R.T. NAHAS COMPANY *Since 1947*
REAL ESTATE DEVELOPERS AND INVESTORS

20630 PATIO DRIVE
CASTRO VALLEY, CALIFORNIA 94546
TELEPHONE (510) 538-9600
FAX (510) 881-7618

June 5, 1998

Mr. Scott Seery
Hazardous Materials Specialist
Alameda County Health Care Services
1131 Harbor Bay Pkwy., Room 250
Oakland, CA 94502-6577

RE: Unocal Station
20405 Redwood Road
Castro Valley, CA

Dear Scott:

Enclosed is the Soil Vapor Emission Rate Survey and Tier 3 Risk Assessment for your review. I sent a copy off to the State as they are the ones who will have to approve the cost. Item 3, under "Estimated Fees," seems extremely high, but then what do I know about soil vapor samples other than those taken from baby diapers?

I await your review and approval.

Sincerely,

Randall E. Nahas

REN/hrs

Enclosure

BSK
1181 Quarry Lane, Building 300
Pleasanton, CA 94566
(925) 462-4000 • FAX (925) 462-6283

June 4, 1998

BSK PROPOSAL 04400163A

R. T. Nahas Company/Eden Managements
20630 Patio Drive
Castro Valley, CA 94546

Attention: Mr. Randy T. Nahas

Subject: Proposal
Soil Vapor Emission Rate Survey and
Tier 3 Risk Assessment
Unocal 76 Service Station
20405 and 20629 Redwood Road
Castro Valley, California

Gentlemen:

In response to your request for proposal (RFP), we are pleased to submit this proposal to perform a Soil Vapor Emission Rate Survey and Tier 3 Risk Assessment for the subject property.

PURPOSE AND SCOPE OF WORK

The purpose of the proposed work is to provide an estimation of Soil Vapor Emission Rate resulting from on-site and off-site residual petroleum hydrocarbon contamination. The soil vapor emission rate will be utilized to determine the potential risks resulting from the inhalation of vapors via the indoor air and outdoor air exposure routes. The risk assessment will be based on an excess cancer risk target level of 1×10^{-5} and a hazard quotient of 1.

The scope of work is based on recommendations made by BSK in the Addendum to Revised Corrective Action Plan, dated January 20, 1998 and a letter from Mr. Scott Seery of Alameda County Health Care Services, dated March 9, 1998.

Soil Vapor Emission Rate Survey

The Soil Vapor Emission Rate Survey will be based on guidelines in the document Measurement of Gaseous Emission Rates from Land Surfaces Using an Emission Isolation Flux Chamber, Users Guide, EPA/600/8-86/008, dated February 1986.

The Soil Vapor Emission Rate Survey will include the following:

- Prepare and submit a workplan to Alameda County Health Cares Services for approval.
- Excavate a total of 10 test holes at locations south and west of the gasoline underground storage tank locations. At least 2 of the test holes will be located above the underground utility line corridor. The test hole will be excavated such as to expose the native soils just

below the asphalt pavement and aggregate baserock. Excavation will be performed two days prior to sample collection to allow the vapor emission rate of the subsoils to achieve a state of equilibrium.

- A total of 10 soil vapor samples will be collected using an emission isolation flux chamber. The sample collection will be performed by C.E Schmidt, Ph.D assisted by BSK personnel. The collected soil vapor samples will be submitted to Air Toxics Inc. for analysis using method TO-14.

- A mean vapor emission rate for chemicals of concern (COC); Benzene, Toluene, Ethyl benzene, Xylenes will be calculated for each zone area sampled.

Tier 3 Risk Assessment

The mean vapor emission rate for COCs will be utilized in the preparation of a Tier 3 health risk assessment. The Tier 3 health risk assessment will be based on commercial/industrial inhalation exposures with target levels of less than 1×10^{-5} for carcinogens and chronic hazard quotient of less than 1.0 for noncarcinogens. In order to reflect State of California cancer slope criteria for benzene, a cancer slope factor (SFo) of 0.10 /mg/kg-d will be utilized in the model as opposed to the default value of 0.029 /mg/kg-d. Cumulative risks for the COCs will be determined for the exposure pathways of vapor intrusion into commercial buildings and vapor exposure to outdoor air.

ESTIMATED FEES

Our fees for this work will be computed on a Time and Expense Basis in accordance with our current Fee Schedule. Based on this schedule, we estimate that the fees for the scope of work are outlined below and provided in detail on the attached Cost Estimate. The cost estimate prepared by C.E. Schmidt is provided as an attachment.

1.	Preparation of Workplan	$ 432.00
2.	Prepare Test Sites	1,240.00
3.	Collect 10 Soil Vapor Samples and 2 QA/QC Samples	9,570.00
4.	Analytical Testing (Normal 10-day Turn Around Time)	3,360.00
5.	Tier 3 Risk Assessment	2,078.00
	ESTIMATED FEE	$16,680.00

SCHEDULE

We are prepared to commence work on this project within two weeks of your authorization to proceed. Our proposed project schedule would be as follows:

1.	Workplan Preparation	Completed 3 weeks After Notice-to-Proceed
2.	Excavate and Collect Soil Vapor Samples	Completed 2 weeks After Workplan Approval
3.	Submittal of Report	Completed 6 weeks After Workplan Approval

GENERAL CONDITIONS

We have assumed that we will have unimpeded access to the subject property during the course of the investigation.

Please sign in the space provided on the "Authorization and Acceptance" form attached to this proposal to indicate your approval of the scope of services and acceptance of our Terms and Conditions. Please return a signed, completed copy of the proposal and attachments to us, as our authorization to proceed with this assignment.

BSK appreciates the opportunity to submit this Proposal for your consideration and look forward to assisting you on this project. Should you have questions regarding the Proposal, please contact us.

Respectfully submitted,
BSK & Associates

Martin B. Cline, C.E.G
Project Geologist

Alex Y. Eskandari, P.E.
Manager - Geo-Environmental Services

MBC
(F:\DOCUMENT\ENV\DATA\REPORTS\NAHAS\04400163.TR3)

Attachments:
BSK Cost Estimate
C.E. Schmidt Cost Estimate
Authorization and Acceptance Form

BSK

AUTHORIZATION AND ACCEPTANCE

The proposed scope of services, fee, schedule and General Conditions presented in Confirming Proposal 04-40-0163A are acceptable and BSK is authorized to proceed with the above referenced scope of work at the Unocal 76 Service Station in Castro Valley, California.

By:_____ _____

Signature*

For:_____ _____

Date

* Individual with authority and responsibility for payment of BSK & Associates' invoices.

BSK

Cost Estimate, Soil Vapor Emisson Rate Survey, Tier 3 Risk Assessment

Task	Personnel	Hrs/Units	Cost/hr-unit	Units	Total/Row	Total
Prepare Workplan	Project Prof.	4	$88.00	hr	$352.00	
	Drafting	2	$40.00	hr	$80.00	**$432.00**
Prepare Test Sites	Contractor	1	$400.00	each	$400.00	
	Project Prof.	6	$88.00	hr	$528.00	
	Technician	6	$52.00	hr	$312.00	**$1,240.00**
Collect Soil Vapor Samples	Project Prof.	12	$88.00	hr	$1,056.00	
Backfill Test Holes	C.E Schmidt	1.15	$5,616.00	each	$6,458.40	
	Materials	1	$200.00	each	$200.00	
	Compactor	1	$200.00	each	$200.00	
	Technician	8	$52.00	hr	$416.00	**$9,570.40**
Chemical Analysis	Analytical Costs	12	$280.00	each	$3,360.00	**$3,360.00**
Tier 3, Report Preparation	Senior Prof.	1	$98.00	hr	$98.00	
	Project Prof.	20	$88.00	hr	$1,760.00	
	Drafting	2	$42.00	hr	$84.00	
	Clerical	4	$34.00	hr	$136.00	**$2,078.00**
					Total:	**$16,680.40**

C. E. SCHMIDT, Ph. D
Environmental Consultant

June 3, 1998

Mr. Marty Cline
BFk & Associates
1181 Quarry Ln., Suite 300
Pleasanton, CA 94566

Dear Mr. Cline:

Thank you for the opportunity to team with BFk & Associates providing technical services on the Castro Valley project regarding assessment of flux from the subsurface groundwater plume contamination. The proposed technical service includes measuring flux with the US EPA surface emission isolation flux chamber at 10 locations.

My activities on the proposed program would include: preparation of a technical Work Plan; preparation for field testing using the US EPA flux chamber equipment; conducting testing at up to 10 locations (plus a blank and replicate QC sample) assuming grab sample collection (i.e., canister); reviewing the data; and preparing a technical memorandum reporting the testing activities and test results.

The flux chamber technology is the ideal assessment tool for quantitating the flux of volatile organic compounds (VOCs) including benzene, ethylbenzene, toluene, and zylenes (BTEX). The detection limit of EPA TO-14 (the recommended sample collection and analytical technique) at 0.5 ppbv or less for compounds affords flux sensitivity in the 0.2-to-0.6 ug/m2,min-1 range. As input to area source assessment and when used with a recommended dispersion model, these detection limits provide for a highly sensitive exposure assessment supporting a health risk assessment or other project needs.

The cost estimate for the proposed program includes: preparation for testing, field testing, and reporting. These costs reflect the fore mentioned scope of services and do not include costs for laboratory analysis or delays due to foul weather or construction (cutting of concrete). The base program includes one day of testing.

A written contract needs to be prepared and signed prior to work on the program. We should try to allow a two week notice prior to field testing in order to avoid schedule conflicts and obtain field supplies.

19200 Live Oak Road • Red Bluff, California 96080 • (530) 529-4256 • Fax (530) 529-4878

One additional note regarding the surface preparation. Since the parking lot cover will most likely be removed using a wet cutting wheel, please schedule surface preparation (cutting/removal of concrete) 48 hours prior to flux chamber testing. This will provide data collection within the EPA recommended rainfall criteria (less than 0.1" precipitation for prior 48 hours).

If you have any questions regarding this estimate, please feel free to call. A copy of my resume and/or qualifications statement is available on request. I look forward to successfully completing this work with BFK & Associates.

Sincerely,

CE Schmidt (ENS)

CE Schmidt, Ph.D.

Table 1. Summary of Sampling Schedule.

TEST CONDITION	SAMPLE TYPE	COMMENT
On-site	10, TO-14, grab canister	Representative Flux*
Blank Tests	1	5% Frequency
Replicates Tests	1	5% Frequency
TOTAL SAMPLES	12	

* = Maximum Testing Program, actual number my vary depending on data needs of health risk persons and site complexity.

PROJECT COST ESTIMATE

LABOR- PROGRAM BASED ON 1 FIELD TEST DAY

AIR EMISSION TESTING

TASK 1

1) Planning/Protocol Preparation	8 hrs

TASK 2

1) Equipment Preparation	2 hrs
2) Travel	4 hrs
3) Field Testing	12 hrs

TASK 3

1) Preparation of Technical Memorandum		
CES		8 hrs
Clerical		2 hrs
TOTAL HOURS:	CES 34 hours @ $135/hr	$4,590.00
	Clerical 2 hours @ $30/hr	$60
TOTAL LABOR:		**$4,650.00**

EQUIPMENT

1) Flux Chamber Rental ($400 each)	$400.00
2) Teflon Tubing (25' @ $2.00/foot)	$50.00
3) Shipping	$100.00
4) UHP Air (1, size #150, $100 each)	$100.00
TOTAL EQUIPMENT COSTS:	**$650.00**

LABORATORY

1) Method TO-14; BTEX	N/A

LABORATORY SERVICE TOTAL

TRAVEL

1) Automobile (800 miles @ $0.27 per mile)	$216.00
2) Per Diem - 1 day	$100.00
TOTAL TRAVEL:	$316.00

TOTAL COST ESTIMATE SUMMARY

LABOR	$4,650.00
EQUIPMENT	$650.00
LABORATORY	N/A
TRAVEL	$316.00
TOTAL COST ESTIMATE	$5,616.00

NOTE- All cost estimates are based on a verbal scope-of-services for preparation, travel, 1 day of flux chamber testing, and reporting (Technical Memo). Some costs are estimates based on recent projects. Actual costs will be billed and a refined cost estimate can be provided (if needed) for the contract. This cost estimate assumes that BFK & Associates will make all site arrangements and preparations (orientation, selection of sample locations, site access).