



AEGIS ENVIRONMENTAL, INC.

1050 Melody Lane, Suite 160, Roseville, CA 95678



916 • 782-2110 / 916 • 969-2110 / FAX 916 • 786-7830

January 5, 1993

Ms. Christine K. Noma
Wendel, Rosen, Black, Dean & Levitan
Post Office Box 2047
Oakland, California 94612

Subject: **Cost Estimate For Well Installation and Sampling**
Corwood Car Wash
6973 Village Parkway, Dublin, California

Dear Ms. Noma:

Aegis Environmental, Inc. (Aegis), is pleased to submit this cost estimate for well installation and sampling at the subject site as requested in your letter to Aegis dated December 15, 1992. This cost estimate is for the scope of work outlined in Aegis' "Workplan For Installation of Groundwater Monitoring Wells" and the "Addendum to Aegis Workplan For Installation of Groundwater Monitoring Wells," dated November 2 and November 23, 1992, respectively. The work is proposed in response to a request from the Alameda Health Care Services Agency, Hazardous Materials Division (ACHMD), dated November 5, 1992.

BACKGROUND

In April 1991, four soil borings were drilled and sampled to depths ranging from 15 to 20 feet below ground surface (bgs) on site. The borings were drilled to assess subsurface conditions around two 10,000-gallon capacity underground fuel storage tanks. Petroleum hydrocarbons were detected in soil and groundwater samples collected and analyzed from the borings. Groundwater was found at a depth of approximately 15 feet bgs.

CORWOOD.COS

GEOLOGISTS • ENGINEERS • GROUNDWATER SCIENTISTS

PROPOSED WORK

In response to the ACHMD request, Aegis proposes installing and sampling three groundwater monitoring wells to a total estimated depth of 25 feet bgs. The work will be performed as outlined in the workplan and addendum indicated above.

The purpose of the wells is to assess the presence and extent of hydrocarbons in the shallow soil and, possibly, groundwater beneath the site. A results report will be prepared summarizing the data collected.

Also provided here are estimated costs for monthly groundwater level measurements for three months and quarterly groundwater monitoring and reporting for 1 year, as requested in the November 5, 1992, ACHMD letter.

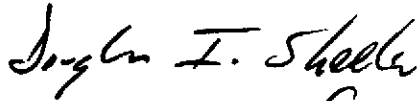
COST ESTIMATE

Attachment 1 outlines the estimated costs and key assumptions to perform the well installation and sampling. Costs will accrue on a time-and-materials basis, not to exceed the total estimated cost without approval. Invoices will be sent monthly, according to the terms of Aegis' general services agreement, to be prepared upon acceptance of this cost estimate.

We appreciate the opportunity to provide geologic, engineering, and environmental consulting services, and trust this response meets your needs. If you have any questions or comments, please do not hesitate to call us at (916) 782-2110.

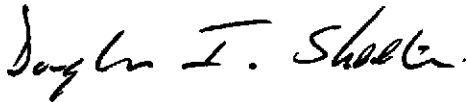
Sincerely,

AEGIS ENVIRONMENTAL, INC.



Paul K. Graff
Senior Geologist

for



Douglas I. Sheeks
Senior Geologist
CRG No. 5211

PKG/DIS/law

Attachments

ATTACHMENT 1
COST ESTIMATE AND KEY ASSUMPTIONS

Summary

Deck 1	\$515
2	2148
3	1,535
4	HOLD
	\$ 10,198

+ 200 stringing in drums

- 100 Total lead only, no STL

2 1/2" well vs. 4 1/2" well

- 975 For 2 inch wells

Total \$ 9,323

Groundwater Monitoring Well Installation and Sampling
Corwood Car Wash
6973 Village Parkway, Dublin, California
December 29, 1992

Task 1: Project Management and Permitting

Aegis Professional Services

Category	Units	# Units	Cost / Unit	Cost
Senior Professional	hr	4	\$90.00	\$360.00
Staff Professional	hr	2	\$65.00	\$130.00
Clerical	hr	1	\$25.00	\$25.00

Total Services

\$515.00

TASK 1 TOTAL

\$515.00

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Task 2: Well Installation and Sampling
 Three 4-inch diameter, 25-foot deep groundwater monitoring wells

Aegis Professional Services

Category	Units	# Units	Cost / Unit	Cost
Senior Professional	hr	1	\$90.00	\$90.00
Staff Professional	hr	20	\$65.00	\$1,300.00

Total Services

\$1,390.00

Aegis Expenses

Category	Units	# Units	Cost / Unit	Cost
Mileage (160 miles roundtrip)	miles	160	\$0.50	\$80.00
Sampling Tubes	each	6	\$8.00	\$48.00
Per Diem	day	1	\$80.00	\$80.00
OVA/PID	day	2	\$75.00	\$150.00
Misc. Expenses	item	1	\$50.00	\$50.00

Total Aegis Expenses

\$408.00

Outside Expenses

Category	Units	# Units	Cost / Unit	Cost
Analytical Laboratory (TPH as Gasoline, Diesel, BTEX)	item	6	\$150.00	\$900.00
ISPEC Lead TCLP BTEX, RCI) Total lead	item	1	\$350.00	\$350.00
Drilling Subcontractor	item	1	\$4,000.00	\$4,000.00
Well Surveying	item	1	\$500.00	\$500.00
Rinse Water Disposal	item	1	\$200.00	\$200.00
Soil Disposal	item	1	\$400.00	\$400.00

Total Outside Expenses

\$6,350.00

TASK 2 TOTAL

\$8,148.00

4" well vs. 2" well

difference in cost of material
 minimal difference
 time spent drilling is same
 2" casing more troublesome
 smaller bailer

\$1,975⁰⁰ cheaper per contractor

To store soil on site
 \$40 per drum
 4-5 drums
 \$200⁰⁰ extra

- (\$100) cheaper
 < \$975 > if only
 2" well Total
 lead

disposal
 reg' STLE
 but risk
 of in place

Groundwater Monitoring Well Installation and Sampling
Corwood Car Wash
6973 Village Parkway, Dublin, California
December 29, 1992

Task 3 : Preparation of Results Report

Aegis Professional Services

Category	Units	# Units	Cost / Unit	Cost
Principle Professional	hr	1	\$100.00	\$100.00
Senior Professional	hr	2	\$90.00	\$180.00
Staff Professional	hr	15	\$65.00	\$975.00
Draftsman	hr	6	\$30.00	\$180.00
Clerical	hr	4	\$25.00	\$100.00

Total Services

\$1,535.00

TASK 3 TOTAL

\$1,535.00

Groundwater Monitoring Well Installation and Sampling
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Task 4 : Quarterly Monitoring and Reporting
 Measure groundwater levels monthly for one quarter (3 months)
 Monitor and sample 3 wells quarterly for one year (four quarters)
 Prepare quarterly monitoring reports

> hold

Aegis Professional Services

Category	Units	# Units	Cost / Unit	Cost
Principal Professional (0.5 hr/qtr)	hr	1.5	\$100.00	\$150.00
Senior Professional (1 hr/qtr)	hr	3	\$90.00	\$270.00
Staff Professional (5 hrs/qtr)	hr	15	\$65.00	\$975.00
Technician (4 hrs/mo for 3 mo., 8 hrs per quarter)	hr	44	\$45.00	\$1,980.00
Field Supervisor (0.5 hr/qtr)	hr	2	\$55.00	\$110.00
Draftsperson (1 hr/qtr)	hr	4	\$30.00	\$120.00
Clerical (1 hr/qtr)	hr	4	\$25.00	\$100.00
Total Services				\$3,705.00

Aegis Expenses

Category	Units	# Units	Cost / Unit	Cost
Mileage (160 mi. roundtrip x 4 trips)	miles	640	\$0.50	\$320.00
Rope	feet	300	\$0.10	\$30.00
Water Level Indicator	item	4	\$20.00	\$80.00
Disposable Bailers	item	12	\$10.00	\$120.00
pH Meter	day	4	\$10.00	\$40.00
Misc. Expenses	item	1	\$30.00	\$30.00
Total Aegis Expenses				\$620.00

Outside Expenses

Category	Units	# Units	Cost / Unit	Cost
Analytical Laboratory (3 samples/qtr for TPH as gasoline, diesel, and BTEX)	item	12	\$150.00	\$1,800.00
Purge Water Disposal	per quarter	4	\$200.00	\$800.00
Total Outside Expenses				\$2,600.00

TASK 4 TOTAL

\$6,925.00

TOTAL COST ESTIMATE

\$17,123.00

KEY ASSUMPTIONS:

- The three wells to be installed, sampled, and developed in 2 days, requiring no more than 20 hours, including travel time. Driller subcontractor costs not to exceed \$4,000.
- Well locations and elevations to be surveyed by a licensed surveyor. Surveying costs not to exceed \$500.
- No more than two soil samples from each boring (total of six samples) to be submitted to a state-certified laboratory for analysis of total petroleum hydrocarbons (TPH), as gasoline and diesel, and benzene, toluene, ethylbenzene, and total xylenes (BTEX).
- Soil from drilling to be temporarily stockpiled on site, on and covered by plastic sheeting. Soil to be disposed of as non-hazardous material at a Class II or III landfill, with STLC lead, TCLP, BTEX, and RCI as maximum additional analyses required. Soil disposal costs, including loading and hauling, not to exceed \$400.
- Rinse and development water from well drilling to be temporarily stored on site in covered, labeled, Department of Transportation (DOT)-approved, 55-gallon drums. Water hauling and disposal cost not to exceed \$200.
- One year (four quarters) of quarterly groundwater monitoring, sampling, and reporting to be conducted according to regulatory agency guidelines. One groundwater sample from each well (total of three wells) will be collected each quarter and submitted to a state-certified laboratory to be analyzed for TPH, as gasoline and diesel, and BTEX.
- Purgewater from groundwater sampling to be temporarily stored on site in covered, labeled, DOT-approved, 55-gallon drums. Drums will be emptied quarterly, but remain on site for the next sampling episode. Water hauling and disposal costs not to exceed \$200 per quarter.
- Aegis to prepare a results report following the initial well drilling, and three more quarterly monitoring reports. Reports will conform to agency guidelines, and be submitted to client, in draft form, for review prior to finalization and submittal to regulatory agencies.