective Action Plan Addendum, Dave's Station, 2250 Telegraph Avenue, Oakland, California dated May 10, 2012" ("Report") was prepared by our consultant, Fugro West, Inc. ("Fugro"), who we believe to be experienced and qualified to advise us in a technical area that requires a high degree of professional expertise. Therefore we have relied upon Fugro's assistance, knowledge and expertise in their preparation of the Report. I am unaware of any material inaccuracy in the information in the Report or of any violation of government guidelines that are applicable to the Report. Accordingly, I am not aware of any reason to question the conclusions and recommendations contained in the Report.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1).

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,



Marianne Robison
President



1000 Broadway, Suite 440
Oakland, California 94607
Tel: (510) 268-0461
Fax: (510) 268-0545

May 10, 2012
Project No. 04.B0609004

Ms. Barbara Jakub, Hazardous Materials Specialist
Alameda County Health Care Services Agency
1161 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: Corrective Action Plan Addendum,
Fuel Leak Case No. RO0000359, GeoTracker Global ID T0600100431,
Dave's Station, 2250 Telegraph Avenue, Oakland, California

Dear Ms. Jakub:

Fugro Consultants, Inc., (Fugro) is pleased to present this Corrective Action Plan (CAP) Addendum in response to your technical comments presented in your CAP review letter dated March 8, 2012. Fugro presented the CAP in a report dated November 21, 2011, which included a review and assessment of more than 20 years of site characterization and monitoring activities, a human health risk assessment and the comparative evaluation of four (4) remedial alternatives deemed reasonable to address remnant soil and groundwater contamination stemming from past petroleum hydrocarbon releases. The property is slated for unrestricted reuse and redevelopment once the site is remediated.

TECHNICAL COMMENTS AND RESPONSES

COMMENT 1. PROPOSED REMEDIATION

Fugro's active remediation methods all include excavation and the addition of ORC. This does not meet the criteria for evaluation of three active remediation techniques. In particular, the first two "remedial alternatives" are similar except for the removal of the building. Please submit an evaluation of at least one additional active remediation technology in the report requested below.

Response: In support of developing the November 2011 CAP, Fugro evaluated four active alternatives. In general the alternatives comprised the following: Alternative 2 and 3 involved soil excavation and direct placement of ORC into excavations which varied in size, Alternative 4 involved minor soil removal followed by an aggressive program of ORC injection points across the site, and Alternative 5 involved excavation until cleanup goals are achieved with no ORC placement. Based on our review of these alternatives and our understanding of the intent of the requirements, we decided that Alternative 5 would not be presented because it represented a significant commitment of financial resources of the RP which would result in a greater economic hardship than the other active alternatives reviewed. Alternative 5 is presented in this addendum only to provide cost data for your analysis, it is in no way an





admission by the RP that if selected it would be implemented. The Alternatives are described below and summarized further in the attachments.

- Alternative 2 - "Hot spot" soil removal and placement of Oxygen Releasing Compound (ORC) while allowing the existing building to remain in place. Source material would be left in place, and there would be a high likelihood that additional remedial efforts would be needed to achieve Target Cleanup Goals (TCG) in groundwater.
- Alternative 3 - Targeted soil removal and placement of ORC. Source removal would be more extensive under this alternative compared to Alternative 2, in that the depth of excavation and extent of source removal is judged to be more complete. It was recognized that the techniques used would be similar to Alternative 2, and yet with the level of completeness we judged it could be treated as a separate alternative given that the result would be more protective of groundwater.
- Alternative 4 – Targeted soil removal and ORC injection to aggressively address groundwater impacts. This is the recommended alternative as it directly delivers a proven cleanup serum to the most contaminated media, the groundwater fluctuation zone.
- Alternative 5 – Excavation to meet TCG in Soil. This alternative was not included in the CAP report because the cost was in our opinion viewed to be significantly greater compared to the other three (3) alternatives. The methods employed for this alternative are similar to those undertaken and explained in the CAP for Alternative 3 and as such will not be reiterated herein. In general, each of the five (5) hot spot area excavations would be expanded until TCG in soil are met. Once the excavation activities are completed, water that has accumulated in the excavation would be removed. Based on our site characterization studies, it is possible that $\frac{1}{2}$ to $\frac{3}{4}$ of the site may require excavation to expose the impacted groundwater fluctuation zone, and the excavated soils may not be appropriate for reuse due to the limitations onsite to segregate clean from impacted soils. ORC would not be needed in this alternative given the extensiveness of the soil removal activities. Any remnant materials left onsite would eventually attenuate.

This is an open-ended alternative due to the existence of the contaminated layer of soil which has been observed in most sampling locations at the site during previous investigations. This layer is comprised of predominately contaminated clayey and silty soils extending from depths of about 8 to 15 feet, coincident with the groundwater fluctuation zone. It was, and still is, our opinion that it is not cost effective to remove this material for the presumed benefits achieved, and as a result this alternative was not included in the CAP. A copy of the cost evaluation is now included as an attachment herein and will be further discussed in response to Comment 3.



COMMENT 2. ADDITION OF OXYGEN RELEASING COMPOUND (ORC) AFTER EXCAVATION

The Draft CAP provides the option of adding oxygen releasing compound (ORC) in all three of the proposed remedial options. ORC is said to continue to be active in adding oxygen to the subsurface for approximately one-year. Therefore injection or placement of ORC will prolong the verification monitoring period for an additional year. Please provide an evaluation of whether placing ORC in the excavation pits in Option 3 is necessary to reduce groundwater concentrations when you will be both removing the secondary source of contamination by excavation and dewatering the tank pit before replacing the site with clean soil.

Response: Petroleum releases at the site have impacted soil in the groundwater fluctuation zone and the impacted materials have been identified in areas away from the former tank pits. The contamination is bound to the fine-grained sediments (silts and clays) and as such the clean up of the contaminated soil and coincident water will prove to be difficult to remediate effectively without physically removing the soil layer and water which accumulates in excavation pits. In Alternative 3, while the excavation is more complete than Alternative 2, contaminated materials beyond the excavation areas will be left in place and these materials will be coincident with groundwater surface. Water which infiltrates into the small excavations will be removed however and given the slow recharge that occurs in fine-grained sediment zones we do not believe that sufficient water volume will be removed to reduce secondary contaminant source within the groundwater fluctuation zone. Remnant contamination at the Site will continue to contaminate groundwater, and due to various contaminant fate and transport processes, will in turn re-contaminate remediated areas. The addition of ORC, which can be completed at a reasonable expense, will effectively reduce the long term groundwater monitoring requirements. Without the addition of ORC, it is our opinion that groundwater monitoring would still be required beyond the 2 years projected in the CAP. As a result we believe that it is necessary to place ORC into the excavations planned in Alternative 3.

COMMENT 3. COST EVALUATION

Please include a detailed cost analysis for each viable option, Specify the breakout costs for each of the following:

- ***Groundwater monitoring by year***
- ***ORC emplacement and injection (Options 3 and 4)***
- ***Additional remedial option as requested above (Alternative 5)***
- ***Over-purge pit water disposal vs. discharging to the POTW through a permit.***
- ***Well destruction and reinstallation***

Please include the cost evaluation in the addendum requested below.

Response: A comparison of alternatives was included in the November 2011 CAP report in Section 9.2.5. The summary table presented in the CAP is in general accordance with the requirements of Title 23 of California Code of Regulations, Section 2725. The engineer's



estimates which were used to develop the costs summarized in the table are attached for each of the alternatives previously evaluated. The engineer's estimates should be considered Fugro internal work product only and are deemed appropriate for a cost analysis of various alternatives, and should not be viewed to represent actual costs which an RP may be responsible for.

A revised Alternative Evaluation Summary Table from the CAP is also attached. This revised table includes the requested itemization listed above with the exception of the water disposal vs. POTW discharge cost element. A comparison of costs associated with over-purge pit water vs. discharging to the POTW through a permit would be the same for each of the alternatives, and as such there is no reason to add this level of detail into the alternative evaluation at this time. It is our experience that permitted POTW discharges end up being more expensive than disposing of the water at a permitted facility such as ICON, primarily due to the cost of preparing and managing the permit requirements, and ultimately the restrictions imposed when another batch of water needs to be discharged. The cost comparison of water discharge measures can be best evaluated once a contractor has been selected who can provide the analysis.

COMMENT 4. DATA SUMMARY TABLES

Please include the depth of all samples (such as the depth of the waste-oil soil, the depth of the temporary wells and depth of grab groundwater samples, if available), in the addendum requested below.

Response: CAP Tables 1, 2 and 4 have been revised to include the depth of samples previously obtained and are attached as requested. Sample depths were previously provided to ACEH for Tables 3, 5, and 6 in the November 2011 CAP.

COMMENT 5. MAPS

A. Please provide a map that clearly depicts concentrations of residual soil contamination at the site.

Response: Given the number of studies that have been conducted at the site, it was our opinion that cross-sections provided a better visual of the locale of contamination than a map, and as such the November 2011 CAP included two very detailed cross-sections as Plates 6 and 7. To comply with the current request we have developed and attach a map showing the maximum concentrations of detected target compounds for your review.

B. Also include the location of the temporary wells (TW-wells) on one of the maps in the document.

Response: TW-wells were already shown on Plate 3 of the November 2011 CAP.



C. Please provide an extended site map using an aerial photograph and show the immediate vicinity and land use (such as noting the nursery school next door the gas station locations and restaurants/residences in the immediate vicinity).

Response: Plate 2 in the November 2011 CAP showed the location of the day car and the former Chevron Station. To comply with the current request, Fugro staff canvassed the area to document land uses in a 500 foot radius of the site. The resulting map is attached.

REPORTING REQUIREMENTS


In accordance with reporting requirements, Fugro has uploaded a PDF copy of this Addendum to the ACEH ftp website and Regional Water Quality Control Board's (RWQCB) GeoTracker database. We have also sent electronic copies of all attached tables in a Microsoft excel format to ACEH.

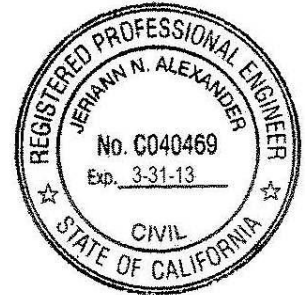
If you have any questions, please call either of the undersigned at (510) 268-0461.

Sincerely,

Fugro CONSULTANTS, Inc.




Jeriann Alexander, P.E., R.E.A.
Principal Engineer



JNA:ke

Attachments: Engineering Estimate Spreadsheets
Revised Alternative Evaluation Summary Table
Revised Data Summary Tables 1, 2, and 4
Plate - Maximum Concentration of Detected Compounds
Plate – Current Land Uses

Copies Submitted: (1) Addressee
(PDF) Ms. Marianne Robison, Buttner Properties
(PDF) Mr. Tim Robison, Ph.D.
(PDF) Alameda County Environmental Health FTP website
(PDF) Regional Water Quality Control Board GeoTracker database

ENGINEERING ESTIMATE SPREADSHEETS

Draft - Subject to Revision
April 2012

Potential Remediation Costs- Alternative 2 - Soil Excavation and ORC treatment
2250 Telegraph Ave
Oakland, California

Engineers
Estimated
Costs

Line Item	Quantity No.	Unit	Unit Price	Subtotal	Source
Property and Remediation Logistical Considerations					
Planning and Contract Management					
Planning, develop specs, coordination with owner			\$15,000	\$15,000	Fugro
Agency RAP Update to show logistics, Contractor Bidding	1	ea	\$15,000	\$15,000	Fugro
Progress Reports and Updating to Client	12	ea	\$1,500	\$18,000	Fugro
Implementation Report	1	ea	\$25,000	\$25,000	Fugro
Agency Oversight Fees			\$20,000	\$20,000	Fugro
		Subtotal		\$93,000	
Decontamination Station and Water Disposal					
Station set up and take down	2	mo	\$500	\$1,000	contractor
Water Storage in 3000 gallon water tank	4	mo	\$250	\$1,000	contractor
Analytical Costs Water Disposal	2		\$500	\$1,000	Fugro
Water Trans and Disposal at permitted facility	2	ea	\$4,500	\$9,000	contractor
Data Evaluation, coordination of disposal	1	ea	\$2,500	\$2,500	Fugro
Remediation Contractor Site Logistics					
Contractor Storage Container Rental	6	mo	\$300	\$1,800	contractor
Portable Restroom	6	mo.	\$250	\$1,500	contractor
Remediation					
10 days Excavation					
Mob/Coordination of Supplies and Equipment	1	ea	\$500	\$500	contractor
Concrete slab demolition/recycle interior	1	ea	\$3,000	\$3,000	contractor
Trench Plates for shoring			\$1,000	\$1,000	contractor
Excavate MW-1 Area - 20x15x17	200				
Excavate MW-3 to B-9 - 20x50x17	630				
Excavate along fence line 10x60x17	385				
Excavate interior of building 10x20x17	100				
Excavate MW-4 Area 15x30x17	300	1600 yds	\$15	\$24,000	contractor
Interior Area Difficulties				\$5,000	contractor
Interior Slab replacement				\$10,000	contractor
	1615	2099.5	3149.25		
	yds	30% fluff	1.5 to get tons		
	yds	yds	tons		
Analytical Testing					
Soil conf every 15 feet 500 lineal feet		30	tests		
Soil stockpiles 8 composites		4	tests		
tphg, tphd, tphmo and lead		34	tests	\$325	\$11,050
				\$50	\$160,000
Load, Transport and disposal	3200	tons			contractor
0.5 day Remove collected water, 2 diff days, slow recharge	2	ea	\$750	\$1,500	contractor
1 Day Place ORC	5	ea	\$2,000	\$10,000	Regenesis
2 days Backfill place and compact import following ORC	2400	tons	\$35	\$84,000	contractor
Direction of Remedial Activities		20	day	\$2,750	\$55,000
Assume: Field Engineer onsite full time + 8hr Registered Env Professional		20	day	\$350	\$7,000
OMV and Sampling Equipment		20	day		
Contractor to be paid directly by Client, no carrying costs		0.15	percent		\$0
		Subtotal		\$482,850	
		Labor and Materials Contingency	0.2	\$77,970	
		Remediation Subtotal		\$560,820	

Total **\$560,820**

Draft- Subject to Revision
April 2012

Potential Remediation Costs- Alternative 3 - Soil Excavation and ORC treatment
2250 Telegraph Ave
Oakland, California

Engineers
Estimated
Costs

Line Item	Quantity No.	Unit	Unit Price	Subtotal	Source
Property and Remediation Logistical Considerations					
Planning and Contract Management					
Planning, develop specs, coordination with owner			\$15,000	\$15,000	Fugro
Agency RAP Update to show logistics, Contractor Bidding	1 ea		\$15,000	\$15,000	Fugro
Progress Reports and Updating to Client	12 ea		\$1,500	\$18,000	Fugro
Implementation Report	1 ea		\$25,000	\$25,000	Fugro
Agency Oversight Fees			\$20,000	\$20,000	Fugro
		Subtotal		\$93,000	
Decontamination Station and Water Disposal					
Station set up and take down	2 mo		\$500	\$1,000	contractor
Water Storage in 3000 gallon water tank	4 mo		\$250	\$1,000	contractor
Analytical Costs Water Disposal	2		\$500	\$1,000	Fugro
Water Trans and Disposal at permitted facility	2 ea		\$4,500	\$9,000	contractor
Data Evaluation, coordination of disposal	1 ea		\$2,500	\$2,500	Fugro
Remediation Contractor Site Logistics					
Contractor Storage Container Rental	6 mo		\$300	\$1,800	contractor
Portable Restroom	6 mo.		\$250	\$1,500	contractor
Remediation					
10 days Excavation					
Mob/Coordination of Supplies and Equipment	1 ea		\$500	\$500	contractor
Excavate MW-1 Area - 20x15x17	200				
Excavate MW-3 to B-9 - 20x50x17	630				
Excavate along fence line 10x60x17	385				
Excavate MW-4 Area 35x35x17	800	1800 yds		\$15	\$27,000 contractor
	2015	2619.5	3929.25		
		yds 30% fluff			
		yds			
		1.5 to get tons			
		tons			
Analytical Testing					
Soil conf every 15 feet 500 lineal feet	25 tests				
Soil stockpiles 8 composites	4 tests				
tphg, tphd, tphmo and lead	29 tests		\$325	\$9,425	Fugro
					5 day turnaround
Load, Transport and disposal	4000 tons		\$50	\$200,000	contractor
0.5 day Remove collected water, 2 diff days, slow recharge	2 ea		\$750	\$1,500	contractor
1 Day Place ORC	4 ea		\$2,000	\$8,000	Regenesis
2 days Backfill place and compact import following ORC	3000 tons		\$35	\$105,000	contractor
Direction of Remedial Activities	20 day		\$2,750	\$55,000	Fugro
Assume: Field Engineer onsite full time + 8hr Registered Env Professional					
OVM and Sampling Equipment	20 day		\$350	\$7,000	Fugro
Contractor to be paid directly by Client, no carrying costs	0.15 percent				\$0 Fugro
		Subtotal		\$524,225	
		Labor and Materials Contingency	0.2	\$86,245	
		Remediation Subtotal		\$610,470	

Total \$610,470

Draft- Subject to Revision
April 2012

Potential Remediation Costs- Alternative 5 - Soil Excavation until TCG Met
2250 Telegraph Ave
Oakland, California

Engineers
Estimated
Costs

Line Item	Quantity No.	Unit	Unit Price	Subtotal	Source
Property and Remediation Logistical Considerations					
Planning and Contract Management					
Planning, develop specs, coordination with owner			\$15,000	\$15,000	Fugro
Agency RAP Update to show logistics, Contractor Bidding	1	ea	\$15,000	\$15,000	Fugro
Progress Reports and Updating to Client	12	ea	\$1,500	\$18,000	Fugro
Implementation Report	1	ea	\$25,000	\$25,000	Fugro
Agency Oversight Fees			\$20,000	\$20,000	Fugro
		Subtotal		\$93,000	
Decontamination Station and Water Disposal					
Station set up and take down	2	mo	\$500	\$1,000	contractor
Water Storage in 3000 gallon water tank	2	mo	\$250	\$500	contractor
Anaytical Costs Water Disposal	4		\$500	\$2,000	Fugro
Water Trans and Disposal at permitted facility	4	ea	\$4,500	\$18,000	contractor
Data Evaluation, coordination of disposal	4	ea	\$2,500	\$10,000	Fugro
Remediation Contractor Site Logistics					
Contractor Storage Container Rental	6	mo	\$300	\$1,800	contractor
Portable Restroom	6	mo.	\$250	\$1,500	contractor
Remediation by chasing impacted soil until TCG are met, Assume 1/2 of site is excavated to average 15 foot depth					
Excavation over 20 day period					
Mob/Coordination of Supplies and Equipment, rental lost time	1	ea	\$5,000	\$5,000	contractor
	4000	4000 yds	\$15	\$60,000	contractor
	4000	5200	7800		
	yds	30% fluff	1.5 to get tons		
	yds	yds	tons		
Analytical Testing					
Periodic Testing					
tphd, tphg 24 hr turnaround	50	tests	\$200	\$10,000	Fugro
Soil conf normal turnaround	50				
Soil stockpiles 8 composites	10	tests			
tphg, tphd, tphmo and lead	40	tests	\$325	\$16,250	Fugro
Load, Transport and disposal	7800	tons	\$50	\$390,000	contractor
0.5 day Remove collected water from pits	4	ea	\$750	\$3,000	contractor
2 days Backfill place and compact import NO ORC	6000	tons	\$35	\$210,000	contractor
Direction of Remedial Activities					
Assume: Field Engineer onsite full time + 8hr Registered Env Professional	30	day	\$2,750	\$82,500	Fugro
OVM and Sampling Equipment	30	day	\$350	\$10,500	Fugro
Contractor to be paid directly by Client, no carrying costs					
	0.15	percent		\$0	Fugro
		Subtotal		\$915,050	
		Labor and Materials Contingency	0.3	\$246,615	
		Remediation Subtotal		\$1,161,665	

Total **\$1,161,665**

**Table 1 - Itemized Fee Estimate
CAP Backup
2250 Telegraph Avenue
Oakland, California**

Well Demolition (Assumes 4 wells)

Coordinating Site Access, Permitting and Planning

Principal Engineer	2	hr @	\$215 /hr	\$430
Project I	8	hrs @	\$155 /hr	\$1,240
Drilling Permit (one in street, one for site)	2	permits	\$915 /ea	\$1,830
Encroachment Permit (City of Oakland)	1	permit	\$1,550 /ea	\$1,550
Vehicle	4	hrs @	\$12 /hr	\$48

Well Demolition (2 days)

Principal Engineer	2	hrs @	\$215 /hr	\$430
Project I	4	hrs @	\$155 /hr	\$620
Staff I	20	hrs @	\$120 /hr	\$2,400
Vehicle	20	hrs @	\$12 /hr	\$240
Field Supplies	1	fee	\$350 /ea	\$350
Drilling Contractor			\$6,000	\$6,000

Investigation Derived Waste Management

Project I	2	hrs @	\$155 /hr	\$310
Drum Disposal, assumes non-haz waste	4	ea @	\$250 /ea	\$1,000
			Subtotal	\$16,448

Prepare Well Demolition Completion Report

Principal Engineer	4	hours @	\$215 /hr	\$860
Project I	12	hours @	\$155 /hr	\$1,860
Staff I - upload report to County/State databases	4	hours @	\$120 /hr	\$480
Clerical	2	hours @	\$85 /hr	\$170
Drafting	2	hours @	\$105 /hr	\$210
			Subtotal	\$3,580

TOTAL \$20,028

**Table 1 - Itemized Fee Estimate
CAP Backup
2250 Telegraph Avenue
Oakland, California**

Well Installation (assumes 3 wells)

Coordinating Site Access and Planning

Principal Engineer	2	hr @	\$215 /hr	\$430
Project I	8	hrs @	\$155 /hr	\$1,240

Planning and Permitting

Drilling Permit (Alameda County)	1	permits	\$915 /ea	\$915
Staff I (mark borings, USA, HSP)	8	hrs @	\$120 /hr	\$960
Vehicle	4	hrs @	\$12 /hr	\$48

Well Installation (2-days)

Principal Engineer	2	hrs @	\$215 /hr	\$430
Project I	4	hrs @	\$155 /hr	\$620
Staff I	16	hrs @	\$120 /hr	\$1,920
Vehicle	16	hrs @	\$12 /hr	\$192
Field Supplies/meters/OVM for soil	1	fee	\$350 /ea	\$350
Drilling Contractor	2	day@	\$4,000 /day	\$8,000

Well Development

Project I	4	hrs @	\$155 /hr	\$620
Staff I	10	hrs @	\$120 /hr	\$1,200
Vehicle	10	hrs @	\$12 /hr	\$120
Drilling Contractor	1	day@	\$1,100 /day	\$1,100
Field Multiparameter Meter	1	day @	\$220 /day	\$220
Registered Land Surveyor	1	fee	\$1,500 /ea	\$1,500

Analysis of Soil Samples

TPHg, BTEX, MTBE (8015m)	12	samples @	\$65 /ea	\$780
Fuel Oxygenates & Lead Scavengers (8260b)	12	samples @	\$90 /ea	\$1,080
TPHd, TPHmo with silica gel (8015m)	12	samples @	\$95 /ea	\$1,140
EDF Reporting	1	fee @	\$60 /fee	\$60

Subtotal \$22,925

Investigation Derived Waste Management

Project I	2	hrs @	\$155 /hr	\$310
Drum Disposal, assumes non-haz waste	8	ea @	\$250 /ea	\$2,000

Subtotal \$2,310

Prepare Well Installation Completion Report

Principal Engineer	4	hours @	\$215 /hr	\$860
Project I	12	hours @	\$155 /hr	\$1,860
Staff I - upload report to County/State databases	4	hours @	\$120 /hr	\$480
Clerical	2	hours @	\$85 /hr	\$170
Drafting	2	hours @	\$105 /hr	\$210

Subtotal \$3,580

TOTAL \$28,815

**Table 1 - Itemized Fee Estimate
CAP Backup
2250 Telegraph Avenue
Oakland, California**

Year 1 - Semi Annual Monitoring (3 Wells including MW-5, MW-7, and MW-8)

<i>Planning and Permitting</i>			
Principal Engineer	0.5 hr @	\$215 /hr	\$108
Project I	2 hrs @	\$155 /hr	\$310
Staff I	8 hrs @	\$120 /hr	\$960
Drafting	1 hr @	\$105 /hr	\$105
<i>Field Work - Two Days</i>			
Principal Engineer	1 hr @	\$215 /hr	\$215
Project I	4 hrs @	\$155 /hr	\$620
Staff I	16 hrs @	\$120 /hr	\$1,920
Vehicle	16 hrs @	\$12 /hr	\$192
Miscellaneous Field Instruments/Supplies	1 fee @	\$250 /fee	\$250
Drum Disposal (if needed; assuming Non-Hazardous)	1 each @	\$250 /ea	\$250
<i>Analysis of Groundwater Samples</i>			
TPHg, BTEX, MTBE (8015m) + Duplicate	4 samples @	\$65 /ea	\$260
Fuel Oxygenates & Lead Scavengers (8260b)	3 samples @	\$90 /ea	\$270
TPHd, TPHmo with silica gel (8015m)	3 samples @	\$95 /ea	\$285
EDF Data Reporting	1 fee @	\$60 /fee	\$60
<i>Prepare Groundwater Monitoring Report</i>			
Principal Engineer	2 hrs @	\$215 /hr	\$430
Project I	4 hrs @	\$155 /hr	\$620
Staff I	12 hrs @	\$120 /hr	\$1,440
Drafting	4 hrs @	\$105 /hr	\$420
Clerical	4 hrs @	\$85 /hr	\$340
<i>Upload Report to Agency Database</i>			
Staff I	1 hr @	\$120 /hr	\$120
		Total This Event	\$9,175
		Total for the Year	\$18,349

Table 1 - Itemized Fee Estimate
CAP Backup
2250 Telegraph Avenue
Oakland, California

Year 1 - Qtrly Monitoring 3 New Wells including MW-1, MW-3 and MW-4

<i>Planning and Permitting</i>			
Principal Engineer	0.5 hr @	\$215 /hr	\$108
Project I	2 hrs @	\$155 /hr	\$310
Staff I	8 hrs @	\$120 /hr	\$960
Drafting	1 hr @	\$105 /hr	\$105
<i>Field Work - 2 days</i>			
Principal Engineer	0.5 hr @	\$215 /hr	\$108
Project I	2 hrs @	\$155 /hr	\$310
Staff I	12 hrs @	\$120 /hr	\$1,440
Vehicle	12 hrs @	\$12 /hr	\$144
Miscellaneous Field Instruments/Supplies	1 fee @	\$250 /fee	\$250
Drum Disposal (if needed; assuming Non-Hazardous)	1 each @	\$250 /ea	\$250
<i>Analysis of Groundwater Samples</i>			
TPHg, BTEX, MTBE (8015m) + Duplicate	4 samples @	\$65 /ea	\$260
Fuel Oxygenates & Lead Scavengers (8260b)	3 samples @	\$90 /ea	\$270
TPHd, TPHmo with silica gel (8015m)	3 samples @	\$95 /ea	\$285
EDF Data Reporting	1 fee @	\$60 /fee	\$60
<i>Prepare Groundwater Monitoring Report</i>			
Principal Engineer	2 hrs @	\$215 /hr	\$430
Project I	4 hrs @	\$155 /hr	\$620
Staff I	12 hrs @	\$120 /hr	\$1,440
Drafting	4 hrs @	\$105 /hr	\$420
Clerical	4 hrs @	\$85 /hr	\$340
<i>Upload Report to Agency Databases</i>			
Staff I	1 hr @	\$120 /hr	\$120
		Total This Event	\$8,229
		Total for the Year	\$32,916

Table 1 - Itemized Fee Estimate
CAP Backup
2250 Telegraph Avenue
Oakland, California

Year 2 - Semi Annual Monitoring (6 Wells including MW-1, MW-3, MW-4, MW-5, MW-7, and MW-8)

<i>Planning and Permitting</i>			
Principal Engineer	0.5 hr @	\$215 /hr	\$108
Project I	2 hrs @	\$155 /hr	\$310
Staff I	8 hrs @	\$120 /hr	\$960
Drafting	1 hr @	\$105 /hr	\$105
<i>Field Work - Two Days</i>			
Principal Engineer	1 hr @	\$215 /hr	\$215
Project I	4 hrs @	\$155 /hr	\$620
Staff I	20 hrs @	\$120 /hr	\$2,400
Vehicle	20 hrs @	\$12 /hr	\$240
Miscellaneous Field Instruments/Supplies	1 fee @	\$250 /fee	\$250
Drum Disposal (if needed; assuming Non-Hazardous)	1 each @	\$250 /ea	\$250
<i>Analysis of Groundwater Samples</i>			
TPHg, BTEX, MTBE (8015m) + Duplicate	7 samples @	\$65 /ea	\$455
Fuel Oxygenates & Lead Scavengers (8260b)	6 samples @	\$90 /ea	\$540
TPHd, TPHmo with silica gel (8015m)	6 samples @	\$95 /ea	\$570
EDF Data Reporting	1 fee @	\$60 /fee	\$60
<i>Prepare Groundwater Monitoring Report</i>			
Principal Engineer	2 hrs @	\$215 /hr	\$430
Project I	6 hrs @	\$155 /hr	\$930
Staff I	16 hrs @	\$120 /hr	\$1,920
Drafting	4 hrs @	\$105 /hr	\$420
Clerical	4 hrs @	\$85 /hr	\$340
<i>Upload Report to Agency Database</i>			
Staff I	1 hr @	\$120 /hr	\$120
		Total This Event	\$11,243
		Total for the Year	\$22,485

**Table 1 - Itemized Fee Estimate
CAP Backup
2250 Telegraph Avenue
Oakland, California**

Well Demolition (Assumes 7 wells MW-1, MW-2, MW-3, MW-3, MW-4, MW-5, MW-7 and MW-8)

Coordinating Site Access, Permitting and Planning

Principal Engineer	2	hr @	\$215 /hr	\$430
Project I	8	hrs @	\$155 /hr	\$1,240
Drilling Permit (one in street, one for site)	2	permits	\$915 /ea	\$1,830
Encroachment Permit (City of Oakland)	1	permit	\$1,550 /ea	\$1,550
Vehicle	4	hrs @	\$12 /hr	\$48

Well Demolition (3 days)

Principal Engineer	4	hrs @	\$215 /hr	\$860
Project I	6	hrs @	\$155 /hr	\$930
Staff I	30	hrs @	\$120 /hr	\$3,600
Vehicle	30	hrs @	\$12 /hr	\$360
Field Supplies	1	fee	\$350 /ea	\$350
Drilling Contractor			\$10,000	\$10,000

Investigation Derived Waste Management

Project I	4	hrs @	\$155 /hr	\$620
Drum Disposal, assumes non-haz waste	7	ea @	\$250 /ea	\$1,750

Subtotal \$23,568

Prepare Well Demolition Completion Report

Principal Engineer	4	hours @	\$215 /hr	\$860
Project I	12	hours @	\$155 /hr	\$1,860
Staff I - upload report to County/State databases	4	hours @	\$120 /hr	\$480
Clerical	2	hours @	\$85 /hr	\$170
Drafting	2	hours @	\$105 /hr	\$210

Subtotal \$3,580

TOTAL \$27,148

REVISED ALTERNATIVE EVALUATION SUMMARY TABLE

Alternative Evaluation Summary Table

	Alternative 1: No Action/MNA	Alternative 2: “Hotspot” Removal with ORC Placement	Alternative 3: Targeted Soil Removal and ORC Placement	Alternative 4: Targeted Soil Removal with Aggressive Groundwater Treatment	Alternative 5: Soil excavation until TCG are met
Short-term Effectiveness	Not Effective	Moderately effective	Highly effective to remove source material	Highly Effective	Highly Effective
Long-term Effectiveness	Not Effective	Source remains and will need to be remediated in the future, moderately effective but may require more aggressive groundwater treatment	Moderately effective but may require more aggressive groundwater treatment	Highly Effective	Highly Effective
Overall Protectiveness	Not Protective	Moderately Protective	Protective	Protective	Protective
Implementability	Feasible	Feasible	Feasible	Feasible	Feasible
Remediation Cost	\$50k	\$500 to 550K, includes cost of ORC of \$10k	\$600 to 650k, includes cost of ORC of \$10k	\$450 to \$500k, includes cost of ORC injection of of \$100k	\$1,000 to 1,500k, no ORC cost
Estimated Years of Groundwater Monitoring	20 Years	2 Years	2 Years	2 Years	1 Year
Well Demolition before Rem and Installation after	0	\$50 to 60k	\$50 to 60k	\$50 to 60k	\$50 to 60k
Year 1 Monitoring and PM	6 wells at \$25k/year	\$70k	\$70k	\$70k	\$60k
Year 2 Monitoring	6 wells at \$25k/year	\$35k	\$35k	\$35k	\$35k
Well Demo/ Site Closure	\$50k	\$50k	\$50k	\$50k	\$50k
Total Estimated	\$600k	\$720 to \$770k	\$800 to \$850k	\$650to \$700k	\$1,200 to 1,700k

REVISED DATA SUMMARY TABLES 1, 2, AND 4



Sample Location and Depth in Feet	Sample Depth (feet)	Sample Date	Petroleum Hydrocarbons					PCBs	Volatile Organic Compounds						Metals					Semi-Volatile Organic Compounds					
			TPH, Gasoline Range	TPH, Kerosene Range	TPH, Diesel Range	TPH, Motor Oil Range	Total Oil Grease	Polychlorinated Biphenyls	Benzene	Toluene	Ethylbenzene	Xylenes	PCE	Chlorobenzene	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	2-Methylphenol	2-Methylnaphthalene	Di-N-Butyl Phthalate	Naphthalene	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Gasoline Tank and Dispenser Area																									
G3@ 10	10	8/29/1990	120	--	--	--	--	--	820	560	2,300	4,000	--	--	--	--	--	--	9.07	--	--	--	--	--	
G4@ 10	10	8/29/1990	18	--	--	--	--	--	89	11	150	520	--	--	--	--	--	--	19.2	--	--	--	--	--	
G5@ 10	10	8/29/1990	270	--	--	--	--	--	2,300	220	3,400	410	--	--	--	--	--	--	5.43	--	--	--	--	--	
G6@ 15	15	8/29/1990	8.3	--	--	--	--	--	320	6.3	170	220	--	--	--	--	--	--	4.93	--	--	--	--	--	
G7@ 11	11	8/29/1990	6.3	--	--	--	--	--	270	34	<5.0	160	--	--	--	--	--	--	8.45	--	--	--	--	--	
G8@16	16	8/29/1990	<2.5	--	--	--	--	--	19	5.6	<5.0	<5.0	--	--	--	--	--	--	6.65	--	--	--	--	--	
G9@ 10	10	8/29/1990	<2.5	--	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	5.54	--	--	--	--	--	
G10@ 16	16	8/29/1990	260	--	--	--	--	--	1,600	670	1,300	460	--	--	--	--	--	--	8.36	--	--	--	--	--	
G11@ 10	10	8/29/1990	<2.5	--	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	6.01	--	--	--	--	--	
D1@ 0.5	0.5	8/29/1990	<2.5	--	--	--	--	--	<5.0	<5.0	<5.0	<5.0	--	--	--	--	--	--	201	--	--	--	--	--	
D2@ 0.5	0.5	8/29/1990	1,700	--	--	--	--	--	2,300	9,500	35,000	77,000	--	--	--	--	--	--	107	--	--	--	--	--	
D3@ 0.5	0.5	8/29/1990	200	--	--	--	--	--	850	1,600	3,800	18,000	--	--	--	--	--	--	91.7	--	--	--	--	--	
D4@ 0.5	0.5	8/29/1990	<2.5	--	--	--	--	--	<5.0	<5.0	<5.0	9.1	--	--	--	--	--	--	537	--	--	--	--	--	
Waste Oil Tank Area																									
WO-1	8.5	8/31/1990	40	--	290	3,800	1,700	<0.05	1,800	880	800	1,200	39	40	0.431	23.4	38.4	151	32.5	167	0.9	2.4	0.5	1.3	
WO-2	8.5	8/31/1990	740	--	640	5,100	3,600	--	12,000	15,000	10,000	18,000	470	<10	0.522	25.6	32.5	112	30.2	140	--	--	--	--	
WP1,2,3,4	Stockpile	8/31/1990	130	--	1,000	4,800	3,200	--	11000	1,700	2,100	3,900	66	<10	0.482	26.0	23.3	85.9	27.5	70.6	--	--	--	--	
ESLs Residential Land Use ¹			100	100	100	370	370	0.22	120	9,300	2,300	11,000	370	1,500	1.7	750	230	200	150	600	NE	0.25	NE	1.3	
ESLs Commercial/Industrial Land Use ¹			180	180	180	2,500	2,500	0.74	270	9,300	4,700	11,000	950	1,500	7.4	750	230	750	150	600	NE	0.25	NE	2.8	

Notes

- TPH = Total petroleum hydrocarbons
- DCA = Dichloroethane
- TCA = Trichloroethane
- PCE = Tetrachloroethene
- NE = No value established
- mg/kg = milligrams per kilogram = parts per million
- µg/kg = micrograms per kilogram = parts per billion
- <1 = Chemical not present at a concentration greater than the laboratory detection limit shown or stated on test reports
- = Chemical not tested for

ESLs = San Francisco Bay Regional Water Quality Control Board, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final November 2007, Revised May 2008

¹ = Table B Shallow Soil Screening Levels, Groundwater is not a Current or Potential Source of Drinking Water

Table 2
Summary of Chemical Concentrations in Soil - After Remediation Activities
2250 Telegraph Avenue
Oakland, California



Sample Location and Depth in Feet	Sample Depth (feet)	Sample Date	Petroleum Hydrocarbons					Volatile Organic Compounds									Metals	Semi-Volatile Organic Compounds																					
			TPH, Gasoline Range	TPH, Kerosene Range	TPH, Diesel Range	TPH, Motor Oil Range	Total Oil Grease	Benzene	Toluene	Ethylbenzene	Xylenes	1,1,1-TCA	1,2-DCA	PCE	Chlorobenzene	Lead		2-Methylnaphthalene	Anthracene	Bis-2-ethylhexyl Phthalate	Butylbenzylphthalate	Di-N-Butyl Phthalate	Fluoranthene	Fluorene	Naphthalene	Nitrobenzene	N-Nitrosodiphenylamine	Phenanthrene	Pyrene										
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Gasoline Tank and Dispenser Area																																							
G10 @ 17	17	10/10/90	<2.5	--	<5	<50	--	73	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G12 @ 10	10	10/5/90	52	--	110	<50	--	110	45	480	140	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G13 @ 10	10	10/8/90	12	--	<5	<50	--	220	43	60	130	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G14 @ 7.5	7.5	10/8/90	<2.5	--	<5	100	--	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G15 @ 9.5	9.5	10/8/90	310	--	<5	<50	--	820	59	1,300	1,600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G16 @ 11	11	10/8/90	19	--	<5	<50	--	200	41	210	46	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G17 @ 6	6	10/10/90	24.0	--	<5	<50	--	38	20	12	18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G18 @ 8	8	10/17/90	<2.5	--	<5	<50	--	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G19 @ 10	10	10/17/90	<2.5	--	<5	<50	--	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G20 @ 17	17	10/17/90	<2.5	--	<5	<50	--	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G21 @ 10	10	10/17/90	<2.5	--	<5	<50	--	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
G22 @ 10	10	10/17/90	<2.5	--	<5	87	--	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
D2 @ 4.5	4.5	10/8/90	<2.5	--	<5	<50	--	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
D3 @ 4.5	4.5	10/4/90	<2.5	--	<5	<50	--	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Waste Oil Tank Area																																							
3 @ 6	6	2/9/94	<1	<1	<1	27	<50	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
4 @ 11	11	2/9/94	<1	<1	<1	20	80	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
5 @ 6	6	2/9/94	240	<1	560	1,700	3,900	300	1,800	2,500	16,000	<5	36	29	16	590	2.7	0.13	<0.05	<0.05	<0.05	0.14	0.12	1.8	0.39	<0.05	0.45	0.26											
6 @ 11	11	2/9/94	31	<1	250	640	1,700	580	670	550	2,700	<5	8.0	8.4	45	3.7	0.18	<0.05	<0.05	1.6	0.15	0.14	2.5	<0.05	0.21	0.39	0.27												
7 @ 6	6	2/9/94	<1	<1	<1	<10	<50	<5	<5	<5	31	<5	<5	<5	<5	19	<0.05	<0.05	0.32	0.93	1.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			
8 @ 11.5	11.5	2/9/94	100	<1	680	1,100	2,700	360	300	1,300	6,700	--	--	--	--	21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
9 @ 6	6	2/9/94	<1	<1	<1	<10	<50	<5	<5	<5	<5	--	--	--	--	8.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
10 @ 11.5	11.5	2/9/94	6.5	<1	210	360	470	100	7.3	100	160	--	--	--	--	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
11 @ 13	13	2/9/94	15	<1	210	450	780	430	45	350	960	<5	<5	<5	7.6	60	0.39	<0.05	<0.05	<0.05	2	0.05	0.08	0.34	<0.05	<0.05	0.2	0.1											
Well Boring Samples																																							
MW1 @ 10	10	3/2/94	260	<1	<1	<10	--	<20	<20	970	770	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW2 @ 10	10	3/1/94	<1	<1	<1	<10	--	<90	<90	<5	<5	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
MW3 @ 10	10	3/1/94	620	<1	5.6	<10	--	<90	<90	840	2,700	7.4	<5	11	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW4 @ 10	10	3/2/94	1.9	<1	8.9	22	--	<20	<20	<5	<5	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW5 @ 4	4	6/23/97	<1	--	<1	--	--	<5	<5	<5	<5	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW5 @ 8	8	6/23/97	3.1	--	5.1	--	--	<5	<5	5.7	17	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW6 @ 6	6	6/23/97	<1	--	<1	--	--	<5	<5	<5	<5	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW6 @ 10	10	6/23/97	4.4	--	6.5	--	--	<5	<5	26	<5	<5	<5	<5	<5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
ESLs Residential Land Use ¹			100	100	100	370	370	120	9,300	2,300	11,000	7,800	220	370	1,500	200	0.25	2.8	35	NE	NE	40	8.9	1.3	NE	NE	11	85											
ESLs Commercial/Industrial Land Use ¹			180	180	180	2,500	2,500	270	9,300	4,700	11,000	7,800	480	950	1,500	750	0.25	2.8	120	NE	NE	40	8.9	2.8	NE	NE	11	85											

Notes

TPH = Total petroleum hydrocarbons
DCA = Dichloroethane
TCA = Trichloroethane
PCE = Tetrachloroethene
NE = No value established
mg/kg = milligrams per kilogram = parts per million
µg/kg = micrograms per kilogram = parts per billion
<1 = Chemical not present at a concentration greater than the laboratory detection limit shown or stated on test reports
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¹ = Table B Shallow Soil Screening Levels, Groundwater is not a Current or Potential Source of Drinking Water



Analyte	Units	Sample ID															Regulatory Criteria			
		TW-1	TW-2	TW-3	TW-4	TW-5	B-1†	B-2	B-3	B-4a	B-5	B-6†	B-7	B-8	B-9	B-10	B-12	ESLs ¹	ESLs ² Residential Land Use	ESLs ² Commerical/Industrial Land Use
Grab Groundwater Sample Depth	(feet)	9.0	9.0	9.0	9.0	9.0	18.3	19.5	13.5	11.9	11.3	19.1	11.2	11.5	15.3	11.7	11.2			
Date		5/31/1996	5/30/1996	5/30/1996	5/31/1996	5/30/1996	7/30/2009	7/31/2009	7/28/2009	7/28/2009	7/28/2009	7/30/2009	7/28/2009	7/28/2009	7/28/2009	7/28/2009	7/28/2009			
Petroleum Hydrocarbons																				
TVHg	µg/L	13,000	250	<50	11,000	70	41,000	1,300^Y	360^Y	10,000^{>LR,Y}	410^Y	4,400^Y	1,200^Y	6,800^Y	25,000^Y	1,400^Y	500^{Y,b}	210	NE	NE
TPHd	µg/L	37,000	<50	83	1,900	180	--	530^Y	7,600^Y	240,000	3,400	--	910^Y	290^Y	1,600^Y	59,000	27,000	210	NE	NE
TPHmo	µg/L	--	--	--	--	--	--	<300	25,000	110,000	1,500	--	400	<300	<300	33,000	13,000	210	NE	NE
Volatile Organic Compounds																				
Benzene	µg/L	<50	<0.5	<0.5	130	<0.5	630	<0.50	0.57	<0.50	<0.50	280	2.3	400	2,800	<0.50	<2.5 ^b	46	540	1,800
Toluene	µg/L	<50	<0.5	<0.5	66	<0.5	780	<0.50	0.65	0.58	<0.50	4.1	1.3	73	50	<0.50	<2.5 ^b	130	380,000	530,000
Ethylbenzene	µg/L	<50	13	<0.5	340	<0.5	910	<0.50	<0.50	0.75	<0.50	90	16	250	950	<0.50	<2.5 ^b	43	170,000	170,000
Xylenes	µg/L	380	3.4	<0.5	260	<0.5	3,700	<0.50	<0.50	0.66	<0.50	14.71	2.46	760	2,850	<0.50	<2.5 ^b	100	160,000	160,000
MTBE	µg/L	--	--	--	--	--	<13	<0.50	0.58	2.1	<0.50	1.6	<0.50	<3.1	<17	1.5	<2.5 ^b	1,800	24,000	80,000
TBA	µg/L	--	--	--	--	--	<250	32	<10	12	<10	19	18	<63	<330	<10	<50 ^b	18,000	NE	NE
TAME	µg/L	--	--	--	--	--	<13	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<3.1	<17	<0.50	<2.5 ^b	NE	NE	NE
DIPE	µg/L	--	--	--	--	--	<13	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<3.1	<17	<0.50	<2.5 ^b	NE	NE	NE
ETBE	µg/L	--	--	--	--	--	<13	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<3.1	<17	<0.50	<2.5 ^b	NE	NE	NE
1,2-DCA	µg/L	<1.0	<1.0	20	<1.0	<1.0	<13	<0.50	<0.50	1.0	<0.50	0.83	<0.50	3.8	<17	1.1	<2.5 ^b	200	200	690
1,2-DBA	µg/L	--	--	--	--	--	<13	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<3.1	<17	<0.50	<2.5 ^b	150	150	510
1,1,1-TCA	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	62	130,000	360,000
PCE	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	120	120	420
Chlorobenzene	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	--	--	--	--	--	--	--	--	--	--	--	25	13,000	37,000
Total Dissolved Solids	mg/L	--	--	--	--	--	880	770	880	1,200	520	730	990	720	770	970	460	NE	NE	NE

Notes:

TVHg = Total Volatile Hydrocarbons as gasoline
 TPHd = Total Petroleum Hydrocarbons as diesel
 TPHmo = Total Petroleum Hydrocarbons as motor oil
 DCA = Dichloroethane
 DBA = Dibromoethane
 MTBE = tert-Butyl methyl ether
 TBA = tert-Butyl alcohol
 DIPE = Diisopropyl ether
 ETBE = Ethyl tert butyl ether
 TAME = Methyl tert amyl ether
 TCA = Trichloroethane
 PCE = Tetrachloroethene

µg/L = micrograms per liter
 Detected concentrations are shown in **Bold**
 ND = Not detected at or above respective reporting limit
 < = not detected at or above the listed laboratory reporting limit
 NE = Not established
 -- Not Analyzed
 >LR = Response exceeds instrument's linear range
 Y = Sample exhibits chromatographic pattern which does not resemble standard
 b = Sample analyzed two minutes after hold time expired. No technical impact on sample data
 † = Sample for TPHd and TPHmo analysis were obtained from B-1, however sample container broke on way to laboratory.
 Sample for TPHd and TPHmo analysis were not obtained from B-6 due to inefficient groundwater recharge

ESLs = San Francisco Bay Regional Water Quality Control Board, Screening for Environmental Concerns at Sites with Contaminated Soil and Grounwater, Interim Final November 2007, Revised May 2008

¹ = Table F-1b Final Groundwater Screening Levels

² = Table E-1: Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (volatile chemicals only)

PLATES

DISPENSER ISLAND EXCAVATION

B-1 @ 12	Concentration
TPH	320 mg/kg
TPHd or mo	57 mg/kg
Benzene	ND

TELEGRAPH AVENUE

WASTE OIL TANK EXCAVATION

WS-5 @ 1	Concentration
TPH	240 mg/kg
TPHd or mo	1,700 mg/kg
Benzene	300 µg/kg
PNH (total)	5.50 mg/kg
PCE	29 mg/kg
Lead	500 mg/kg

WS-1 @ 1.5	Concentration
TPH	100 mg/kg
TPHd or mo	1,100 mg/kg
Benzene	300 µg/kg

WS-17 @ 11.5	Concentration
TPH	6.5 mg/kg
TPHd or mo	400 mg/kg
PNH (total)	3.16 mg/kg
PCE	ND
Lead	60 mg/kg

WS-1 @ 11	Concentration
TPH	15 mg/kg
TPHd or mo	400 mg/kg
PNH (total)	3.16 mg/kg
PCE	ND
Lead	60 mg/kg

WS-1 @ 12	Concentration
TPH	4.4 mg/kg
TPHd or mo	5.1 mg/kg

WS-1 @ 15	Concentration
TPH	1.4 mg/kg

WS-1 @ 15	Concentration
TPH	1.4 mg/kg

WS-1 @ 15	Concentration
TPH	1.4 mg/kg

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TPH	1.4 mg/kg

WS-1 @ 15	Concentration
TPH	1.4 mg/kg

WS-1 @ 15	Concentration
TPH	1.4 mg/kg

LEGEND

- ⊙ G5 APPROXIMATE LOCATION OF PREVIOUS SIDEWALL SAMPLE - 1990
- ⊙ G20 APPROXIMATE LOCATION OF PREVIOUS BOTTOM SAMPLE - 1990
- ⊙ B-1 APPROXIMATE LOCATION OF TEMPORARY WELL POINT
- ⊕ MONITORING WELL LOCATION
- ⊔ LIMITS OF EXCAVATION
- ▭ EXISTING STRUCTURE

Excavated to Depth of 11 ft bgs

Excavated to Depths Between 16 to 17 ft bgs

GASOLINE TANK EXCAVATION

G5 @ 10	Concentration	G14 @ 7.5	Concentration
TPH	270 mg/kg	TPHd or mo	100 mg/kg
Benzene	2,300 µg/kg		

G8 @ 15	Concentration	G17 @ 6	Concentration
TPH	6.3 mg/kg	TPH	24 mg/kg
Benzene	300 µg/kg	Benzene	30 µg/kg

G7 @ 11	Concentration	G18 @ 5	Concentration
TPH	6.3 mg/kg	TPHd or mo	ND
Benzene	270 µg/kg	TPHd or mo	ND

G6 @ 10	Concentration	G20 @ 17	Concentration
Benzene	10 µg/kg	TPHd or mo	ND

G10 @ 10	Concentration	G21 @ 10	Concentration
TPH	240 mg/kg	TPHd or mo	ND
Benzene	1,800 µg/kg		

G12 @ 10	Concentration	G22 @ 10	Concentration
TPH	60 mg/kg	TPHd or mo	87 mg/kg
TPHd or mo	110 mg/kg		
Benzene	110 µg/kg		

G13 @ 10	Concentration	B-7 @ 12	Concentration
TPH	12 mg/kg	TPHd or mo	1.6 mg/kg
TPHd or mo	220 µg/kg		
Benzene	500 µg/kg		

MW-8 @ 1.2	Concentration
TPH	390 mg/kg

MW-8 @ 15	Concentration
TPHd or mo	18 mg/kg

MW-5 @ 1.5	Concentration
TPH	170 mg/kg

MW-5 @ 15	Concentration
TPHd or mo	1.4 mg/kg

MW-6 @ 12	Concentration
TPH	4.4 mg/kg
TPHd or mo	6.5 mg/kg

WEST GRAND AVENUE

VALLEY STREET

CHEVRON STATION
2200 TELEGRAPH AVENUE

NORTH

FUGRO CONSULTANTS, INC
1000 Broadway, Suite 440, Oakland, California, 94607
Tel.: (510) 268-0461, FAX: (510) 268-0137

MAXIMUM CONCENTRATION OF DETECTED COMPOUNDS
2250 Telegraph Avenue
Oakland, California

Buttner Properties
04.B0609004 May 2012

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BASE MAP SOURCE: Aerial photograph provided by Google Earth Pro, 2012.

LEGEND



500 ft RADIUS AROUND SITE



Site



Residential



Parking



Residential over
 Commercial



Day Care



Commercial



Gas Station



Historical Gas Station



NORTH



FEET

CURRENT LAND USES

2250 Telegraph Ave
 Oakland, CA