Project No.
4186-F5

August 18, 1997

Mr. Brian Oliva
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Subject: 5277 and 5293 Crow Canyon Road
Castro Valley, California

RISK MANAGEMENT PLAN

Dear Mr. Holt:

In accordance with the requirements of the Alameda County Environmental Health Services Department, ENGEO Incorporated has prepared this risk management plan for the planned residential grading project, located in Castro Valley, California (Figure 1). This document addresses the following issues:

- *Potential worker exposure from possible residual levels of petroleum hydrocarbons at the former Parker's Shell Station site (Figure 2).*
- *Potential exposure of future homeowners to hydrocarbons and volatile aromatic compounds from the former service station site.*
- *Potential worker exposure to residual levels of petroleum hydrocarbons and lead associated with ±300 cubic yards of import fill material on parcel 085-5300-004-02 (5277 Crow Canyon Road).*
- *Potential exposure of future homeowners from the impacted fill material (5277 Crow Canyon Road).*

RESIDENTIAL GRADING ACTIVITIES

A tentative map has been submitted to Alameda County for the proposed 38 unit residential subdivision, which has been conditionally approved (Figure 3). Proposed site grading includes engineered cuts and fills up to about 10 feet deep and 16 feet thick at the site, respectively. The proposed cut slopes are about 5 feet high with the fill slopes up to 16 feet high. These slopes would be constructed at a slope gradient of 2:1 (horizontal:vertical). Retaining walls, up to 12 feet high, will also be constructed at the site. In addition to the conventional grading associated with the residential pad development, overexcavation and recompaction of fill material within the areas of the former underground storage tanks is also required. This additional grading work is necessary to address potential differential fill conditions.

IMPORT FILL MATERIAL (5277 CROW CANYON ROAD)

ENGEO conducted phase I/II environmental site assessments of this property in 1996. An updated site assessment report was also prepared by ENGEO in 1997 which addressed both the 5277 Crow Canyon property and the former Shell Service Station site. Communications with the former property owner determined that ±300 cubic yards of fill material was placed on the site to develop a truck trailer parking pad (Figure 2). It was determined that this fill was imported from the former Del Monte Cannery site in Oakland, California. Because the Del Monte site was listed by the State of California as a Leaking Underground Stored Tank Site (LUST), ENGEO recommended sampling and laboratory testing of the fill material (Appendix B).

The scope of the fill characterization included the excavation of four test pits, along with the recovery of one composite and one discrete soil sample. The soil samples were submitted for the following analyses:

- Total Volatile/Extractable Hydrocarbons
- BTEX
- LUFT Metals

Table I provides a summary of the laboratory analyses:

TABLE I
Soil Sample Laboratory Analysis Summary
(Concentrations Reported in Parts Per Million)

SAMPLE	GAS	DIESEL	OIL	BENZ	TOL	E. BENZ	XYL.	CR	PB
TP-1,2,3,4	<1.0	**43**	**150**	<.0025	<.0025	<.0025	<.0025	**38**	**100**
S1	**1.7**	**37**	**71**	**.0027**	**.087**	**.013**	**.019**	**23**	**69**

Given the reported lead concentration for sample TP-1,2,3,4 the fill was resampled in June 1997 for soluble lead analysis. No soluble lead was reported above the laboratory detection limit of 1.0 ppm.

Based on our review of the test results, ENGEO recommended that the material be reused as engineered fill placed outside of residential pad areas. Figure 3 provides the proposed location of the fill placement along with a diagrammatic cross section.

RISK MANAGEMENT MEASURES

Worker Safety - Site Grading

Grading observation work will be conducted by an ENGEO geotechnical field technician trained in accordance with 29 CFR 1910.120 and GISO 5192. The field technician will maintain a site-specific health and safety plan on-site during grading activities at the former Shell site and during excavation and placement of the aforementioned import fill material on parcel 004. A

photoionization detector will be maintained on-site during field activities to monitor for organic vapors. The hydrocarbon vapor criteria provided as an attachment will be used to address significant vapor readings. If organic vapor levels in excess of applicable regulatory exposure criteria are encountered, work activities will be discontinued until remedial measures are developed in cooperation with ACDEHD

Potential Exposures to Future Homeowners

As a conservative measure, vapor barriers consisting of 20 mil thick visqueen will be placed beneath the foundation structures. These vapor barriers will serve as engineering controls for both potentially adverse differential moisture conditions and the possible migration of volatile organic compounds.

In addition to the designed engineering controls, we understand the property owner will provide the applicable real estate disclosures regarding the former service station site.

It should be recognized that based on the studies conducted to date, no worker exposures from residual hydrocarbons are expected. In addition, health risk assessment data prepared for the former Shell Service Station found no calculated health risks associated with the property.

We are pleased to be of continued service to you regarding this project. If you have any questions regarding the risk management plan, please contact our office. A copy of this plan should be provided to the Alameda County Department of Environmental Health for their review.

Very truly yours,

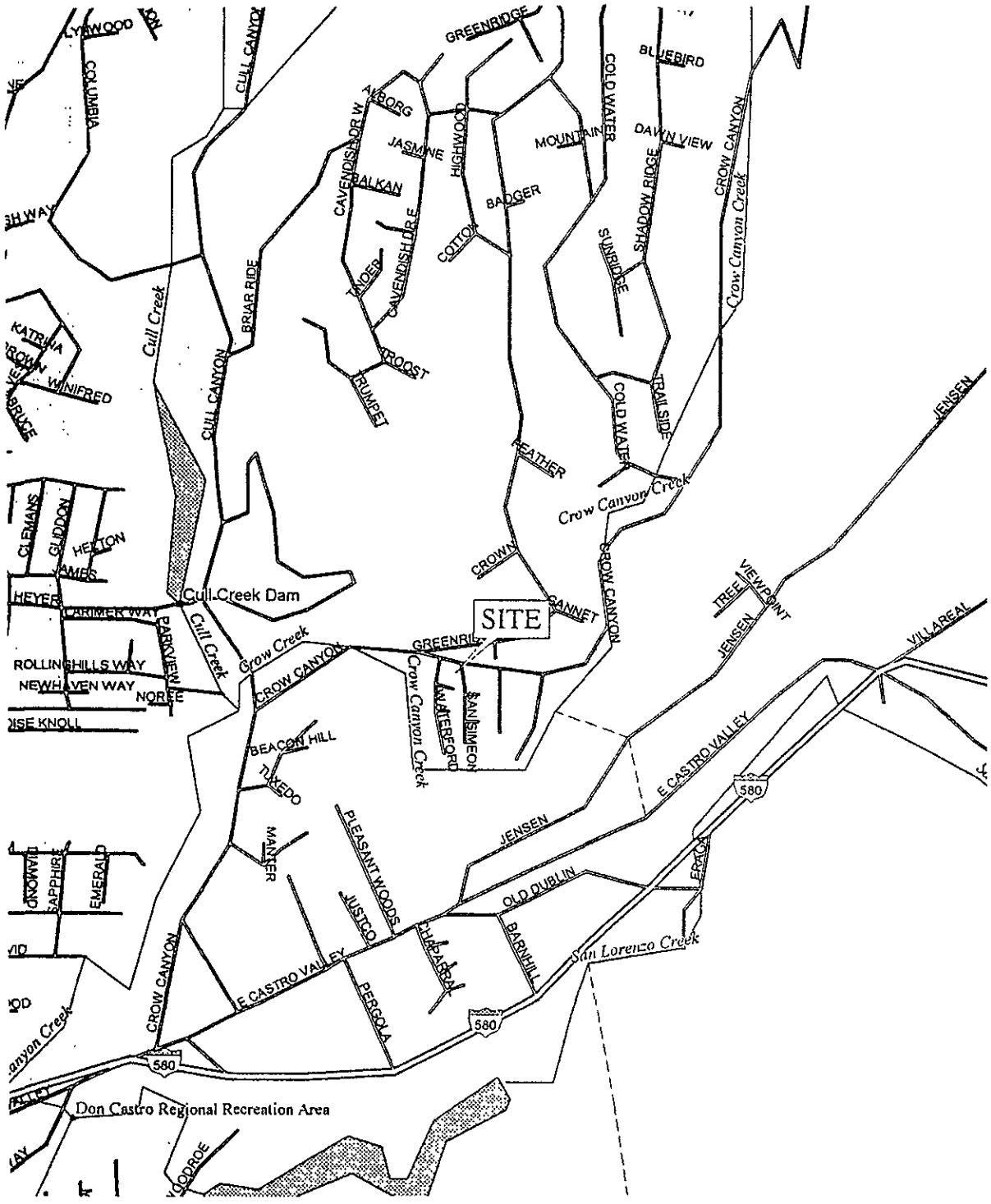
ENGEO INCORPORATED

Shawn Munger
Manager, Environmental Services
REA 2070
CHG 413

Reviewed by:

Brian Flaherty
Vice President

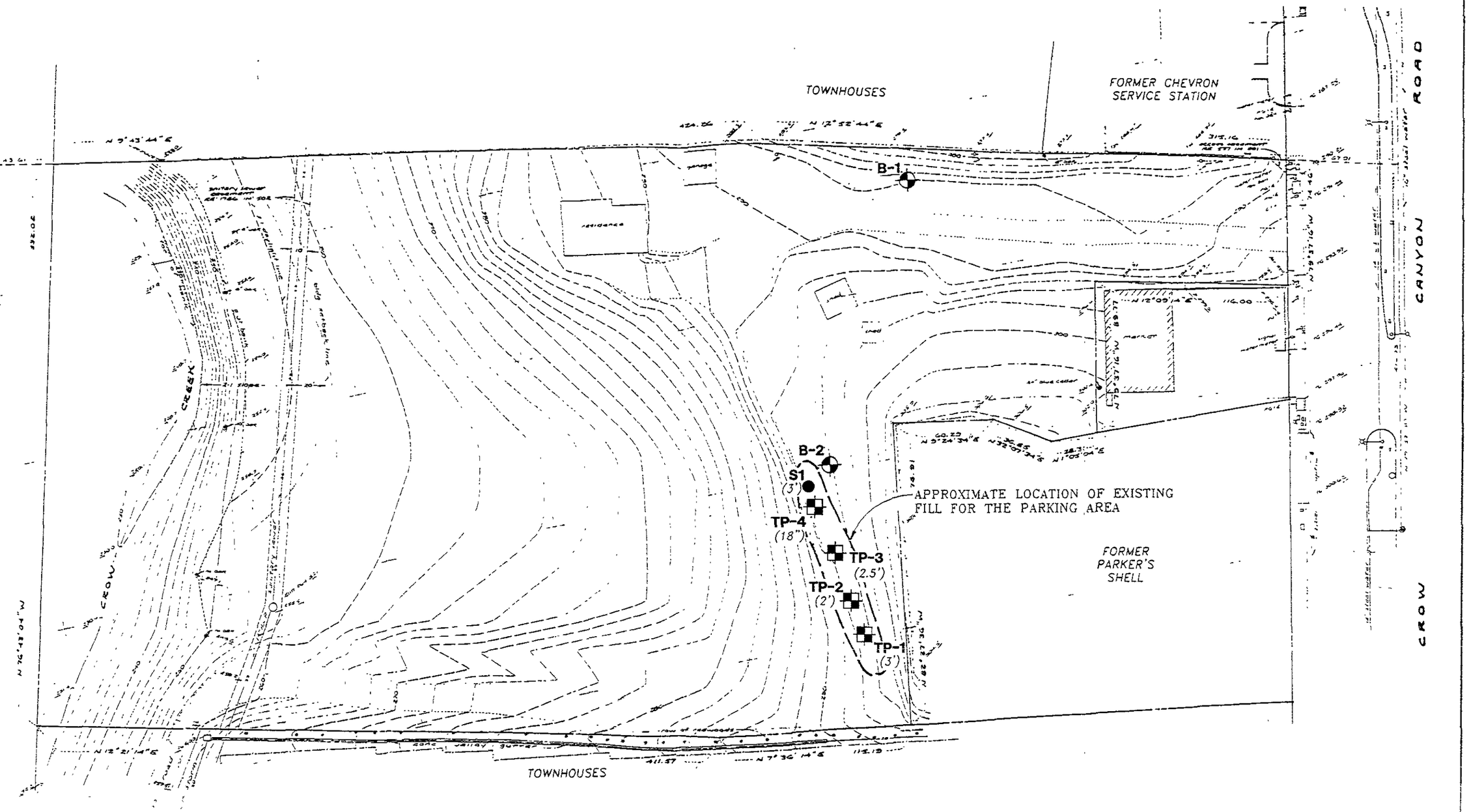
Attachments: Figures 1 – 3, Phase II reports
cc: 1 – Sue Schaffer, Western Pacific Housing
1 – Amy Leech, Alameda County Department of Environmental Health
1 – Roger Holt, Ervin, Cohen & Jessup LLP



N

N.T.S.

ENGEO INCORPORATED	SITE LOCATION TRACT 6910, CROW CANYON ROAD CASTRO VALLEY, CALIFORNIA	JOB NO.: 4186-F5 DATE: AUGUST 1997 DRAWN BY: CHECKED BY:	FIGURE NO. 1



EXPLANATION

B-2 — APPROXIMATE LOCATION OF BOREHOLE

TP-4 (3') — APPROXIMATE LOCATION OF TEST PIT WITH DEPTH OF SOIL SAMPLE

S1 (3') — APPROXIMATE LOCATION OF SOIL SAMPLE WITH DEPTH SAMPLE WAS TAKEN

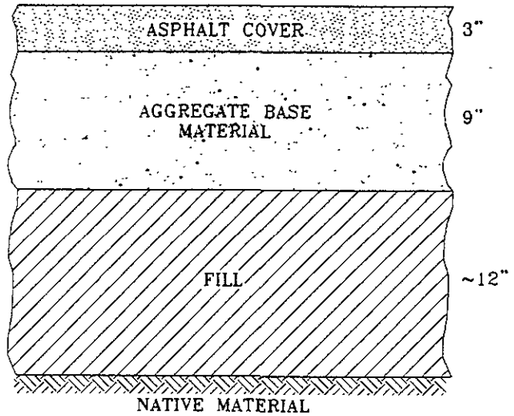
SOURCE GREENWOOD & MOORE, INC. TOPOGRAPHIC SURVEY JOB NO. 96145 DATED 10/18/96

ENGEO INCORPORATED

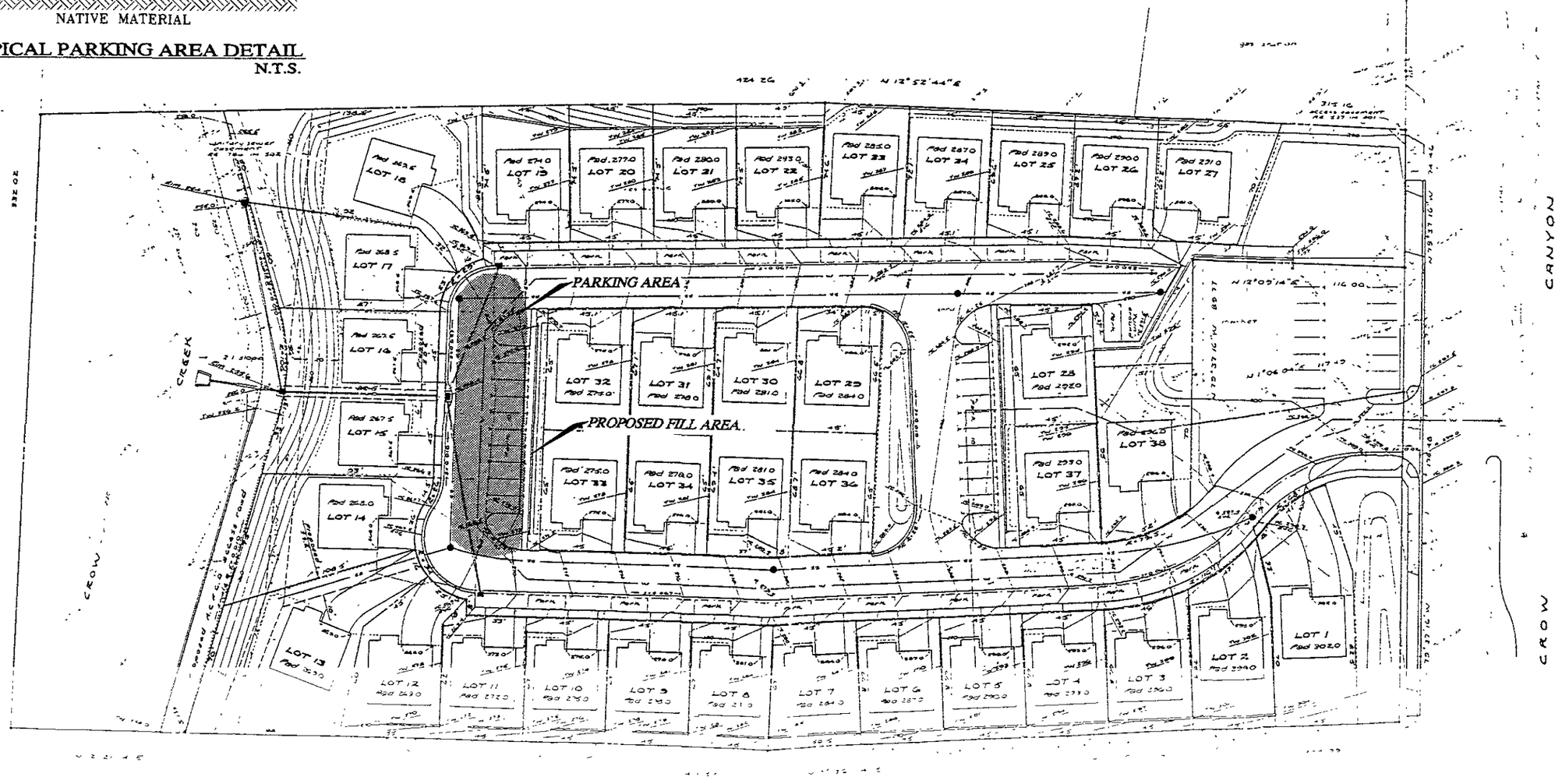
SITE PLAN
CASTRO VALLEY PROPERTY
5277 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

JOB NO. 4186-F2A
DATE AUGUST 1997
DRAWN BY ____ CHECKED BY ____

FIGURE NO. 2



TYPICAL PARKING AREA DETAIL
N.T.S.



SOURCE GREENWOOD & MOORE NO

N T S.

ENGEO INCORPORATED

TENTATIVE MAP
TRACT 6910, CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

JOB NO 4186-F5
DATE AUGUST 1997
DRAWN BY CHECKED BY

FIGURE NO 3

CHROMALAB, INC.

Environmental Services (SDB)

25

June 16, 1997 *Submission #:* 9706122

ENGEO, INC.

Atten: Shawn Munger

Project: STOKER PROPERTY *Project#:* 4186-F2
Received: June 11, 1997

re: 1 sample for STLC Lead analysis.
Method: *EPA 3005A/7420A*

Matrix: SOIL *Extracted:* June 16, 1997
Sampled: June 11, 1997 *Run#:* 7299 *Analyzed:* June 16, 1997

Spl#	CLIENT SPL ID	LEAD (mg/L)	REPORTING LIMIT (mg/L)	BLANK RESULT (mg/L)	BLANK SPIKE (%)	DILUTION FACTOR
135410	S1	N.D.	1.0	N.D.	109	1

Shafi Barekzai
Chemist

John S. Labash
Inorganics Supervisor

510-838-7425 PM 08/18

1220 Quarry Lane • Pleasanton, California 94566-4756
(510) 484-1919 • Facsimile (510) 484-1096
Federal ID #68-0140157

06122/13:41:10

34141

ENGEO INCORPORATED
2401 CROW CANYON ROAD, SUITE 200
SAN RAMON, CALIFORNIA 94583
PHONE (510) 838-1600

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 4186-F2
PROJECT NAME: Stoker Property
SAMPLED BY (SIGNATURE): Shawn Murger

SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	TPH – GASOLINE (EPA 8015/5030)	TPH – DIESEL (EPA 8015/3550/3510)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625,8270)	TOTAL OIL & GREASE (SMWW 5520(F).)	OC PESTICIDES/PCB (EPA 608, 8080)	OP PESTICIDES (EPA 614/8140)	TITLE 26 METALS (17)	PRIORITY METALS (13)	X STLC LEAD
S1	6-1-97	11:15	S	4	2"x6"	ICE												X

JOB #: 9706122 REP: PM
CLIENT: ENGEO
DATE: 06/18/97
REF #: 34141

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
	6-1-97 13:58				
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
	6/4/97 1732	Chris Rowley			
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE/TIME	REMARKS	
				5-DAY TAT	

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT; COPY TO PROJECT FIELD FILES

CHROMALAB, INC.
Environmental Service (SDB)

Sample Receipt Checklist

Client Name: **ENGEO, INC.** Date/Time Received: **06/11/97** 1358

Reference/Submis: **34141** / **9706122** Received by: BM

Checklist completed by: Chris Rowley 6/12/97 Reviewed by: MN 6/12
Signature Date Initials Date

Matrix: Soil Carrier name: Client - C/L

Shipping container/cooler in good condition?	Yes ✓	No	Not Present
Custody seals intact on shipping container/cooler?	Yes	No	Not Present ✓
Custody seals intact on sample bottles?	Yes	No	Not Present ✓
Chain of custody present?	Yes ✓	No	
Chain of custody signed when relinquished and received?	Yes ✓	No	
Chain of custody agrees with sample labels?	Yes ✓	No	
Samples in proper container/bottle?	Yes ✓	No	
Sample containers intact?	Yes ✓	No	
Sufficient sample volume for indicated test?	Yes ✓	No	
All samples received within holding time?	Yes ✓	No	
Container/Temp Blank temperature in compliance?	Temp: 30 °C Yes ✓	No	
Water - VOA vials have zero headspace?	No VOA vials submitted ✓ Yes	No	
Water - pH acceptable upon receipt?	Adjusted?	Checked by	
		chemist for VOAs	

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: _____ **Date contacted:** _____ **Person contacted:** _____

Contacted by: _____ **Regarding:** _____

Comments: _____

Corrective Action: _____

SITE HEALTH AND SAFETY PLAN

I. PROJECT INFORMATION

Project Number: 4186-F5	**Date:** August 18, 1997
Project Name: 5277/5293 Crow Canyon Road	**Client:** Western Pacific Development
Contact: Sue Schaffer	**Phone:** 510-737-1080
Site Location: 5277 & 5293 Crow Canyon Road - Castro Valley, California	
Site Description: Former service staiton and residential site; proposed residneital subdivision	

Type of Work:

- ☐ **Soil Borings (geotechnical)**
- ☐ **Soil Borings (environmental)**
- ☐ **Piezometer Installation**
- ☒ **Other**: Residential grading
- ☐ **Monitoring Well Installation**
- ☐ **Domestic/Irrigation Well Installation**
- ☐ **Inclinometer Installation**

Work Activities: Earth moving, trenching, backfill, compaction

Site Personnel:

Company:	**Responsibility:**
ENGEO Incorporated	Testing and Observation Servicves
To Be Determined	Excvation, backfill compaction, general earth moving

Project Health and Safety Officer:	**Site Health and Safety Officer:**
Shawn Munger	Keith Nowell/Eric Harrell

II. HAZARD EVALUATION

Physical Hazards

- ☐ **Heat**
- ☐ **Oxygen**
- ☒ **Noise**
- ☒ **Traffic**
- ☒ **Equipment**
- ☐ **Explosion/Fire Hazards**
- ☒ **Excavations/Trenches**
- ☒ **Slip, Trip, Fall**
- ☐ **Underground Hazards**
- ☐ **Overhead Hazards**

Expected Chemical Hazards

☐ **Not Applicable**

Chemical Name (CAS)	PEL/TLV (ppm)	IDLH (ppm)	LEL %	Field Criteria
Gasoline/Diesel	N/A	N/A	N/A	Follows BTEX
BTEX	1.0	N/A	N/A	See attached

III. PERSONAL PROTECTIVE EQUIPMENT

Level of Protection Equipment

A ☐ **B** ☐ **C** ☐ **D** ☐ **Mod. D** ☒

Personal Protective Equipment

R = Required	*A = As Needed*
R **Hard Hat**	__ **Safety Glasses**
R **Safety Boots**	A **Respirator (Type)**
R **Safety Vest**	A **Filter (Type)** GMA
A **Hearing Protection**	A **Gloves (Type)** Nitrile
A **Tyvek Coveralls**	__ **Other**

Field Monitoring Equipment:

TEM 580A PID (10.0ev)

Site Control Measures/Exclusion Zones:

Fencing; No exclusion zones necessary

IV. EMERGENCY RESPONSE

Emergency Response Plans:

Stop operations; evaluate conditions, administer first aid; call for emergency personnel; transport injured

Hospital: Eden Medical Center	**Phone:** 510-889-5015
Address: 20103 Lake Chabot Road - Castro Valley, California	
Fire Department: 911	**Police:** 911

Site Resources:

Water Supply	**Yes**	☐	**No**	☒
Telephone	**Yes**	☒	**No**	☐
Radio	**Yes**	☒	**No**	☐
Other:				

Emergency Contact:

Name: Bill Morrison	**Phone:** 510-737-1080
Company: Western Pacific Development	

Comments:

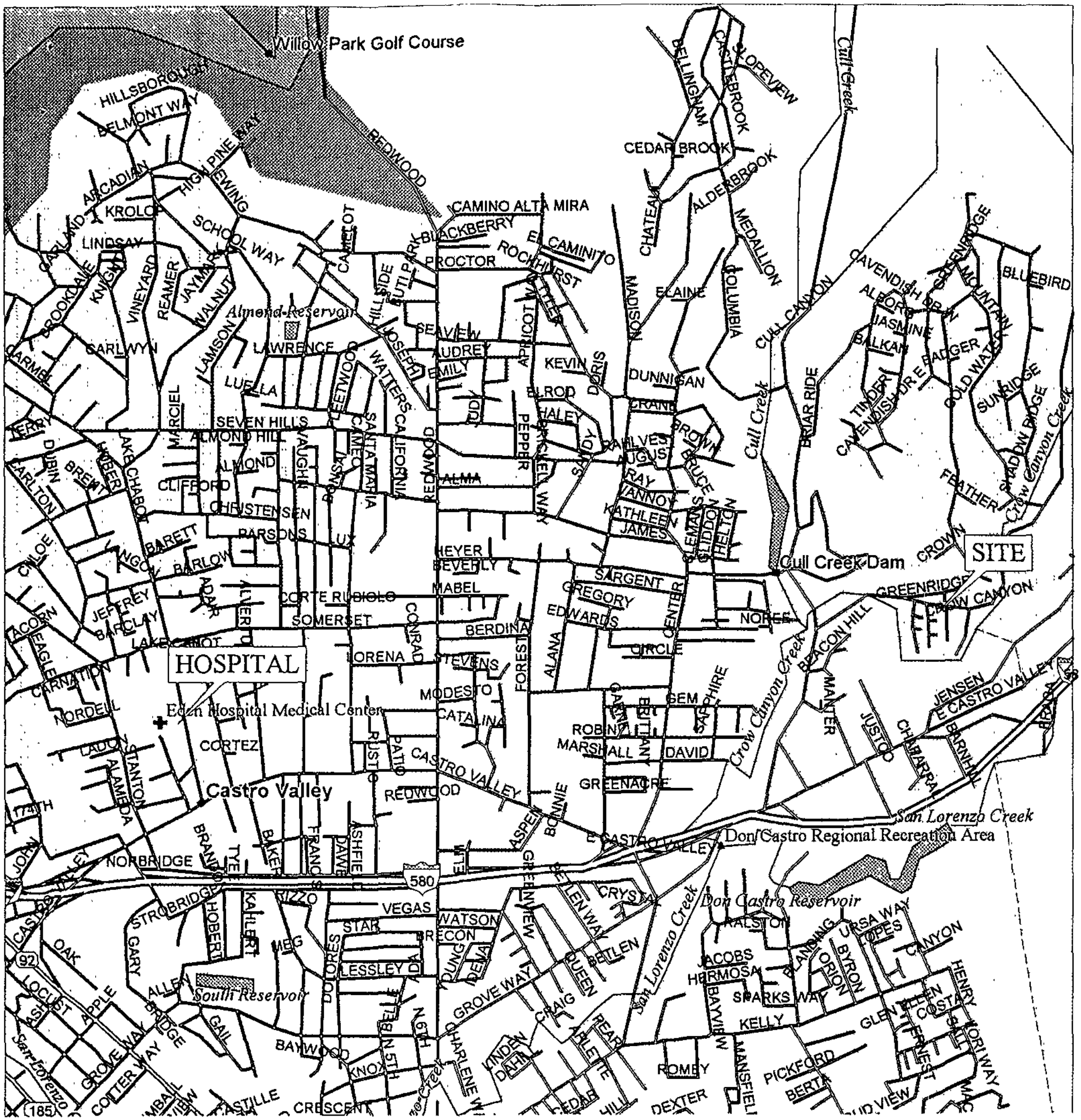
Preparer Signatures/Company:	**Date**
Shawn Munger - ENGEO Inc.	August 18, 1997

TABLE I

HYDROCARBON VAPOR CRITERIA AND RESPONSES

Hydrocarbon Concentrations	Response
<30 ppmv	No special action.
30 ppmv - 300 ppmv	Half-mask Organic Vapor (OV) respirators worn by all in work area.
>300 ppmv	Discontinue work activities and evacuate area. Evaluate measures to subdue excessive vapor levels.

* in parts-per-million by volume within breathing zone, measured by photoionization detector equipped with 10.04 eV bulb.



Willow Park Golf Course
HOSPITAL
Eden Hospital Medical Center
Castro Valley
SITE
Cull Creek Dam
Cull Creek
Crow Canyon Creek
San Lorenzo Creek
Don Castro Regional Recreation Area
Don Castro Reservoir
Almond Reservoir
South Reservoir
580
92
185
HILLSBOROUGH
BELMONT WAY
HIGH PINE WAY
REDWOOD
CAMINO ALTA MIRA
BLACKBERRY
PROCTOR
EL CAMINITO
SCHOOL WAY
LAWRENCE
SEVEN HILLS
ALMOND HILL
CLIFFORD
CHRISTENSEN
PARSONS
SOMERSET
BERDINA
LORENA
STEVENS
MODESTO
CATALINA
CORTEZ
CASTRO VALLEY
REDWOOD
NORBRIDGE
STROBRIDGE
VEGAS
WATSON
BRECON
LESSLEY
GROVE WAY
BAYWOOD
CRESCENT
KELLY
PICKFORD
DEXTER
ROMEY
E CASTRO VALLEY
JENSEN
GREENRIDGE
CROW CANYON
CROWN
BEACON HILL
NOREE
CIRCLE
SARGENT
GREGORY
EDWARDS
GEM
ROBIN
MARSHALL
DAVID
GREENACRE
MADISON
CHATEAU
ALDERBROOK
CEDAR BROOK
MEDALLION
COLUMBIA
CULL CANYON
BRIAR RIDGE
CAVENDISH
BLUEBIRD
SUNRIDGE
FEATHER
ELAINE
DUNNIGAN
HEYER
BEVERLY
MABEL
CORTE RUBIOLO

Project No.
4186-F2A

November 19, 1996

Mr. Jim Nylen
Nylen Homes, Incorporated
87 West March Lane, Suite 6
Stockton, CA 95207

Subject: 5277 Crow Canyon Road
Castro Valley, California

PHASE TWO ENVIRONMENTAL SITE ASSESSMENT

Reference: ENGEO Inc.; Phase One Environmental Site Assessment, 5277 Crow Canyon Road, Castro Valley, California; October 3, 1996; Project No. 4186-F2.

Dear Mr. Nylen:

ENGEO Incorporated is pleased to present this phase two environmental site assessment of the subject property, located in Castro Valley, California. The purpose of the study was to address the environmental concerns noted in the referenced phase one site assessment report.

The scope of services included the following:

- Excavation of four exploratory test pits.
- Recovery of a composite soil sample from the test pits.
- Drilling of two exploratory soil borings 15 to 50 feet in depth.
- Field organic vapor screenings.
- Laboratory analysis of the soil and ground-water samples.
- Preparation of this assessment report.

BACKGROUND

A draft phase one environmental site assessment was undertaken for the property in October 1996 (referenced report). The scope of work included the following:

- A review of publicly available and practically reviewable standard local, state and federal environmental record sources.

- A review of several publicly available and practically reviewable standard historical sources, aerial photographs, fire insurance maps, and physical setting sources.

- A reconnaissance of the property.
- Interviews with the property owner and government officials.
- Preparation of an assessment report with findings and conclusions.

ASSESSMENT SUMMARY

The site reconnaissance and records research did not find documentation or physical evidence of soil or ground-water impairments associated with the use of the property. The owner indicated that some fill material had been placed on the site to develop a relatively level area for parking. According to Mr. Stoker, the current residential tenant brought this material on site from the former Del Monte Plant facility in Oakland, California. The tenant has stated that he is unaware of contaminated materials within the fill; however, ENGEO has determined that the Del Monte Plant is a registered State of California Leaking Underground Storage Tank (LUST) site.

A review of regulatory data bases maintained by county, state and federal agencies found no documentation of hazardous materials violations or discharge on the property. A review of aerial photographs and available historical records found the property has been used for residential and ranching purposes since at least 1947.

A review of regulatory agency records identified two leaking underground storage tanks within 1/8 mile of the subject property. One of these facilities, the former Shell Service Station at 5293 Crow Canyon Road abuts the property to the north (Figure 2). The second site, a former Chevron Service Station at 5269 Crow Canyon Road, is located adjacent to the northeast corner of the property (Figure 2). A review of state found a potential for off-site migration of petroleum hydrocarbons beneath the subject property from these facilities.

DISCUSSION OF ENVIRONMENTAL CONCERNS

Based on the findings of the October 1996 phase one assessment, ENGEO identified the following environmental concerns:

Undocumented Fill Material

ENGEO was unaware of laboratory analyses or certification as to the condition of this fill. Without further studies, it could not be determined if the fill contains contaminants.

Adjacent LUST Sites

Documented soil and ground-water contamination has been identified at the adjacent Chevron facility. Some trace levels of hydrocarbons have been reported for Chevron ground-monitoring wells located adjacent to the west property line of the subject site. It is conceivable that some lateral migration of contaminated ground water beneath the subject property has occurred as a result of ground-water gradient fluctuations or migration through bedrock fractures.

The Shell facility is located hydraulically upgradient of the subject property based on ground-water measurements at this LUST site. No ground-water contamination has been reported for the former Shell facility to date; however, given the fractured nature of the underlying bedrock and the relatively shallow water table at depths of 7 to 15 feet below the ground surface it is possible that some migration of contaminants from the Shell site has occurred.

Asbestos-Containing Materials

Given the age of the existing residential structure, it is possible that asbestos-containing materials were used in the construction of the building.

RECOMMENDATIONS

ENGEO provided the following recommendations for the property to address the noted environmental concerns:

- The existing fill material should be evaluated for potential contaminants. Based on state information regarding the former Del Monte plant, potential contaminants would include petroleum hydrocarbons and lead. Test pits should be excavated within the fill to allow for inspection of the fill material and for recovery of soil samples for laboratory testing.

- A limited subsurface exploration should be conducted along the north property line adjacent to the former Shell site and along the west property line near the Chevron facility. ENGEO recommends that a hollow stem auger be used to recover soil and ground-water samples from the borings for laboratory testing.

- An asbestos survey, including the recovery of bulk samples for asbestos analysis, should be undertaken for the existing residence.

PHASE TWO ASSESSMENT FIELD WORK

Test Pit Excavations

Field activities were conducted on October 10, 1996. Appendix B provides a description of exploration and sampling methodology. The four test pits three to five feet in depth were excavated using a Case backhoe. Figure 2 shows the locations of the test pits. The excavations exposed two to four feet of fill material overlying clayey silt with rootlets (native). The fill material was found to consist of gray sandy gravel overlying silty fine sand. Odoriferous organic material suggestive of a possible septic leach field were exposed in Test Pits TP-3 and TP-4. No significant organic vapors were recorded from field soil screenings. No stained soil or other evidence of hazardous materials were noted within the test pits.

Soil samples were recovered from each of the test pits at depths of two to three feet below surface grade. An additional soil sample was recovered from the organic material exposed in Test Pit TP-4. The four samples from the test pits were submitted to the laboratory for a composite analysis (TP-1, TP-2, TP-3, TP-4). The additional sample S1 from TP-4 was submitted as a discrete sample for laboratory testing.

Exploratory Soil Borings

Field activities were conducted on October 22, 1996. Figure 2 shows the location of the two exploratory soil borings. The drilling activities were conducted in association with a concurrent geotechnical exploration which included eight soil borings drilled across the property. Appendix B provides a description of ENGEO's standard exploration and sampling procedures. Boring B1 along the northwest property line was drilled to a depth of 50 feet. Review of the boring log shows silty clay overlying siltstone, sandstone and claystone. No free ground water was initially encountered within the borehole. Subsequent to drilling, ground water was observed to accumulate within the borehole. The ground-water level had reached a depth of 41 feet below the ground surface, before sample recovery. No organic vapors were recorded from soil cuttings recovered from Boring B1.

Boring B2 was drilled along the north property line adjacent to the former Shell service station (Figure 2). The boring encountered silty sand overlying fine sandstone. No further advancement of the auger was possible beyond a depth of 15 feet, due to coherent resistant bedrock conditions. No free ground water was encountered within the boring. No detectable organic vapors were recorded from field screenings.

LABORATORY ANALYSIS

The test pit soil samples were analyzed for the following compounds:

- *Total petroleum hydrocarbons as gasoline, diesel and motor oil (EPA 8015).*
- *Benzene, toluene, ethylbenzene, xylenes (BTEX - EPA 8020).*
- *LUFT Metals (Cd, Cr, Pb, Ni, Zn).*

Review of the laboratory analysis for the composite test pit sample and the discrete sample recovered from the organic material (TP-1) found slightly elevated levels of lead, chromium and extractable petroleum hydrocarbons. Trace levels of gasoline and BTEX were also reported for Sample S1. Table I provides a summary of the laboratory analyses for the test pit samples.

TABLE I
Soil Sample Laboratory Analysis Summary
(Concentrations Reported in Parts Per Million)

SAMPLE	GAS	DIESEL	OIL	BENZ	TOL	E. BENZ	XYL.	CR	PB
TP-1,2,3,4	<1.0	**43**	**150**	<.0025	<.0025	<.0025	<.0025	**38**	**100**
S1	**1.7**	**37**	**71**	**.0027**	**.087**	**.013**	**.019**	**23**	**69**

The ground-water sample recovered from Boring B1 was analyzed for petroleum hydrocarbons as gasoline and BTEX. No detectable TPH or BTEX was reported for the ground-water sample.

DISCUSSION

The reported lead concentrations and chromium concentrations are below the Preliminary Remediation Goals established by the US Environmental Protection Agency Region IX for these metals. No specific state or federal criteria exists for petroleum hydrocarbons. The reported extractable hydrocarbon concentrations of 37 to 150 ppm would not be expected to require further investigation. Based on the findings from the field and laboratory test data, the existing import fill material along the parking area would not be expected to represent a significant environmental concern. ENGEO recommends that during future grading activities, this material be placed within road sections rather than in building pad areas.

No detectable hydrocarbons or BTEX was reported for the Water Sample W-1 recovered along the northeast property line, cross gradient from the Chevron site. Based on this data, there is no indication the subject site has been impacted as a result of fuel releases from the former service station site. Given the bedrock conditions encountered at Boring B2, recovery of a ground-water

sample was not feasible; however, given the lack of reported ground-water contamination from investigations conducted at the Shell site, and the lack of detectable organic vapors recorded from auger cuttings, the Shell site would not be expected to impact the proposed site development.

RECOMMENDATIONS

An asbestos survey, including the recovery of bulk samples for asbestos analysis, should be undertaken for the existing residence and out-structures, prior to building demolition.

ENGEO recommends that the property be viewed by an environmental professional during demolition and pregrading activities to observe areas of the property which may have been obscured by existing structures or pavement.

The existing fill material along the truck parking pad should be excavated during the site grading activities and placed within road sections or areas outside of residential lots.

ENGEO is pleased to have been of continued service to Nylen Homes with regards to this project. If you have any further questions regarding this report, please contact our office.

Very truly yours,

ENGEO INCORPORATED

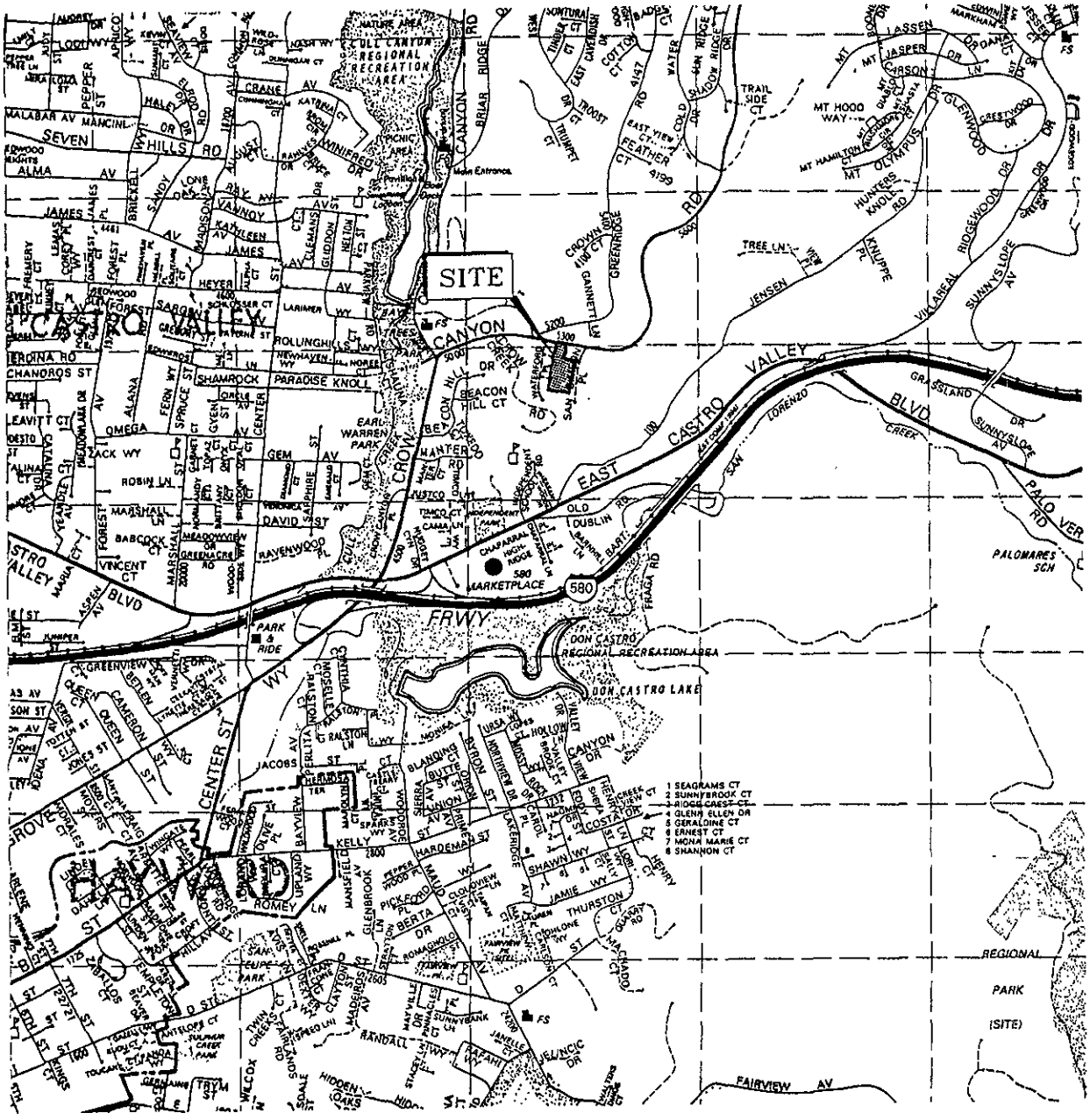
Shawn Munger
CHG 413
REA 2070

Reviewed by:

Brian Flaherty

Brian Flaherty
CEG 1256
Vice President

sm/lb:esa2
Attachments: Figures 1 and 2
Boring B-1
American Environmental Network Report
Two National Environmental Testing, Inc. Reports



N

0 MILE .5
0 KILOMETER 1

BASE: THOMAS BROTHERS

ENGEO INCORPORATED

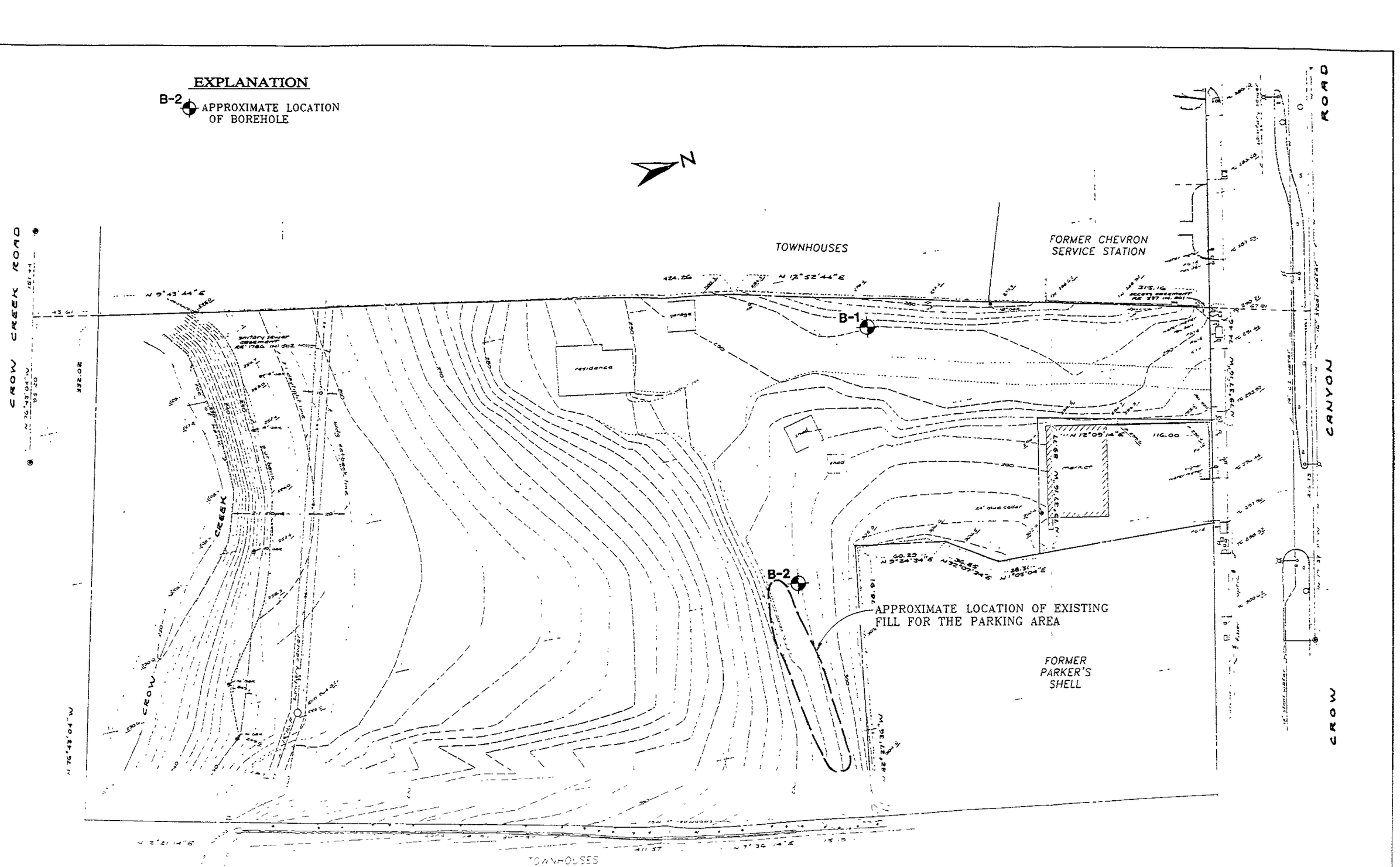
SITE VICINITY MAP
CASTRO VALLEY PROPERTY
5277 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

JOB NO.: 4186-F2A
DATE: NOVEMBER 1996
DRAWN BY: CHECKED BY:

FIGURE NO. 1

EXPLANATION

B-2 ⊕ APPROXIMATE LOCATION OF BOREHOLE



SOURCE GREENWOOD & MOORE INC TOPOGRAPHIC SURVEY JOB NO 96145 DATED 10/28/96

ENGEO INCORPORATED	SITE PLAN CASTRO VALLEY PROPERTY 5277 CROW CANYON ROAD CASTRO VALLEY, CALIFORNIA	FILE NO 4186-F2A DATE NOVEMBER 1996 DRAWN BY [illegible] CHECKED BY [illegible]

FIGURE NO 2

DATE OF BORING: October 22, 1996

SURFACE ELEVATION: Approx. 288.0 feet (87.8 meters)

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DESCRIPTION	N S.P.T. BLOWS/FT *MODIFIED FOR 3" O.D. SAMPLER	qu UNCON. COMP. STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
0				Yellowish brown clayey SAND, damp. (SC) (fill?)				
	1							
5				Brown clayey SAND, slightly moist. (SC) (fill?)				
	2							
				Yellowish brown silty CLAY, slightly moist. (CL)				
10	3			Yellowish brown silty CLAY with sand, slightly moist. (CL)				
	4			Harder drilling at 13 feet.				
				Yellowish brown very silty CLAY, moist. (CL)				
15	5			Harder drilling at 17 feet.				
				Mottled grayish brown/yellowish brown silty CLAY, slightly moist. (CL)				
20	6			Mottled grayish brown/yellowish brown silty CLAY, moist. (CL)				
	7							
25								
	8			Mottled grayish brown/pale brown SILTSTONE.				
30	9							

ENGEO INCORPORATED

CASTRO VALLEY PROPERTY
5277 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

BORING NO.: B-1

DATE: December 1996

JOB NO.: 4186-E1

FIGURE NO. 6

MET 4186 12/12/96

DEPTH (FEET)	DEPTH (METERS)	SAMPLE NUMBER	LOG, LOCATION AND TYPE OF SAMPLE	DATE OF BORING: October 22, 1996 SURFACE ELEVATION: Approx. 288.0 feet (87.8 meters) DESCRIPTION	N S.P.T. BLOWS/FT *MODIFIED FOR 3" O.D. SAMPLER	qu UNCON. COMP. STRENGTH (TSF) *FIELD PENET. APPROX.	IN PLACE DRY UNIT WEIGHT (PCF)	IN PLACE MOIST. CONTENT % DRY WEIGHT
	10			Grayish brown SANDSTONE.				
35	11			Gray silty CLAYSTONE.				
	12			▽ Water level about 5 hours after drilling.				
40	13			Dark gray very silty CLAYSTONE.				
45	14							
	15							
50				Bottom of boring at approximately 50.0 feet.				
	16							
55	17							
	18							
60								

MET 4186 12/12/96

ENGEO INCORPORATED

CASTRO VALLEY PROPERTY
5277 CROW CANYON ROAD
CASTRO VALLEY, CALIFORNIA

BORING NO.: B-1
DATE: December 1996
JOB NO.: 4186-E1

FIGURE NO. 6

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

ENGEO INCORPORATED
2401 CROW CANYON RD #200
SAN RAMON, CA 94583

ATTN: SHAWN MUNGER
CLIENT PROJ. ID: 4186-E3

REPORT DATE: 10/30/96
DATE(S) SAMPLED: 10/22/96
DATE RECEIVED: 10/23/96
AEN WORK ORDER: 9610308

PROJECT SUMMARY:

On October 23, 1996, this laboratory received 1 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

William Sorbola, for
Larry Klein
Laboratory Director

ENGEO INCORPORATED

SAMPLE ID: W-1
AEN LAB NO: 9610308-01
AEN WORK ORDER: 9610308
CLIENT PROJ. ID: 4186-E3

DATE SAMPLED: 10/22/96
DATE RECEIVED: 10/23/96
REPORT DATE: 10/30/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	10/28/96
Toluene	108-88-3	ND	0.5	ug/L	10/28/96
Ethylbenzene	100-41-4	ND	0.5	ug/L	10/28/96
Xylenes, Total	1330-20-7	ND	2	ug/L	10/28/96
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	10/28/96

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9610308

CLIENT PROJECT ID: 4186-E3

Quality Control Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9610308
INSTRUMENT: F
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
10/28/96	W-1	01	92
QC Limits:			70-130

DATE ANALYZED: 10/25/96
SAMPLE SPIKED: 9610243-02
INSTRUMENT: F

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	22.4	100	4	85-109	17
Toluene	74.0	102	4	87-111	16
Hydrocarbons as Gasoline	500	111	5	66-117	19

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

9610308

ENGEO
INCORPORATED
2401 CROW CANYON ROAD, SUITE 200
SAN RAMON, CALIFORNIA 94583
PHONE (510) 838-1600

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 4186-E3
PROJECT NAME: 5277 Crow Canyon Rd
SAMPLED BY: (SIGNATURE) Keith E. Nowell Keith E. Nowell

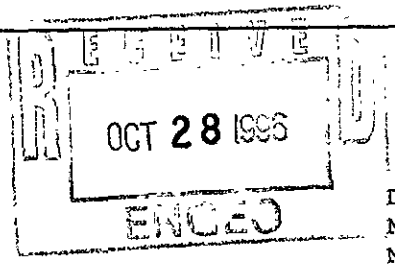
SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	TPH – GASOLINE (EPA 8015/5030)	TPH – DIESEL (EPA 8015/3550/3510)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625,8270)	TOTAL OIL & GREASE (SMWW 5520(F).)	OC PESTICIDES/PCB (EPA 608, 8080)	OP PESTICIDES (EPA 614/8140)	TITLE 26 METALS (17)	PRIORITY METALS (13)	REMARKS REQUIRED DETECTION LIMITS
W-1	10/22/96	16.45	Aqueous	3	40ml	Ice	X		X									01ABC

RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
Keith E. Nowell	10-23-96 8:30			10-23-96 15:30	
RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)	RELINQUISHED BY: (SIGNATURE)	DATE/TIME	RECEIVED BY: (SIGNATURE)
RELINQUISHED BY. (SIGNATURE)	DATE/TIME	RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE/TIME	REMARKS 5-day TAT	

DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT; COPY TO PROJECT FIELD FILES

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
3636 North Laughlin Road
Suite 110
Santa Rosa, CA 95403-8226
Tel: (707) 526-7200
Fax: (707) 541-2333



Shawn Munger
ENGEO
2401 Crow Canyon Road
Suite 200
San Ramon, CA 94583

Date: 10/23/1996
NET Client Acct. No: 44200
NET Job No: 96.02958
Received: 10/11/1996

Client Reference Information

5277 Crow Canyon Road/Proj. No. 4186-F3

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel free to call me at (707) 541-2307.

Submitted by:

Judy Ridley
Project Coordinator

Enclosure(s)

Client Name: ENGEO
Client Acct: 44200
NET Job No: 96.02958

Date: 10/23/1996
ELAP Cert: 1386
Page: 2

Ref: 5277 Crow Canyon Road/Proj. No. 4186-F3

SAMPLE DESCRIPTION: TP-1,TP-2,TP-3,TP-4
Date Taken: 10/10/1996
Time Taken: 12:30
NET Sample No: 269333

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 6010 (SOLID)	--						10/21/1996	790
Cadmium (ICP)	ND		2.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	713
Chromium (ICP)	38		2.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	724
Lead (GFAA)	100		0.20	mg/kg	EPA 7421	10/17/1996	10/21/1996	807
Nickel (ICP)	35		5.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	617
Zinc (ICP)	55		5.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	662
TPH (Gas/BTXE,Solid)								
5030/M8015	--						10/15/1996	2069
DILUTION FACTOR*	1						10/15/1996	2069
as Gasoline	ND		1.0	mg/kg	5030		10/15/1996	2069
8020 (GC,Solid)	--						10/15/1996	2069
Benzene	ND		2.5	ug/kg	8020		10/15/1996	2069
Toluene	ND		2.5	ug/kg	8020		10/15/1996	2069
Ethylbenzene	ND		2.5	ug/kg	8020		10/15/1996	2069
Xylenes (Total)	ND		2.5	ug/kg	8020		10/15/1996	2069
SURROGATE RESULTS	--						10/15/1996	2069
Bromofluorobenzene (SURR)	89			% Rec.	5030		10/15/1996	2069
M8015 (EXT., Solid)						10/18/1996		
DILUTION FACTOR*	10						10/21/1996	1225
as Diesel	43	DH	10	mg/kg	3550		10/21/1996	1225
SURROGATE RESULTS	--						10/21/1996	1225
Ortho-terphenyl (SURR)	112			% Rec.	3550		10/21/1996	1225

Ref: 5277 Crow Canyon Road/Proj. No. 4186-F3

SAMPLE DESCRIPTION: S1
Date Taken: 10/10/1996
Time Taken: 13:30
NET Sample No: 269334

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 6010 (SOLID)	--						10/21/1996	790
Cadmium (ICP)	ND		2.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	713
Chromium (ICP)	23		2.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	724
Lead (GFAA)	69		0.20	mg/kg	EPA 7421	10/17/1996	10/21/1996	807
Nickel (ICP)	22		5.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	617
Zinc (ICP)	110		5.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	662
TPH (Gas/BTXE,Solid)								
5030/M8015	--						10/15/1996	2069
DILUTION FACTOR*	1						10/15/1996	2069
as Gasoline	1.7		1.0	mg/kg	5030		10/15/1996	2069
8020 (GC,Solid)	--						10/15/1996	2069
Benzene	2.7		2.5	ug/kg	8020		10/15/1996	2069
Toluene	87		2.5	ug/kg	8020		10/15/1996	2069
Ethylbenzene	13		2.5	ug/kg	8020		10/15/1996	2069
Xylenes (Total)	19		2.5	ug/kg	8020		10/15/1996	2069
SURROGATE RESULTS	--						10/15/1996	2069
Bromofluorobenzene (SURR)	69			% Rec.	5030		10/15/1996	2069
M8015 (EXT., Solid)						10/18/1996		
DILUTION FACTOR*	10						10/21/1996	1225
as Diesel	37	D-	10	mg/kg	3550		10/21/1996	1225
SURROGATE RESULTS	--						10/21/1996	1225
Ortho-terphenyl (SURR)	115			% Rec.	3550		10/21/1996	1225

Client Name: ENGEO
Client Acct: 44200
NET Job No: 96.02958

Date: 10/23/1996
ELAP Cert: 1386
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Ref: 5277 Crow Canyon Road/Proj. No. 4186-F3

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
Cadmium (ICP)	101.2	1.012	1.00		mg/kg	10/21/1996	jeo	713
Chromium (ICP)	102.0	1.020	1.00		mg/kg	10/21/1996	jeo	724
Lead (GFAA)	100.0	2.499	2.5000		mg/kg	10/21/1996	ket	807
Nickel (ICP)	102.2	1.022	1.00		mg/kg	10/21/1996	jeo	617
Zinc (ICP)	101.2	1.012	1.00		mg/kg	10/21/1996	jeo	662
TPH (Gas/BTXE,Solid)								
as Gasoline	100.4	2.51	2.50		mg/kg	10/15/1996	lss	2069
Benzene	96.2	96.2	100.0		ug/kg	10/15/1996	lss	2069
Toluene	96.6	96.6	100.0		ug/kg	10/15/1996	lss	2069
Ethylbenzene	98.0	98.0	100.0		ug/kg	10/15/1996	lss	2069
Xylenes (Total)	96.6	289.9	300.0		ug/kg	10/15/1996	lss	2069
Bromofluorobenzene (SURR)	96.0	96	100		% Rec.	10/15/1996	lss	2069
M8015 (EXT., Solid)								
as Diesel	87.9	879	1000		mg/kg	10/21/1996	vah	1225
Ortho-terphenyl (SURR)	116.0	116	100		% Rec.	10/21/1996	vah	1225
M8015 (EXT., Solid)								
as Diesel	103.6	1036	1000		mg/kg	10/22/1996	vah	1225
Ortho-terphenyl (SURR)	134.0	134	100		% Rec.	10/22/1996	vah	1225
M8015 (EXT., Solid)								
as Diesel	105.7	1057	1000		mg/kg	10/22/1996	vah	1225
Ortho-terphenyl (SURR)	118.0	118	100		% Rec.	10/22/1996	vah	1225

Client Name: ENGEO
Client Acct: 44200
NET Job No: 96.02958

Date: 10/23/1996
ELAP Cert: 1386
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Ref: 5277 Crow Canyon Road/Proj. No. 4186-F3

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
Cadmium (ICP)	ND	2.0		mg/kg	10/21/1996	jeo	713
Chromium (ICP)	ND	2.0		mg/kg	10/21/1996	jeo	724
Lead (GFAA)	ND	0.20		mg/kg	10/21/1996	ket	807
Nickel (ICP)	ND	5.0		mg/kg	10/21/1996	jeo	617
Zinc (ICP)	ND	5.0		mg/kg	10/21/1996	jeo	662
TPH (Gas/BTXE,Solid)							
as Gasoline	ND	1.0		mg/kg	10/15/1996	lss	2069
Benzene	ND	2.5		ug/kg	10/15/1996	lss	2069
Toluene	ND	2.5		ug/kg	10/15/1996	lss	2069
Ethylbenzene	ND	2.5		ug/kg	10/15/1996	lss	2069
Xylenes (Total)	ND	2.5		ug/kg	10/15/1996	lss	2069
Bromofluorobenzene (SURR)	101			% Rec.	10/15/1996	lss	2069
M8015 (EXT., Solid)							
as Diesel	ND	1.0		mg/kg	10/21/1996	vah	1225
Ortho-terphenyl (SURR)	78			% Rec.	10/21/1996	vah	1225

Client Name: ENGEO
Client Acct: 44200
NET Job No: 96.02958

Date: 10/23/1996
ELAP Cert: 1386
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Ref: 5277 Crow Canyon Road/Proj. No. 4186-F3

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Flags	Units	Date Analyzed	Run Batch	Sample Spiked
METHOD 6010 (SOLID)					--					10/21/1996	790	269389
Cadmium (ICP)	91.3	96.7	5.7	80.00	ND	73.03	78.59		mg/kg	10/21/1996	713	269389
Chromium (ICP)	92.2	106.8	14.6	80.00	23	96.75	109.8		mg/kg	10/21/1996	724	269389
Lead (GFAA)	--	--	--	2.033	23	--	--	NI2	mg/kg	10/21/1996	807	269388
Nickel (ICP)	109.5	119.2	8.5	80.00	26	113.6	122.9		mg/kg	10/21/1996	617	269389
Zinc (ICP)	94.0	105.2	11.1	80.00	16	91.21	101.5		mg/kg	10/21/1996	662	269389
TPH (Gas/BTXE,Solid)												269290
as Gasoline	74.8	71.6	4.4	2.50	ND	1.87	1.79		mg/kg	10/15/1996	2069	269290
Benzene	88.1	87.4	0.8	29.05	ND	25.6	25.4		ug/kg	10/15/1996	2069	269290
Toluene	89.9	90.5	0.7	176	4.7	163	164		ug/kg	10/15/1996	2069	269290
Bromofluorobenzene (SURR)	84.0	82.0	2.4	100	86	84	82		% Rec.	10/15/1996	2069	269290

Client Name: ENGEO
Client Acct: 44200
NET Job No: 96.02958

Date: 10/23/1996
ELAP Cert: 1386
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Ref: 5277 Crow Canyon Road/Proj. No. 4186-F3

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Rec.	DUP LCS % Rec.	RPD	LCS Amount Found	DUP LCS Amount Found	LCS Amount Exp.	Flags	Units	Date Analyzed	Analyst Initials	Run Batch
Cadmium (ICP)	97.6			97.6		100		mg/kg	10/21/1996	jeo	713
Chromium (ICP)	100.0			100.0		100		mg/kg	10/21/1996	jeo	724
Lead (GFAA)	100.3			2.507		2.50		mg/kg	10/21/1996	ket	807
Nickel (ICP)	100.9			100.9		100		mg/kg	10/21/1996	jeo	617
Zinc (ICP)	92.1			92.1		100		mg/kg	10/21/1996	jeo	662
M8015 (EXT., Solid) as Diesel	79.0			13.2		16.7		mg/kg	10/21/1996	vah	1225
Ortho-terphenyl (SURR)	79.0			79		100		% Rec.	10/21/1996	vah	1225

KEY TO RESULT FLAGS

*	: RPD between sample duplicates exceeds 30%.
*M	: RPD between sample duplicates or MS/MSD exceeds 20%.
+	: Correlation coefficient for the Method of Standard Additions is less than 0.995.
<	: Sample result is less than reported value.
B-I	: Value is between Method Detection Limit and Reporting Limit.
B-O	: Analyte found in blank and sample.
C	: The result confirmed by secondary column or GC/MS analysis.
CNA	: Cr+6 not analyzed; Total Chromium concentration below Cr+6 regulatory level.
COMP	: Sample composited by equal volume prior to analysis.
D-	: The result has an atypical pattern for Diesel analysis.
D1	: The result for Diesel is an unknown hydrocarbon which consists of a single peak.
DH	: The result appears to be a heavier hydrocarbon than Diesel.
DL	: The result appears to be a lighter hydrocarbon than Diesel.
DR	: Elevated Reporting Limit due to Matrix.
DS	: Surrogate diluted out of range.
DX	: The result for Diesel is an unknown hydrocarbon which consists of several peaks.
FA	: Compound quantitated at a 2X dilution factor.
FB	: Compound quantitated at a 5X dilution factor.
FC	: Compound quantitated at a 10X dilution factor.
FD	: Compound quantitated at a 20X dilution factor.
FE	: Compound quantitated at a 50X dilution factor.
FF	: Compound quantitated at a 100X dilution factor.
FG	: Compound quantitated at a 200X dilution factor.
FH	: Compound quantitated at a 500X dilution factor.
FI	: Compound quantitated at a 1000X dilution factor.
FJ	: Compound quantitated at a greater than 1000x dilution factor.
FK	: Compound quantitated at a 25X dilution factor.
FL	: Compound quantitated at a 250X dilution factor.
G-	: The result has an atypical pattern for Gasoline.
G1	: The result for Gasoline is an unknown hydrocarbon which consists of a single peak.
GH	: The result appears to be a heavier hydrocarbon than Gasoline.
GL	: The result appears to be a lighter hydrocarbon than Gasoline.
GX	: The result for Gasoline is an unknown hydrocarbon which consists of several peaks.
HT	: Analysis performed outside of the method specified holding time.
HTC	: Confirmation analyzed outside of the method specified holding time.
HTP	: Prep procedure performed outside of the method specified holding time.
HTR	: Received after holding time expired, analyzed ASAP after receipt.
HX	: Peaks detected within the quantitation range do not match standard used.
J	: Value is estimated.
MI	: Matrix Interference Suspected.
MSA	: Value determined by Method of Standard Additions.
MSA*	: Value obtained by Method of Standard Additions; Correlation coefficient is <0.995.
NI1	: Sample spikes outside of QC limits; matrix interference suspected.
NI2	: Sample concentration is greater than 4X the spiked value; the spiked value is considered insignificant.
NI3	: Matrix Spike values exceed established QC limits, post digestion spike is in control.
P	: There is >40% difference between primary and confirmation analysis.
P7	: pH of sample > 2; sample analyzed past 7 days.
RSC	: Refer to subcontract laboratory report for QC data.
S2	: Matrix interference confirmed by repeat analysis.
SCN	: Thiocyanate not analyzed separately; total value is below the Reporting Limit for Free Cyanide.
UMDL	: Undetected at the Method Detection Limit.

#3130

ENGEO INCORPORATED
2401 CROW CANYON ROAD, SUITE 200
SAN RAMON, CALIFORNIA 94583
PHONE (510) 838-1600

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 4186-F3
PROJECT NAME: 5277 Crow Canyon Road
SAMPLED BY: (SIGNATURE) Shawn Munger

SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE	TPH – GASOLINE (EPA 8015/5030)	TPH – DIESEL (EPA 8015/3550/3510)	PURGEABLE AROMATICS BTEX (EPA 602, 8020)	PURGEABLE HALOCARBONS (EPA 601, 8010)	VOLATILE ORGANICS (EPA 624, 8240)	BASE/NEUTRALS, ACIDS (EPA 625,8270)	TOTAL OIL & GREASE (SMWW 5520(F))	OC PESTICIDES/PCB (EPA 608, 8080)	OP PESTICIDES (EPA 614/8140)	TITLE 26 METALS (17)	PRIORITY METALS (13)	LUFT METALS					REMARKS REQUIRED DETECTION LIMITS
TP-1	10-10-96	12:30	S	1	2"x6"	ice	X	X	X									X					4 Liner Composite
TP-2	10-10-96	12:45	S	1	"	"	X	X	X									X					
TP-3	10-10-96	13:00	S	1	"	"	X	X	X									X					
TP-4	10-10-96	13:20	S	1	2"x6"	ice	X	X	X									X					
S1	10-10-96	13:30	S	1	2"x6"	ice	X	X	X									X					

	DATE/TIME		DATE/TIME		DATE/TIME	
RELINQUISHED BY: (SIGNATURE)	10/11/96	1006	RECEIVED BY: (SIGNATURE) 10/11/96	1006	RELINQUISHED BY: (SIGNATURE) 10/11/96	1559
RELINQUISHED BY: (SIGNATURE)	10/11/96	1700	RECEIVED BY: (SIGNATURE)		RELINQUISHED BY: (SIGNATURE)	
RELINQUISHED BY: (SIGNATURE)	DATE/TIME		RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE/TIME 10/11/96 17:10	REMARKS Standard TAT Temp	

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NATIONAL ENVIRONMENTAL TESTING, INC.

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Shawn Munger
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Date: 10/23/1996
NET Client Acct. No: 44200
NET Job No: 96.02958
Received: 10/11/1996
Revised Report: pages 2 & 3

Client Reference Information

5277 Crow Canyon Road/Proj. No. 4186-F3

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel free to call me at (707) 541-2307.

At the request of Mr. Munger, Motor Oil analysis was added after the original report was issued. This report has been revised to add the Motor Oil results.

Submitted by:

Judy Ridley
Project Coordinator

Enclosure(s)

Ref: 5277 Crow Canyon Road/Proj. No. 4186-F3

SAMPLE DESCRIPTION: TP-1,TP-2,TP-3,TP-4
Date Taken: 10/10/1996
Time Taken: 12:30
NET Sample No: 269333

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 6010 (SOLID)	--						10/21/1996	790
Cadmium (ICP)	ND		2.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	713
Chromium (ICP)	38		2.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	724
Lead (GFAA)	100		0.20	mg/kg	EPA 7421	10/17/1996	10/21/1996	807
Nickel (ICP)	35		5.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	617
Zinc (ICP)	55		5.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	662
TPH (Gas/BTXE,Solid)								
5030/M8015	--						10/15/1996	2069
DILUTION FACTOR*	1						10/15/1996	2069
as Gasoline	ND		1.0	mg/kg	5030		10/15/1996	2069
8020 (GC,Solid)	--						10/15/1996	2069
Benzene	ND		2.5	ug/kg	8020		10/15/1996	2069
Toluene	ND		2.5	ug/kg	8020		10/15/1996	2069
Ethylbenzene	ND		2.5	ug/kg	8020		10/15/1996	2069
Xylenes (Total)	ND		2.5	ug/kg	8020		10/15/1996	2069
SURROGATE RESULTS	--						10/15/1996	2069
Bromofluorobenzene (SURR)	89			% Rec.	5030		10/15/1996	2069
M8015 (EXT., Solid)						10/18/1996		
DILUTION FACTOR*	10						10/21/1996	1225
as Diesel	43	DH	10	mg/kg	3550		10/21/1996	1225
as Motor Oil	150	FB *	50	mg/kg	3550		11/22/1996	1046
SURROGATE RESULTS	--						10/21/1996	1225
Ortho-terphenyl (SURR)	112			% Rec.	3550		10/21/1996	1225

* This sample was re-analyzed for Motor Oil at the request of the client.

Ref: 5277 Crow Canyon Road/Proj. No. 4186-F3

SAMPLE DESCRIPTION: S1
Date Taken: 10/10/1996
Time Taken: 13:30
NET Sample No: 269334

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
METHOD 6010 (SOLID)	--						10/21/1996	790
Cadmium (ICP)	ND		2.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	713
Chromium (ICP)	23		2.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	724
Lead (GFAA)	69		0.20	mg/kg	EPA 7421	10/17/1996	10/21/1996	807
Nickel (ICP)	22		5.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	617
Zinc (ICP)	110		5.0	mg/kg	EPA 6010	10/17/1996	10/21/1996	662
TPH (Gas/BTXE,Solid)								
5030/M8015	--						10/15/1996	2069
DILUTION FACTOR*	1						10/15/1996	2069
as Gasoline	1.7		1 0	mg/kg	5030		10/15/1996	2069
8020 (GC,Solid)	--						10/15/1996	2069
Benzene	2.7		2.5	ug/kg	8020		10/15/1996	2069
Toluene	87		2.5	ug/kg	8020		10/15/1996	2069
Ethylbenzene	13		2.5	ug/kg	8020		10/15/1996	2069
Xylenes (Total)	19		2.5	ug/kg	8020		10/15/1996	2069
SURROGATE RESULTS	--						10/15/1996	2069
Bromofluorobenzene (SURR)	69			% Rec.	5030		10/15/1996	2069
M8015 (EXT., Solid)						10/18/1996		
DILUTION FACTOR*	10						10/21/1996	1225
as Diesel	37	D-	10	mg/kg	3550		10/21/1996	1225
as Motor Oil	68	FA *	20	mg/kg	3550		11/22/1996	1046
SURROGATE RESULTS	--						10/21/1996	1225
Ortho-terphenyl (SURR)	115			% Rec.	3550		10/21/1996	1225

* This sample was analyzed for Motor Oil at the request of the client.