Appendix G

Hazardous Materials Assessment

SITE ASSESSMENT REPORT
SECTIONS 13 AND 19 T35 R8W AMOS TRAVIS AND REEVES-CARILLO LEASES
ESPERANZA FIELD
YORBA LINDA, CALIFORNIA

PREPARED FOR:

AMOS A. TRAVIS
406 CALLE MACHO
SAN CLEMENTE, CALIFORNIA 92673

PREPARED BY:

AVANTI ENVIRONMENTAL, INC.
367 VAN NESS WAY, SUITE 621
TORRANCE, CALIFORNIA 90501

JANUARY 13, 1998

AVANTI PROJECT NO.: 97294

Michael Bowery, RG, REA
Project Geologist

Barry R. Smith, REA
Project Manager/Assessor

1.0 INTRODUCTION

Avanti Environmental, Inc. (Avanti) was retained by Amos Travis to conduct a Limited Phase II Environmental Site Assessment consisting of soil sampling and analysis. The purpose of the work was to assess soil conditions in the areas of seven oil and gas production wells and four aboveground storage tanks utilized for storage of crude oil.

According to the Orange County Groundwater Contour Map, November 1996, groundwater below the site is reportedly located at approximately 300 feet below the surface and was not encountered during the site investigation.

1.1 Site Description

The entrance to the site is located on the north side of Via Del Agua just past Devonport Center. The site is located on a dirt access road called Old Edison Road in the town of Yorba Linda, California (Figure 1). The site is occupied by seven oil and gas wells and four aboveground tanks containing crude oil. No buildings are present on the site. The topography of the surrounding area is rolling hills with the encroachment of housing on all sides.

1.2 Scope of Work

Avanti proposed to drill and sample twenty-nine (29) soil borings at the site under the supervision of a California Registered Geologist. Avanti originally proposed to drill three (3) borings per well to a depth of twenty (20) feet, and four (4) borings per tank farm to a depth of ten (10) feet. Due to access restrictions, the inability to locate one Division of Oil, Gas, and Geothermal Resources (DOGGR) abandoned well, and hard drilling conditions (impregnable soils), the proposed scope of work was revised as follows:

- Soil boring B-10, located in the area of the Amos Travis #3 Well, was drilled to an approximate depth of nine (9) feet below ground surface (bgs).
- Borings B-2 and B-3, located in the area of the Amos Travis #2 well, were drilled to an approximate depth of ten (10) feet below ground surface (bgs).
- Borings B-4 and B-5, located in the area of the Amos Travis Tank Farm, were drilled to an approximate depth of ten (10) feet below ground surface (bgs).

- Borings B-7 and B-8, located in the area of Amos Travis #1 well, were drilled to an approximate depth of ten (10) feet below ground surface (bgs).

- Borings B-9 and B-11, located in the area of the Amos Travis #3 well, were drilled to an approximate depth of ten (10) feet below ground surface (bgs).

- Borings B-12 thru B-14, located in the area of Reeves Carillo #2 well, were drilled to an approximate depth of ten (10) feet below ground surface (bgs).

- Boring B-15, located in the area of the Reeves Carillo Tank Farm, were drilled to an approximate depth of ten (10) feet below ground surface (bgs).

- Borings B-16 thru B-18, located in the area of the Reeves Carillo #1 well, were drilled to an approximate depth of ten (10) feet below ground surface (bgs).

- Borings B-19 and B-20, located in the area of Reeves Carillo #3, were drilled to an approximate depth of ten (10) feet below ground surface (bgs)

- Boring B-1 was drilled to an approximate depth of fifteen (15) feet below ground surface (bgs).

- Boring B-6 was drilled to an approximate depth of twenty (20) feet below ground surface (bgs).

The soil borings were advanced using Geoprobe™ direct push truck mounted equipment. The Geoprobe™ sample collection is performed by advancing a two-inch diameter by two-foot long stainless steel split-spoon sampler to the desired depth, removing the sample tip and then continuing to advance the sampler to the desired depth for sample collection. All equipment was washed between sampling locations in an Alconox solution and thoroughly rinsed. Refer to Figure 2 for boring locations.

One soil sample per boring was analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) using EPA Method 418.1. Four samples were analyzed from boring B-6. This report was prepared to summarize the field observations and the analytical results.

2.0 BACKGROUND

The site is an active oil production facility consisting of three (3) active wells, three (3) inactive wells, one (1) abandoned well and two tank farms. Each tank farm consists of two holding tanks utilized for the temporary storage of crude oil. The site is located within the Esperanza Oil Field.

3.0 SITE ASSESSMENT

On December 9 and 10, 1997, Avanti contracted with Maverick Environmental Services to drill and sample at the site. A truck-mounted Geoprobe™ was utilized to advance the borings. Soil samples were collected by advancing a two-inch diameter by two-foot long stainless steel split-spoon sampler to the desired depth, removing the sample tip and then continuing to advance the sampler to the desired depth for sample collection. Sampling equipment was decontaminated before each use by washing in an Alconox Solution and triple-rinsed with tap water to prevent any cross-contamination between soil borings.

One stainless steel tube from each sample location was capped with a Teflon and plastic cap, labeled, and stored in a chilled ice chest until delivered to a state-certified analytical laboratory. Another portion of each recovered sample was placed into a zip-lock plastic bag, sealed, and allowed to come to ambient air temperature. A flame ionization detector (FID) was then used to measure and record organic vapor concentrations in the bags. The FID was calibrated with 100 ppm and 10,000 ppm Methane prior to beginning fieldwork.

One soil sample from borings B-1 through B-5 and B-7 through B-20 and four samples from boring B-6 were analyzed for Total Recoverable Petroleum Hydrocarbons (TRPHs) using EPA Method 418.1. The soil sample collected from a depth of twenty (20) feet bgs in the Amos Travis #1 Well (B-6) was found to have the highest TRPH result at 3200 milligrams per kilogram and was additionally analyzed utilizing EPA method 8015/8020. The results of the analyses are discussed below.

4.0 SUMMARY OF FINDINGS

Based on field observations, with the exception of boring B-6, soil discoloration and odors were not present in the soil borings below an estimated seven (7) to twelve (12) inches. Boring B-6 showed no soil discoloration but hydrocarbon odors and FID readings were present beginning at the five-foot sample and continuing to the base of the boring. Analytical results of the soil samples reported that TRPHs were detected in all but one sample. The levels of the TRPHs detected in all but boring B-6 samples were within a range that does not warrant additional investigation. However, boring B-6 does reveal an elevated concentration of TRPH that increases with depth. Further laboratory testing using EPA 8015/8020, modified for gasoline, reveals that

the contamination is not indicative of a gasoline release. It does however indicate that the contamination is consistent with the oil production being performed at the site. Avanti is unable to determine the full extent of the contamination without further investigation. This being the case, it is recommended that further investigation be performed to determine the lateral and vertical extent of the contamination in the area of boring B-6. The analytical results are summarized in Table 1, and a copy of the laboratory results is included as Appendix A.

5.0 CLOSING COMMENTS

Soil clean-up standards are currently not established by the State of California. However, the Regional Water Quality Control Board – Los Angeles Region (Water Board) Interim Guidance For Remediation Of Petroleum Impacted Sites, Soil Screening Levels, January 1995 indicates that the soil screening level for the site may be 15,000 parts per million (PPM) for TRPH concentrations and 0.1, 10, 68, and 175 ppm, respectively for benzene, toluene, ethylbenzene, and xylene (BTEX) concentrations. The City of Huntington Beach Soil Clean-up standards are often used as typical residential screening levels. Based on these standards the TRPH screening level for soil is 1,000 ppm and BTEX screening levels are 1.0, 10, 10, and 10 ppm respectively. Until the vertical and lateral extent of the soil contamination is known, however, soil cleanup standards cannot be applied.

TABLE 1

Sample Identification	Location	Test Method	Reading	Standard Residential Acceptable Levels
B-6 @ 10'	Amos Travis Well #1	EPA 418.1	1010ppm	1,000 ppm
B-6 @ 15'	Amos Travis Well #1	EPA 418.1	2220ppm	1,000 ppm
B-6 @ 20'	Amos Travis Well #1	EPA 418.1	3200ppm	1,000 ppm

Most of the samples analyzed were well below these standards except in the case of the three samples taken at Amos Travis #1. In this case, the contamination levels increased with depth. No sample was taken at a depth greater than 20 feet.

The three samples slightly exceeded one of the above-referenced standards. Since, however, that standard (City of Huntington Beach) is not one that is necessarily going to be applied to our site, the meaning of the comparison is not clear, and should only be viewed as a reference point.

The real test of these results will come if and when other jurisdictional standards are applied to the soil. In our opinion, the contamination to the depth tested is not significant, and it is probably

most likely (though not certain) that governmental agencies granting permits (for instance, for building) would take this view also. The value of the work conducted during this assessment is in knowing that by most standards, petroleum contamination at the site of the oilfield operations is relatively minor, and consistent with other such sites in a typical oilfield setting.

6.0 LIMITATIONS

Avanti is pleased to have performed an ESA of the subject property. These services were performed in accordance with the scope of work described in this report. Avanti assumes no responsibility for detection or assessment of any conditions affecting the property, which are beyond the scope of work requested by the client.

Avanti has conducted the tasks outlined in the scope of work in a manner consistent with the level of care ordinarily exercised by members of the profession currently practicing under similar conditions. In performing these tasks, Avanti has relied on documents, statements, and other information from public officials and parties outside Avanti's control. Avanti cannot and does not warrant the accuracy of this information.

No environmental assessment is infallible. Some uncertainty will always exist concerning the presence or absence of potentially adverse conditions at a particular property, irrespective of the rigor of the investigation. Accordingly, Avanti offers no warranty that adverse environmental conditions, other than those identified in this report, do not exist at the subject property or may not exist there in the future.

APPENDIX A

LABORATORY REPORTS AND CHAIN-OF-CUSTODY RECORDS

Client: Avanti Environmental
Attn: Mr. Barry Smith

Client's Project: Amos Travis, 97294

Date Received: 12/09/97
Date Sampled: 12/09/97

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst
22366-001	B1 5' Amos Travis #2	EPA 418.1 (TRPH)	12/16/97	25	Soil, mg/kg	10	10	MO
22366-004	B2 5' Amos Travis #2	EPA 418.1 (TRPH)	12/16/97	19	Soil, mg/kg	10	10	MO
22366-006	B3 5' Amos Travis #2	EPA 418.1 (TRPH)	12/16/97	32	Soil, mg/kg	10	10	MO
22366-008	B4 5' Amos Travis Tank Farm	EPA 418.1 (TRPH)	12/16/97	39	Soil, mg/kg	10	10	MO
22366-009	B4 10' Amos Travis Tank Farm	EPA 418.1 (TRPH)	12/16/97	34	Soil, mg/kg	10	10	MO
22366-010	B5 5' Amos Travis Tank Farm	EPA 418.1 (TRPH)	12/16/97	148	Soil, mg/kg	10	10	MO
22366-012	B6 5' Amos Travis #1	EPA 418.1 (TRPH)	12/16/97	134	Soil, mg/kg	10	10	MO
22366-013	B6 10' Amos Travis #1	EPA 418.1 (TRPH)	12/16/97	1010	Soil, mg/kg	10	10	MO
22366-014	B6 15' Amos Travis #1	EPA 418.1 (TRPH)	12/16/97	2220	Soil, mg/kg	10	10	MO
22366-015	B6 20' Amos Travis #1	EPA 418.1 (TRPH)	12/16/97	3200	Soil, mg/kg	10	50	MO
22366-016	B7 5' Amos Travis #1	EPA 418.1 (TRPH)	12/16/97	22	Soil, mg/kg	10	10	MO
22366-018	B8 5' Amos Travis #1	EPA 418.1 (TRPH)	12/16/97	21	Soil, mg/kg	10	10	MO
22366-020	B9 5' Amos Travis #3	EPA 418.1 (TRPH)	12/16/97	25	Soil, mg/kg	10	10	MO
22366-022	B10 5' Amos Travis #3	EPA 418.1 (TRPH)	12/16/97	37	Soil, mg/kg	10	10	MO

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: _____ Date: 12/16/97
Cheryl De Los Reyes
Department Supervisor

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Client: Avanti Environmental
Attn: Mr. Barry Smith

Client's Project: Amos Travis, 97294

Date Received: 12/10/97
Date Sampled: 12/10/97

Lab No.	Sample I.D.	Analysis	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst
22414-001	B15 5' Reeves Carillo Tank Farm	EPA 418.1 (TRPH)	12/16/97	23	Soil, mg/kg	10	10	MO
22414-003	B14 5' Reeves Carillo #2	EPA 418.1 (TRPH)	12/16/97	ND	Soil, mg/kg	10	10	MO
22414-005	B13 5' Reeves Carillo #2	EPA 418.1 (TRPH)	12/16/97	18	Soil, mg/kg	10	10	MO
22414-007	B12 5' Reeves Carillo #2	EPA 418.1 (TRPH)	12/16/97	32	Soil, mg/kg	10	10	MO
22414-009	B11 5' Amos Travis #3	EPA 418.1 (TRPH)	12/16/97	22	Soil, mg/kg	10	10	MO
22414-011	B20 5' Reeves Carillo #3	EPA 418.1 (TRPH)	12/16/97	14	Soil, mg/kg	10	10	MO
22414-013	B19 5' Reeves Carillo #3	EPA 418.1 (TRPH)	12/16/97	107	Soil, mg/kg	10	10	MO
22414-015	B18 5' Reeves Carillo #1	EPA 418.1 (TRPH)	12/16/97	15	Soil, mg/kg	10	10	MO
22414-017	B17 5' Reeves Carillo #1	EPA 418.1 (TRPH)	12/16/97	33	Soil, mg/kg	10	10	MO
22414-019	B16 5' Reeves Carillo #1	EPA 418.1 (TRPH)	12/16/97	19	Soil, mg/kg	10	10	MO

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: Cheryl De Los Reyes (signature)
Cheryl De Los Reyes
Department Supervisor

Date: 12/16/97

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 562 989-4045 Fax: 562 989-4040

Client: Avanti Environmental, Inc.
Attn: Mr. Barry Smith

Client's Project: Amos Travis, 97294
Date Received: 12/09/97
Matrix: Soil

METHOD 8015M (Gasoline)/EPA 8020

Lab No.:	Method Blank			22366-015		
Client Sample I.D.:	---			B6 20' Amos Travis #1		
Date Sampled:	---			12/09/97		
QC Batch #:	978G20S314			978G20S314		
Date Analyzed:				12/19/97		
Analyst Initials:	AK			AK		
Dilution Factor:	1			10		

Analyte	MDL	Units	DLR	Results	DLR	Results
TPH (Gas)	1	mg/kg	1.0	ND	10	41
Benzene	5	µg/kg	5.0	ND	50	ND
Toluene	5	µg/kg	5.0	ND	50	71
Ethylbenzene	5	µg/kg	5.0	ND	50	330
Xylenes (total)	5	µg/kg	5.0	ND	50	100

Lab No.:	
Client Sample I.D.:	
Date Sampled:	
QC Batch #:	
Date Analyzed:	
Analyst Initials:	
Dilution Factor:	

Analyte	MDL	Units
TPH (Gas)	1	mg/kg
Benzene	5	µg/kg
Toluene	5	µg/kg
Ethylbenzene	5	µg/kg
Xylenes (total)	5	µg/kg

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
NA = Not Analyzed

Reviewed/Approved By: (signature)
Lee Ingvaldson, Department Supervisor

Date: 12/24/97

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report

Method: 418.1
Analyst: MO
Data File: 7357-1s

Date: 12-16-97
Sample ID: 22366-004
Matrix: SOIL

ANALYTE	UNITS	LCS	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	REC Limit	RPD	RPD Limit	MDL
TRPH	mg/kg	400	378	95	ND	19	400	408	424	97	101	65-123	4	20	10.0

Approved by: Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/16/97

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report

Method: 418.1
Analyst: MO
Data File: 7357-2s

Date: 12-16-97
Sample ID: 22414-013
Matrix: SOIL

ANALYTE	UNITS	LCS	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	REC Limit	RPD	RPD Limit	MDL
TRPH	mg/kg	400	379	95	ND	107	400	440	452	83	86	65-123	4	20	10.0

Approved by: Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/16/97

Advanced Technology Laboratories

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(562) 989-4045 • FAX (562) 989-4040

FOR LABORATORY USE ONLY:

Batch #: _____ D.O. # _____
P.O.#: _____
Logged By: PW Date: 12-9-97 Time: 1845

Method of Transport: Walk-in ☑ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt: 1. COOLER TEMP °C _____ (2-6) 5. SEALED Y☐ N☐ | 2. CHILLED Y☐ N☐ 6. # OF SPLS MATCH COC Y☐ N☐ | 3. HEADSPACE (VOA) Y☐ N☐ 7. PRESERVED Y☐ N☐ | 4. CONTAINER INTACT Y☐ N☐ 8. CONTR. LOT # _____

Client: AVANTI ENVIRONMENTAL, INC
Attn: BARRY SMITH
Address: 367 VAN NESS WAY, SUITE 621
City TORRANCE State CA Zip Code 90501
TEL: (310) 781-7800
FAX: (310) 781-9090

Project Name: AMOS TRAVIS Project #: 97294
Sampler: (Printed Name) BARRY SMITH (Signature) Barry Smith

Relinquished by: (Signature and Printed Name) Barry Smith Date: 12/9/97 Time: 4:15
Received by: (Signature and Printed Name) Diane Kalwan Date: 12-9-97 Time: 16:20
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

SHIP TO LAB: (SUB CONTRACT) _____
TEST: _____
ATL #: _____
DATE: _____
CLIENT I.D. _____

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
BARRY SMITH Date: 12,9,97
Print Name
Barry Smith
Signature

Send Report To:
Attn: BARRY SMITH
Co: AVANTI
Address 367 VAN NESS
City TORR State CA Zip 9050[illegible]

Special Instructions/Comments:

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other _____
☐ Return To: _____
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analysis(es) Requested: 8010/8021 (Halogenated Volatiles-GC) | 602/8020/8021BTEX (Aromatic Volatiles-GC) | 8080/8080 (Pesticides/PCB-GC) | 624/8240 (Volatiles-GC/MS) | 8260 (Volatiles-GC/MS) | 625/8270 (BNA-GC/MS) | 8015M TPH/GBTEX(COMBINATION) | 8015M TPH/DHO (Diesel-GC) | 418.1 (TPH-IR) | Metals-Total (CAC-6010/7000)

CIRCLE APPROPRIATE MATRIX: SOLID • SOIL • SLUDGE | OIL • SOLVENT • LIQUID | WATER • WASTEWATER | DRINKING WATER | AIR | WIPE • FILTER | OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	Container(s): #	Type	PRESERVATION	REMARKS
	223666-001	B-1 5' AMOS TRAVIS #2	12/9	9:29			M		
	002	B-1 10' AMOS TRAVIS #2	12/9	9:41					
	003	B-1 15' AMOS TRAVIS #2	12/9	9:54					
	004	B-2 5' "	12/9	10:14					
	005	B-2 10' "	12/9	10:27					
	006	B-3 5' "	12/9	10:40					
	007	B-3 10' "	12/9	10:53					
	008	B-4 5' AMOS TRAVIS TANK FARM	12/9	11:22					
	009	B-4 10' "	12/9	11:39					
	010	B-5 5' "	12/9	11:47					

• TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=Zn(AC)$_2$ O=NaOH T=$Na_2S_2O_3$

QA/QC: RTNE ☐ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER _____

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

00

CHAIN OF CUSTODY RECORD

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Signal Hill, CA 90807
(562) 989-4045 • FAX (562) 989-4040

FOR LABORATORY USE ONLY:

Batch #: _____ D.O. # _____
P.O.#: _____
Logged By: _____ Date: _____ Time: _____

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt: 1. COOLER TEMP °C _____ (2-6) 5. SEALED Y☐ N☐ | 2. CHILLED Y☐ N☐ 6. # OF SPLS MATCH COC Y☐ N☐ | 3. HEADSPACE (VOA) Y☐ N☐ 7. PRESERVED Y☐ N☐ | 4. CONTAINER INTACT Y☐ N☐ 8. CONTR. LOT # _____

Client: AVANTI ENVIRONMENTAL, INC
Attn: BARRY SMITH
Address: 367 VAN NESS WAY, SUITE 621
City TORRANCE State CA Zip Code 90501
TEL: (310) 781-7800
FAX: (310) 781-9090

Project Name: AMOS TRAVIS Project #: 97294
Sampler: (Printed Name) BARRY SMITH (Signature) Barry Smith

Relinquished by: (Signature and Printed Name) Barry Smith Date: 12/9/97 Time: 4:15
Received by: (Signature and Printed Name) Diane Kalwan Date: 12-9-97 Time: 1620
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time:
Received by: (Signature and Printed Name) Date: Time:

SHIP TO LAB: (SUB CONTRACT) _____
TEST: _____
ATL #: _____
DATE: _____
CLIENT I.D. _____

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
BARRY SMITH Date: 12,9,97
Print Name
Barry Smith
Signature

Send Report To:
Attn: BARRY SMITH
Co: AVANTI
Address 367 VAN NESS
City TORR State CA Zip 9050[illegible]

Special Instructions/Comments:
ON B6 RUN 8015/8020 ON HIGHEST 418.1

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other _____
☐ Return To: _____
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analysis(es) Requested: 8010/8021 (Halogenated Volatiles-GC) | 602/8020/8021BTEX (Aromatic Volatiles-GC) | 8080/8080 (Pesticides/PCB-GC) | 624/8240 (Volatiles-GC/MS) | 8260 (Volatiles-GC/MS) | 625/8270 (BNA-GC/MS) | 8015M TPH/GBTEX(COMBINATION) | 8015M TPH/DHO (Diesel-GC) | 418.1 (TPH-IR) | Metals-Total (CAC-6010/7000)

CIRCLE APPROPRIATE MATRIX: SOLID • SOIL • SLUDGE | OIL • SOLVENT • LIQUID | WATER • WASTEWATER | DRINKING WATER | AIR | WIPE • FILTER | OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	Container(s): #	Type	PRESERVATION	REMARKS
	223666-011	B5 10' AMOS TRAVIS TANK FARM	12/9	12:09					
	012	B6 5' AMOS TRAVIS #1	12/9	12:16					SEE ABOVE
	013	B6 10' "	12/9	12:23					SEE ABOVE
	014	B6 15' "	12/9	12:31					SEE ABOVE
	015	B6 20' "	12/9	12:59					SEE ABOVE
	016	B7 5' "	12/9	1:13					
	017	B7 10' "	12/9	1:26					
	018	B8 5' "	12/9	1:42					
	019	B8 10' "	12/9	1:52					
	020	B9 5' AMOS TRAVIS #3	12/9	2:17					

• TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=Zn(AC)$_2$ O=NaOH T=$Na_2S_2O_3$

QA/QC: RTNE ☐ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER _____

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

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FOR LABORATORY USE ONLY:

Batch #: _____ D.O. # _____
P.O.#: _____
Logged By: _____ Date: _____ Time: _____

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt: 1. COOLER TEMP °C _____ (2-6) 5. SEALED Y☐ N☐ | 2. CHILLED Y☐ N☐ 6. # OF SPLS MATCH COC Y☐ N☐ | 3. HEADSPACE (VOA) Y☐ N☐ 7. PRESERVED Y☐ N☐ | 4. CONTAINER INTACT Y☐ N☐ 8. CONTR. LOT # _____

Client: AVANTI ENVIRONMENTAL, INC | Address: 367 VAN NESS WAY, SUITE 621 | TEL: (310) 781-7800
Attn: BARRY SMITH | City TORRANCE State CA Zip Code 90501 | FAX: (310) 781-9090
Project Name: AMOS TRAVIS | Project #: 97294 | Sampler: (Printed Name) BARRY SMITH (Signature) Barry Smith
Relinquished by: (Signature and Printed Name) Barry Smith Date: 12/9/97 Time: 7:15 | Received by: (Signature and Printed Name) Diane Dalwan Date: 12-9-97 Time: 1620
Relinquished by: (Signature and Printed Name) Date: Time: | Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: | Received by: (Signature and Printed Name) Date: Time:

SHIP TO LAB: (SUB CONTRACT) _____ TEST: _____ ATL #: _____ DATE: _____ CLIENT I.D. _____

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: BARRY SMITH Date: 12/9/97
Print Name Barry Smith Signature

Send Report To: Attn: BARRY SMITH Co: AVANTI ENVIRONMENT Address 367 VAN NESS WAY #621 City TORR State CA Zip 90501

Special Instructions/Comments:

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal: ☐ Laboratory Standard ☐ Other _____ ☐ Return To: _____
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analysis(es) Requested: 8010/601 (Halogenated Volatiles-GC) | 8020/602/BTEX (Aromatic Volatiles-GC) | 8080/8080 (Pesticides/PCB-GC) | 8240/8240 (Volatiles-GC/MS) | 8260 (Volatiles-GC/MS) | 8270/8270 (BNA-GC/MS) | 8015M TPH/BTEX(COMBINATION) | 8015M TPH/D (Diesel-GC) | 418.1 (TPH/IR) | Metals-Total (CAC-6010/7000)

CIRCLE APPROPRIATE MATRIX: SOLID • SOIL • SLUDGE | OIL • SOLVENT • LIQUID | WATER • WASTEWATER | DRINKING WATER | AIR | WIPE • FILTER | OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	Container(s): #	Type	PRESERVATION	REMARKS
	22366-021	B9 10' AMOS TRAVIS #3	12/9	2:27					
	022	B10 5' "	12/9	2:38					
	023	B10 9' "	12/9	2:43					

QA/QC: RTNE ☐ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER _____

• TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr | B= Emergency Next workday | C= Critical 2 Workdays | D= Urgent 3 Workdays | E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=Zn(AC)$_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(562) 989-4045 • FAX (562) 989-4040

FOR LABORATORY USE ONLY:

Batch #: _____ D.O. # _____
P.O.#: _____
Logged By: _____ Date: _____ Time: _____

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt: 1. COOLER TEMP °C _____ (2-6) 5. SEALED Y☐ N☐ | 2. CHILLED Y☐ N☐ 6. # OF SPLS MATCH COC Y☐ N☐ | 3. HEADSPACE (VOA) Y☐ N☐ 7. PRESERVED Y☐ N☐ | 4. CONTAINER INTACT Y☐ N☐ 8. CONTR. LOT # _____

Client: AVANTI ENVIRO | Address: 367 VAN NESS WAY #621 | TEL: (310) 781-7800
Attn: BARRY SMITH | City TORR State CA Zip Code 90501 | FAX: (310) 781-9090
Project Name: AMOS TRAVIS | Project #: 97294 | Sampler: (Printed Name) BARRY SMITH (Signature) Barry Smith
Relinquished by: (Signature and Printed Name) Barry Smith Date: 12/10/7 Time: 2:10 | Received by: (Signature and Printed Name) Diane Dalwan Date: 12-10-97 Time: 14:15
Relinquished by: (Signature and Printed Name) Date: Time: | Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: | Received by: (Signature and Printed Name) Date: Time:

SHIP TO LAB: (SUB CONTRACT) _____ TEST: _____ ATL #: _____ DATE: _____ CLIENT I.D. _____

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: BARRY SMITH Date: 12/10/7
Print Name Barry Smith Signature

Send Report To: Attn: BARRY SMITH Co: _____ Address _____ City _____ State _____ Zip _____

Special Instructions/Comments:

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal: ☐ Laboratory Standard ☐ Other _____ ☐ Return To: _____
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analysis(es) Requested: 8010/601 (Halogenated Volatiles-GC) | 8020/602/BTEX (Aromatic Volatiles-GC) | 8080/8080 (Pesticides/PCB-GC) | 8240/8240 (Volatiles-GC/MS) | 8260 (Volatiles-GC/MS) | 8270/8270 (BNA-GC/MS) | 8015M TPH/BTEX(COMBINATION) | 8015M TPH/D (Diesel-GC) | 418.1 (TPH/IR) | Metals-Total (CAC-6010/7000)

CIRCLE APPROPRIATE MATRIX: SOLID • SOIL • SLUDGE | OIL • SOLVENT • LIQUID | WATER • WASTEWATER | DRINKING WATER | AIR | WIPE • FILTER | OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	Container(s): #	Type	PRESERVATION	REMARKS
	22414-001	B15 5' REEVES CARILLO TANK FARM	12/10	1025					
	002	B15 10' " "	12/10	1035					
	003	B14 5' REEVES CARILLO #2	12/10	950					
	004	B14 10' " " "	12/10	1004					
	005	B13 5' " " "	12/10	927					
	006	B13 10' " " "	12/10	938					
	007	B12 5' " " "	12/10	903					
	008	B12 8' " " "	12/10	913					
	009	B11 5' AMOS TRAVIS #3	12/10	837					
	010	B11 10' " " "	12/10	843					

QA/QC: RTNE ☐ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER _____

• TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr | B= Emergency Next workday | C= Critical 2 Workdays | D= Urgent 3 Workdays | E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=Zn(AC)$_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

CHAIN OF CUSTODY RECORD

Pg 2 of 2

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(562) 989-4045 • FAX (562) 989-4040

FOR LABORATORY USE ONLY:

Batch #: _____ D.O. # _____
P.O.#: _____
Logged By: _____ Date: _____ Time: _____

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt:
1. COOLER TEMP °C _____ (2-6) 5. SEALED Y☐ N☐
2. CHILLED Y☐ N☐ 6. # OF SPLS MATCH COC Y☐ N☐
3. HEADSPACE (VOA) Y☐ N☐ 7. PRESERVED Y☐ N☐
4. CONTAINER INTACT Y☐ N☐ 8. CONTR. LOT # _____

Client: AVANTI ENVIRONMENTAL
Address: 367 VAN NESS WAY SUITE 621
TEL: (310) 781-7800
Attn: BARRY SMITH
City TORRANCE State CA Zip Code 90501
FAX: (310) 781-9090
Project Name: AMOS TRAVIS Project #: 97294
Sampler: (Printed Name) BARRY SMITH (Signature)

Relinquished by: (Signature and Printed Name) Barry Smith Date: 12/10/97 Time: 2:10 Received by: (Signature and Printed Name) Diane Wilson Date: 12-10-97 Time: 14:15
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Date: Time: Received by: (Signature and Printed Name) Date: Time:

SHIP TO LAB: (SUB CONTRACT) _____
TEST: _____
ATL #: _____
DATE: _____
CLIENT I.D. _____

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: BARRY SMITH Date: 12,10,7
Print Name
Barry Smith
Signature

Send Report To:
Attn: BARRY SMITH
Co: AVANTI
Address 367 VAN NESS WAY
City TORR State CA Zip 90501

Special Instructions/Comments:

Unless otherwise requested, all samples will be disposed 45 days after receipt.

Sample Archive/Disposal:
☐ Laboratory Standard
☐ Other _____
☐ Return To: _____
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

Circle or Add Analysis(es) Requested: 8010/8010 (Halogenated Volatiles-GC); 8021/8020/BTEX (Aromatic Volatiles-GC); 8080/8080 (Pesticides/PCB-GC); 624/8240 (Volatiles-GC/MS); 625/8250 (Volatiles-GC/MS); 8270 (BNA-GC/MS); 8015M TPHG/BTEX(COMBINATION); 8015M TPHD (Diesel-GC); 418.1 (TPH-IR); Metals: Total (CAC-5010/7000)

CIRCLE APPROPRIATE MATRIX: SOLID • SOIL • SLUDGE; OIL • SOLVENT • LIQUID; WATER • WASTEWATER; DRINKING WATER; AIR; WIPE • FILTER; OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	Container(s): #	Type	PRESERVATION	REMARKS
	22414-011	B-20 5' REEVES CARILLO #3	12/10						
	012	B-20 10' " " "	12/10						
	013	B-19 5' " " "	12/10	1214					
	014	B-19 10' " " "	12/10	1221					
	015	B18 5 REEVES CARILLO # 1	12/10	1145					
	016	B18 10 " " "	12/10	1155					
	017	B17 5 " " "	12/10	1120					
	018	B17 10 " " "	12/10	1130					
	019	B16 5 " " "	12/10	1055					
	020	B16 10 " " "	12/10	1105					

QA/QC: RTNE ☐ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER _____

• TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

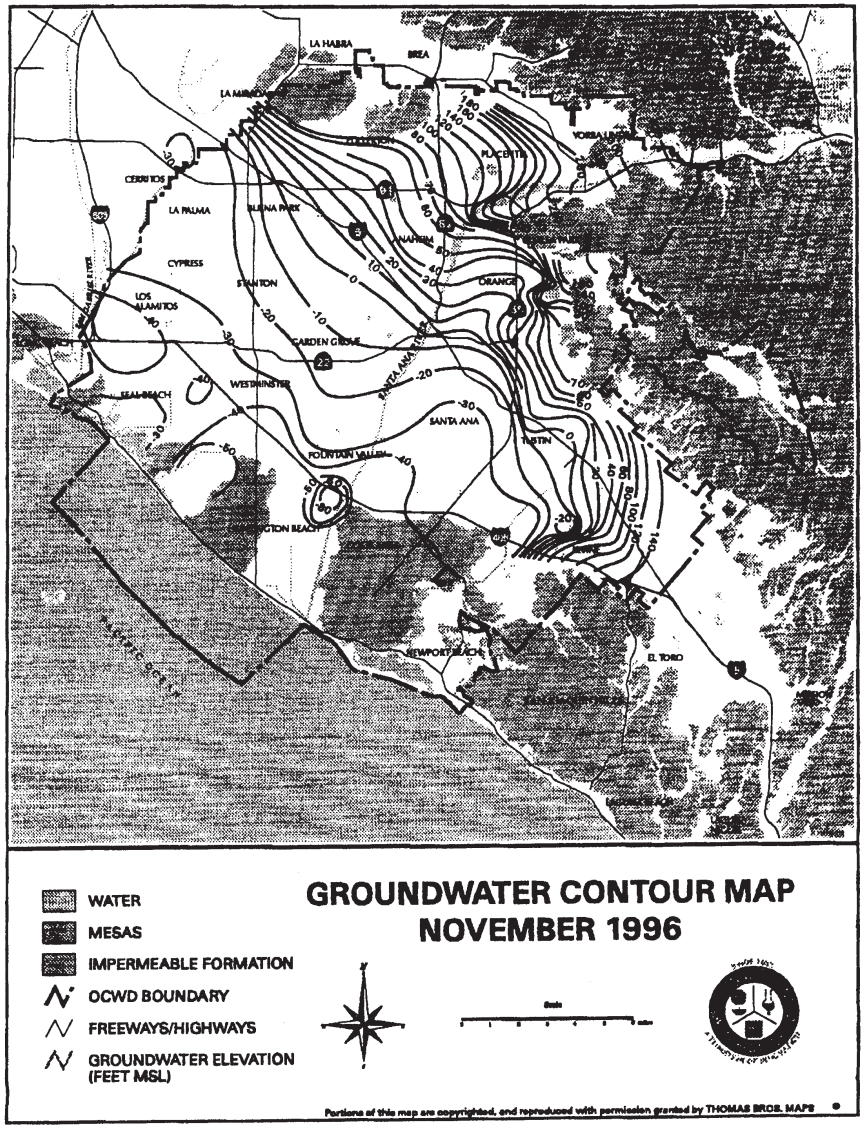
Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

APPENDIX B

ORANGE COUNTY WATER DISTRICT
GROUNDWATER CONTOUR MAP



APPENDIX C

BORING LOGS

PROJECT: Amoe Travis

LOCATION: Amoe Travie #2

BORING DATE: 12/9/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-1

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Silty Clay w/gravel; medium brown; wet							
1	4				5	5	SS	100	NA	◆
	6		Sandy Silt (10 to 20% very fine sand); light olive & light orange brown; sl. moist; no hydrocarbon odor							
2	8									
	10				9.5	10	SS	100	NA	◆
3			Interbedded Sandstone & Siltstone, medium olive brown & light orange brown; sand very fine (10 to 20%); damp; no hydrocabon odor (hard drilling)							
4	12									
	14		Sandstone w/ Siltstone (20 to 40% silt); light orange brown; very fine to fine; no hydrocarbon odor		14	15	SS	100	NA	◆
			END OF EXPLORATION @ 15.00ft		15					
5	16									

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amoe Travis

LOCATION: Amoe Travie #2

BORING DATE: 12/9/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-2

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 200 400 600 800 1000
0	0	GeoProbe	GROUND SURFACE		0					
	2		Clayey Silt w/gravel; medium brown; moist to wet							
1	4				5	5	SS	100	NA	◆
	6		Weathered Bedrock: Sandstone interbedded w/Siltstone; light orange & olive brown; very fine sand; sl. moist; no hydrocarbon odor							
2	8									
	10		Siltstone interbedded w/Sandstone; very fine; light gray, orange & olive brown; sl. moist; micaceous; no HC odor		9	10	SS	100	NA	◆
3			END OF EXPLORATION @ 10.00ft		10					
4	12									
	14									
5	16									

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amoe Travis

LOCATION: Amoe Travis #2

BORING DATE: 12/9/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-3

Page 1 OF 1

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Clayey Silt w/gravel; medium brown; moist to wet							
1	4				5					
	6		Sandstone & Interbedded Siltstone; light orange & olive brown; very fine sand; sl. moist; no hydrocarbon odor			5	SS	100	NA	◆
2	8									
			Sandstone interbedded w/Siltstone; very fine; light orange & olive brown; sl. moist; micaceous; no HC odor		9	10	SS	100	NA	
3	10		END OF EXPLORATION @ 10.00ft		10					
	12									
4	14									
	16									
5										

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amoe Travis

LOCATION: Tank Farm Well #1

BORING DATE: 12/9/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-4

Page 1 OF 1

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Sandy Silt; medium olive brown; very fine sand; wet; no hydrocarbon odor @ 4in. asphalt layer 2-4in. thick							
1	4				5					
	6		Silt w/gravel; dark olive brown; moist; soft conditions; sligth hydrocarbon odor @ 7ft. hard drilling			5	SS	100	NA	◆
2	8									
			Sandstone interbedded w/Siltstone; light orange brown; (10 to 20% siltstone); micaceous; sl. moist, no hydrocarbon odor		9	10	SS	100	NA	◆
3	10		END OF EXPLORATION @ 10.00ft		10					
	12									
4	14									
	16									
5										

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amoe Travis

LOCATION: Tank Farm Well #1

BORING DATE: 12/9/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-5

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Sandy Silt; medium olive brown, very fine sand; wet; no hydrocarbon odor@ 4in. asphalt layer 2-4in. thick							
1	4									
	6		Weathered Bedrock: Sandstone; light orange brown; very fine to fine; trace siltstone; micaceous; damp; no hydrocarbon odor		5	5	SS	100	NA	◆
2	8									
			Siltstone interbedded w/Sandstone; light orange brown; (10 to 20% sandstone); micaceous; sl. moist, no hydrocarbon odor		9	10	SS	100	NA	◆
3	10		END OF EXPLORATION @ 10.00ft		10					
	12									
4	14									
	16									
5										

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amoe Travis

LOCATION: Tank Farm Well #1

BORING DATE: 12/9/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-6

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2k 4k 6k 8k 10k
0	0	GeoProbe	GROUND SURFACE		0					
	2		Silty Sand; light orange brown; very fine sand; trace gravel; moist; no hydrocarbon odor							
1	4									
	6		Silty Sand; light olive brown; very fine; trace sandstone/siltstone; damp; micaceous; slight hydrocarbon odor		5	5	SS	100	NA	◆
2	8									
	10		Weathered Bedrock: Siltstone interbedded w/Sandstone; light orange brown; micaceous; sl. moist, moderate hydrocarbon odor		10	10	SS	100	NA	◆
3	12									
	14									
4	16		Siltstone; light olive brown; trace sandstone; damp; micaceous; slight hydrocarbon odor		15	15	SS	100	NA	◆
5	18									
	20		Siltstone w/interbedded Sandstone; light orange brown; damp; micaceous; slight hydrocarbon odor		19	20	SS	100	NA	◆
6	22		END OF EXPLORATION @ 20.00ft		20					
7	24									
	26									
8	28									
9	30									
	32									
10										

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amoe Travis

LOCATION: Tank Farm Well #1

BORING DATE: 12/9/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-7

Page 1 OF 1

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
			Silty Clay; dark olive brown; wet; no hydrocarbon odor							
					5	5	SS	100	NA	◆
2	6		Siltstone interbedded w/Sandstone; light orange brown; very fine to fine; micaceous; damp; no hydrocarbon odor							
3	10		Sandstone with Siltstone (10 to 20%); light orange brown; micaceous; dry, no hydrocarbon odor		9	10	SS	100	NA	◆
			END OF EXPLORATION @ 10.00ft		10					

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amoe Travis

LOCATION: Tank Farm Well #1

BORING DATE: 12/9/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-8

Page 1 OF 1

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
			Silty Clay; dark olive brown; wet; no hydrocarbon odor @ 2 to 3" asphalt							
					5	5	SS	100	NA	◆
2	6		Silty Clay; light orange brown; (10 to 30% silt); micaceous; damp; no hydrocarbon odor							
3	10		Sandstone with Siltstone (10 to 20%); light orange brown; micaceous; dry, no hydrocarbon odor		9	10	SS	100	NA	◆
			END OF EXPLORATION @ 10.00ft		10					

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Well #3

BORING DATE: 12/9/97

B-9

Page 1 OF 1

DATUM: GROUND SURFACE

DIP: 90

LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Samples Type	Samples Recovery (%)	Samples "N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Silty Sand; medium yellow brown; wet; no hydrocarbon odor @ 3 ft. hard drilling							
1	4				5	5	SS	100	NA	◆
	6		Silty Sand; light orange brown; (20 to 40% silt); very fine sand; micaceous, damp; no hydrocarbon odor							
2	8				9					
			Weathered Bedrock: Siltstone W/Sandstone (10%); very fine sand; light orange brown; micaceous; moist, no hydrocarbon odor			10	SS	100	NA	◆
3	10		END OF EXPLORATION @ 10.00ft		10					
	12									
4	14									
	16									
5										

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Well #3

BORING DATE: 12/9/97

B-10

Page 1 OF 1

DATUM: GROUND SURFACE

DIP: 90

LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Samples Type	Samples Recovery (%)	Samples "N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Silty Sand; medium yellow brown; wet; no hydrocarbon odor @ 3 ft. hard drilling							
1	4				5	5	SS	100	NA	◆
	6		Weathered Bedrock: Siltstone Interbedded W/Sandstone; light olive brown; (20 to 40% silt); very fine sand; micaceous, damp; no hydrocarbon odor							
2	8				9					
			Siltstone W/Sandstone (10%); very fine sand; light orange brown; micaceous; moist, no hydrocarbon odor			10	SS	100	NA	◆
3	10		END OF EXPLORATION @ 10.00ft		10					
	12									
4	14									
	16									
5										

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Well #3

BORING DATE: 12/10/97

B-11

Page 1 OF 1

DATUM: GROUND SURFACE

DIP: 90

LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Samples Type	Samples Recovery (%)	Samples "N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Silty Sand; medium yellow brown; wet; no hydrocarbon odor @ 3 ft. hard drilling							
1	4				5	5	B-11	100	NA	
	6		Sandy Silt; mdium brown; (10 to 20% sand); very fine sand; micaceous, damp; no hydrocarbon odor @ 5ft. hard							
2	8				9					
			Weathered Bedrock: Siltstone w/Sandstone; very fine sand; light orange/gray brown; damp; moist, no hydrocarbon odor			10	B-11	100	NA	
3	10		END OF EXPLORATION @ 10.00ft		10					
	12									
4	14									
	16									
5										

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Reeves Carillo #2

BORING DATE: 12/10/97

B-12

Page 1 OF 1

DATUM: GROUND SURFACE

DIP: 90

LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Samples Type	Samples Recovery (%)	Samples "N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Silty Sand; medium yellow brown; wet; no hydrocarbon odor @ 3 ft. hard drilling							
1	4				5	5	SS	100	NA	
	6		Sandy Silt; medium brown; (10 to 20% sand); very fine sand; micaceous, damp; no hydrocarbon odor @ 5ft. hard							
2	8				9					
			Weathered Bedrock: Siltstone w/Sandstone; very fine sand; light orange/gray brown; damp; moist, no hydrocarbon odor			10	SS	100	NA	
3	10		END OF EXPLORATION @ 10.00ft		10					
	12									
4	14									
	16									
5										

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Reeves Carillo #2

B-13

Page 1 OF 1

BORING DATE: 12/10/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Silty Sand; medium yellow brown; wet; no hydrocarbon odor							
1	4				5	5	SS	100	NA	◆
	6		Weathered Bedrock: Sandstone w/Siltstone; light orange brown; (10 to 20% silt); very fine sand; micaceous, damp; no hydrocarbon odor							
2	8				9	10	SS	100	NA	◆
3	10		Weathered Bedrock: same as above; more competent with depth							
			END OF EXPLORATION @ 10.00ft		10					
4	12									
	14									
5	16									

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Reeves Carillo #2

B-14

Page 1 OF 1

BORING DATE: 12/10/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Sandy Silt; medium orange brown; wet; no hydrocarbon odor							
1	4				5	5	SS	100	NA	◆
	6		Weathered Bedrock: Sandstone w/Interbedded Siltstone; light orange brown; very fine sand; micaceous, damp; no hydrocarbon odor							
2	8				9	10	SS	100	NA	◆
3	10		Silty Sandstone; light yellow brown, very fine sand; damp; micaceous; no hydrocarbon odor							
			END OF EXPLORATION @ 10.00ft		10					
4	12									
	14									
5	16									

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amoa Travis

B-15

Page 1 OF 1

LOCATION: Reeves Carillo #2 TF

BORING DATE: 12/10/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Samples Type	Samples Recovery (%)	Samples "N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Sandy Silt; light yellow brown; very fine sand; (10 to 20% sand), moist, no hydrocarbon odor							
1	4				5	5	SS	100	NA	◆
	6		Weathered Bedrock: Sandstone & Siltstone; light olive brown; (10 to 20% sand); very fine sand; micaceous, damp; no hydrocarbon odor							
2	8				9					
3	10		Siltstone & Sandstone; medium olive brown; very fine sand; damp; micaceous; no hydrocarbon odor			10	SS	100	NA	◆
			END OF EXPLORATION @ 10.00ft		10					
4	12									
	14									
5	16									

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amoa Travis

B-16

Page 1 OF 1

LOCATION: Reeves Carillo #1

BORING DATE: 12/10/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Samples Type	Samples Recovery (%)	Samples "N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
	2		Sandy Silt; medium yellow brown; very fine sand; (10 to 20% sand); trace gravel; wet; no hydrocarbon odor							
1	4				5	5	SS	100	NA	◆
	6		Silty Clay; dark brown; micaceous, damp; no hydrocarbon odor							
2	8				9					
3	10		Silty Clay, same as above			10	SS	100	NA	◆
			END OF EXPLORATION @ 10.00ft		10					
4	12									
	14									
5	16									

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Reeves Carillo #1

BORING DATE: 12/10/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-17

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Samples Type	Samples Recovery (%)	Samples "N" Value	Concentration FID 0 2 4 6 8 10
			GROUND SURFACE		0					
0	0	GeoProbe	Sandy Silt w/trace clay; light yellow brown; very fine sand; moist to wet; no hydrocarbon odor							
	2									
1	4									
					5	5	SS	100	NA	◆
2	6		Silty Clay; dark brown; (10 to 40% silt); micaceous, damp; no hydrocarbon odor							
	8									
					9					
3	10		Silty Clay, same as above			10	SS	100	NA	◆
			END OF EXPLORATION @ 10.00ft		10					
4	12									
	14									
5	16									

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Reeves Carillo #1

BORING DATE: 12/10/97 DATUM: GROUND SURFACE DIP: 90 LOGGED: M. Bowery

B-18

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Samples Type	Samples Recovery (%)	Samples "N" Value	Concentration FID 0 2 4 6 8 10
			GROUND SURFACE		0					
0	0	GeoProbe	Sandy Silt w/trace gravel; medium brown; very fine sand; moist to wet; no hydrocarbon odor							
	2									
1	4									
					5	5	SS	100	NA	◆
2	6		Silty Clay; dark brown; (30 to 50% silt); micaceous, damp; no hydrocarbon odor							
	8									
					9					
3	10		Silty Clay, same as above			10	SS	100	NA	◆
			END OF EXPLORATION @ 10.00ft		10					
4	12									
	14									
5	16									

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery Avanti Environmental CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Reeves Carillo #3

BORING DATE: 12/10/97

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Page 1 OF 1

DATUM: GROUND SURFACE

DIP: 90

LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
			Sandy Silt w/trace gravel; dark chocolate brown; very fine sand; (10 to 20% sand); moist; no hydrocarbon odor							
					5	5	SS	100	NA	◆
2	6		Clayey Silt; mottled dark brown; (20 to 40% clay); micaceous, damp; no hydrocarbon odor							
					9					
3	10		Silty Clay, increasing clay content (40 tp 50%); moist; no hydrocarbon odor			10	SS	100	NA	◆
			END OF EXPLORATION @ 10.00ft		10					

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

PROJECT: Amos Travis

LOCATION: Reeves Carillo #3

BORING DATE: 12/10/97

B-20

Page 1 OF 1

DATUM: GROUND SURFACE

DIP: 90

LOGGED: M. Bowery

DEPTH SCALE METRES	DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	DEPTH B.G.S. (ft)	Samples ID	Type	Recovery (%)	"N" Value	Concentration FID 0 2 4 6 8 10
0	0	GeoProbe	GROUND SURFACE		0					
			Sandy Silt w/trace gravel; dark chocolate brown; very fine sand; (10 to 20% sand); moist; no hydrocarbon odor							
					5	5	SS	100	NA	◆
2	6		Clayey Silt w/trace pebbles; mottled dark brown; (20 to 40% clay); micaceous, damp; no hydrocarbon odor							
					9					
3	10		Clayey Silt, same as above			10	SS	100	NA	◆
			END OF EXPLORATION @ 10.00ft		10					

NO INSTALLATION

END OF EXPLORATION

DRAWN: M. Bowery

Avanti Environmental

CHECKED: B. Smith

APPENDIX D

LOS ANGELES/VENTURA COUNTIES
REGION 4
SOIL SCREENING LEVELS

Cal/EPA

•Groundwater Protection•

INTERIM SITE ASSESSMENT & CLEANUP GUIDEBOOK

May 1996
California Regional Water Quality Control Board
Los Angeles and Ventura Counties
Region 4

PREVENTING GROUNDWATER POLLUTION: ASSESSING YOUR SITE FOR CHEMICAL CONTAMINANTS

Table 4-1: Maximum Soil Screening Levels (mg/kg) for TPH and BTEX above Drinking Water Aquifers

	Distance Above Groundwater	Carbon Range		
TPH		C4-C12	C13-C22	C23-C32
	>150 feet	1,000	10,000	50,000
	20-150 feet	500	1,000	10,000
	<20 feet	100	100	1,000

	Distance Above Groundwater	Lithology			
BTEX		Gravel	Sand	Silt	Clay
	150 feet	B=0.044 T=2 E=8 X=23	B=0.077 T=4 E=17 X=48	B=0.165 T=9 E=34 X=93	B=0.8 T=43 E=170 X=465
	80 feet	B=0.022 T=1 E=4 X=11	B=0.033 T=2 E=7 X=20	B=0.066 T=4 E=15 X=40	B=0.34 T=18 E=73 X=200
	20 feet	B=0.011 T=0.15 E=0.7 X=1.75	B=0.011 T=0.3 E=0.7 X=1.75	B=0.011 T=0.45 E=2 X=5.3	B=0.044 T=2.3 E=9 X=24.5

- TPH = Total petroleum hydrocarbons.
- BTEX = benzene, toluene, ethylbenzene, and xylenes, respectively. MCLs (ppm): B=0.001, T=0.15, E=0.7, X=1.75.
- MTBE (methyl tertiary butyl ether) must be included in BTEX analyses.
- BTEX screening concentrations determined per the attenuation factor method as described in RWQCB Guidance for VOC Impacted Sites (March 1996), with a natural degradation factor of 11 for benzene. Table values for BTEX can be linearly interpolated between distance above groundwater and are proportional to fraction of each lithological thickness.
- Values in Table 4-1 are for soils above drinking water aquifers. All groundwaters are considered as drinking water resources unless exempted by one of the criteria as defined under SWRCB Resolution 88-63 (TDS>3000 mg/L, or deliverability <200 gal/day, or existing contamination that cannot be reasonably treated). Regional Board staff will make a determination of potential water use at a particular site considering water quality objectives and beneficial uses. For non-drinking water aquifers, regardless of depth, TPH for ">150 feet" category in the table should be used; BTEX screening levels are set at 100 times respective MCLs as preliminary levels determined to be protective of human health and the environment.
- Distance above groundwater must be measured from the highest anticipated water level. Lithology is based on the USCS scale.
- For BTEX, each component is not to exceed the specified screening level.
- For TPH, the total allowable for each carbon range is not to be exceeded. In areas of naturally-occurring hydrocarbons, Regional Board staff will make allowance for TPH levels.
- BTEX to be analyzed by EPA Method 8020 or EPA Method 8260 (usually for confirmation).
- TPH to be analyzed by EPA Methods 418.1 plus 8015 (Modified). Ranges of TPH to be analyzed by GC/MS carbon range methods (EPA Method 8260) or EPA Method 8015 (Modified).

APPENDIX E

SANTA ANA COUNTY
REGION 8
SOIL SCREENING LEVELS

Environmental
Science &
Engineering, Inc.

September 29, 1992

Mr. Kamron Saremi
Water Resource Control Engineer
California Regional Water Quality
Control Board - Santa Ana Region
2010 Iowa Avenue, Suite 100
Riverside, CA 92507

SUBJECT: DOCUMENTATION OF ESE/RWQCB CORRESPONDENCE REGARDING CONFIRMATION SAMPLING PROTOCOL AT UNOCAL HARTWELL-STERNS AND UNION BRADFORD PROPERTIES.

Dear Mr. Saremi:

This letter documents the reasoning and events leading to the mutually agreeable revision of the sampling protocol which was originally outlined in your Remedial Action Plan (RAP) review letters. The letters were presented to Environmental Science & Engineering, Inc. (ESE) for the Unocal Hartwell-Sterns property (letter dated July 16, 1992) and Union Bradford property (letter dated July 22, 1992). The revised protocol, which we discussed on September 23, 1992, is outlined on page 2 of this letter.

The protocol originally proposed by the California Regional Water Quality Control Board - Santa Ana Region (RWQCB) for the sampling of completed excavations was as follows:

> For confirmation sampling, we request that the bottoms and sidewalls of all excavations be analyzed for [total recoverable petroleum hydrocarbons]* TRPH ([Environmental Protection Agency] EPA Method 418.1), [total petroleum hydrocarbons] TPH (EPA Method 8015), aromatic hydrocarbons (EPA Method 8020), PCBs and pesticides (EPA Method 8080) and heavy metals (arsenic, barium, chromium and lead) [as outlined in California Code of Regulations, Title 22]. In areas where surficial asphaltic or "tarry" materials are present, soil samples should be collected and analyzed for the presence of polynuclear aromatic hydrocarbons utilizing EPA Method 8250 or 8270.
>
> * Brackets indicate ESE inserts

17390 Brookhurst Street, Suite 110 Fountain Valley, CA 92708 Phone (714) 964-8722 Fax (714) 962-3383

ESE realizes that in order to provide oversight for a remediation program, the RWQCB needs sufficient analytical information to assure that remediation is complete. However, to analyze all samples from excavations for the above mentioned constituents would be cost prohibitive as well as excessive to demonstrate the absence of various chemicals on oil field properties primarily containing crude oil-impacted soil. ESE met with the RWQCB on September 17, 1992 to discuss alternative approaches to sampling. Following this meeting, ESE was required to develop rationale for an alternative sampling frequency. On September 21, 1992, ESE phoned the RWQCB and presented a sampling plan for review. Following review, the RWQCB contacted ESE and the following sampling plan was mutually agreed upon:

> Each excavation area should be evaluated on the basis of chemicals identified near that area during the site assessment of the property in addition to those identified during excavation. During excavation, field screening will be performed by visually inspecting the soil, measuring volatile organic compound (VOC) emissions, and periodically analyzing soil samples for other chemicals deemed likely to occur. For example, drilling mud should be analyzed for heavy metals and petroleum gas condensate should be analyzed for TPH and aromatic hydrocarbons.
>
> The chemicals found to be present in excess of clean-up levels will dictate which analyses should be performed on the confirmation samples. Confirmation samples have typically been collected at approximately 25-foot intervals on excavation floors and sidewalls. If excavation areas are found to contain chemical contaminants other than crude oil, the sampling interval will remain the same. Only samples from the specific locations where the chemicals had been found, need to be analyzed for those chemicals.
>
> Excavation of crude oil-impacted soil is usually expected to extend to a minimum defined depth below final grade (the ground surface elevation following site grading). For example, in proposed residential areas, crude oil found to be in excess of clean-up levels within the upper 10 to 12 feet (relative to final grade) is expected to be excavated and remediated. If crude oil-impacted soil is intended to be left in place at depths greater than the minimum stated in the RAP, samples must be collected and analyzed to confirm that no chemicals above action levels other than TRPH are present. The analyses should include EPA Methods 418.1, 8015 (gas and diesel), 8020 or 8240,

8080, and analysis for arsenic, barium, chromium and lead. Other analyses may be performed as deemed appropriate. In addition, borings may be required to be drilled to determine the vertical extent of the material left in place and its composition. The agencies will be notified in cases where TRPH is intended to be left in place.

o o O o o

This letter was written at the request of the RWQCB to document the revisions which are to be applied to the Hartwell-Sterns and Union Bradford RAPs. If there are any questions, please contact the undersigned at (714)964-8722.

Sincerely,
ENVIRONMENTAL SCIENCE & ENGINEERING, INC.,

Marina Robertson

Marina Robertson, R.G., C.E.G.
Senior Geologist

Attachment: Copies of RWQCB review letters dated July 16, 1992 and July 22, 1992.

cc: R.Y. Salisbury - Unocal
Steve Sharp - Orange County Health Care Agency
Chris Becker - City of Placentia

REMEDIAL ACTION PLAN FOR THE UNOCAL GL-31 PROPERTY LOCATED IN FULLERTON, CALIFORNIA
(Project #6-92-4830)

PREPARED FOR:

UNION OIL COMPANY OF CALIFORNIA
LAND & DEVELOPMENT
10805 HOLDER STREET, SUITE 300
CYPRESS, CALIFORNIA 90630

PREPARED BY:

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
17390 BROOKHURST STREET, SUITE 110
FOUNTAIN VALLEY, CALIFORNIA 92708
(714) 964-8722

SEPTEMBER 17, 1992

2.0 CLEAN-UP CRITERIA

The clean-up criteria proposed by ESE for the property are based on ESE's current understanding of standards typically accepted by the County and other relevant agencies, with consideration given to local site conditions, final grade design, and feasibility. The proposed clean-up criteria are founded on federal, state and local regulations which do not classify a material as "hazardous" based solely on the presence of TRPH. The clean-up criteria proposed by ESE for the property are as follows:

- Remediation activities for crude oil-impacted soil (TRPH) will be conducted within the GL-31 and Imperial Golf Course Properties. TRPH-impacted soil will be treated to less than 1,000 mg/kg and placed in "Proposed" and "Proposed Future" residential areas at least 12 feet below proposed rough grade elevation (grade). Clean-up levels less stringent have previously been accepted by the County for similar oil field properties. EPA Method 418.1 will be utilized to analyze for TRPH. The proposed clean-up levels for TRPH in soil in most streets is 2,000 mg/kg 3 feet below grade. Certain streets are required to have a clean-up level of 100 mg/kg 8 feet below grade.

If, during the course of soil remediation, vapor readings, staining, odor, or past site land usage indicates that one or more of the following chemical compounds may be present, the following analyses will be performed:

- Excavated soil containing TPH and BTEX will be remediated to levels acceptable to the County. TPH analysis will be performed using EPA Method 8015M, modified for diesel or gasoline, depending on the circumstances. Typically the County accepts the following cleanup criteria for TPH- and BTEX-bearing soils on oil field sites: 100 mg/kg TPH, not-detected (ND) benzene, 0.1 mg/kg toluene, 1.75 mg/kg total xylenes and 0.68 mg/kg ethylbenzene. However, the RWQCB has allowed clean-up levels as high as 10 times these levels for soil on other remediation projects. It should be noted that when crude oil is present in a soil sample being analyzed for BTEX, dilution may be necessary to detect the BTEX. EPA Method 8020 may be used to screen samples for BTEX but concentrations detected with this method should be confirmed using EPA Method 8240.

- Arsenic, barium, chromium and lead are the heavy metals listed by the County as being associated with oil-field activities. If these metals are detected, they will be remediated to levels below the TTLC or STLC as listed in the California Code of Regulations, Title 22, (State of California, 1990). If the TTLC is not exceeded but the STLC is exceeded by 10 times, then a Waste Extraction Test (WET) shall be performed. The WET, performed as described in Title 22, requires that 50 grams of soil be subjected to extraction in 500 milliliters of extraction solution. This extraction process dilutes the sample approximately 10 times and evaluates the final concentration with respect to the STLC. Samples, therefore, only need to be analyzed using the WET in cases where the total concentration of the chemical exceeds the STLC criteria for that chemical by 10 times. This approach has been accepted by the State of California Department of Health Services. The analytical method used for metals will be CCR Metals.

- The bottoms and sidewalls of all excavations will be routinely analyzed for TRPH, and for BTEX or other chemical compounds as conditions warrant.

- Excavated soil containing TRPH will be treated on site or on the Imperial Golf Course in designated treatment areas utilizing bioremediation in the form of landfarming. TRPH concentrations in remediated soil will be verified by sampling the soil in a grid pattern (See Section 4.2). Samples may be screened on site using the Foxboro infrared spectrophotometer (IR), but will ultimately be analyzed by a state-certified laboratory using EPA Method 418.1. The clean-up criteria for treated soil will be an overall maximum average TRPH concentration of 1,000 mg/kg (and 2,000 mg/kg) with no individual grid square allowed to exceed 1,300 mg/kg (and 2,500 mg/kg).

- Excavated soil containing VOCs with sustained organic vapor readings in excess of 50 ppm will be stockpiled in an isolated portion of the site and treated in accordance with South Coast Air Quality Management District (SCAQMD) regulations.

- Excavation of soil containing VOCs will be performed in accordance with SCAQMD Rule 1166 criteria under a blanket permit held by ESE.

- Areas containing TRPH in excess of 1,000 mg/kg which are deeper than 12 feet below grade in proposed residential areas, or in excess of 2,000 mg/kg and deeper than 3 feet below grade in streets and green belts which are not to be excavated because of inaccessibility or impracticality, will be analyzed for the following constituents in addition to TRPH: CCR Metals, pH by EPA Method 9045, pesticides and PCBs by EPA

Method 8080, and VOCs by EPA Methods 8010/8020 or 8240. The RWQCB may require that the vertical extent of impacted soil be determined, to insure that ground water quality has not been impacted beneath the property. Selected areas may also be analyzed for polynuclear aromatics (PNAs) using EPA methods 8100 or 8270.

- Subsurface soil surrounding oil wells (which have not been previously assessed) will be monitored for the presence of methane or other soil-gas vapors.

- No additional ground-water sampling and analysis will be conducted unless conditions encountered during remediation indicate the water has been impacted. The designated inspector for this project will be notified as excavations approach completion and confirmation sampling commences.

In addition to chemical compounds being present, concrete and asphalt fragments may be placed in deep fill areas upon approval of the on-site geotechnical consultant.

APPENDIX F

DIVISION OF OIL AND GAS DOCUMENTS

REPORT OF
PROPERTY/WELL TRANSFER OR ACQUISITION

We have been informed that you have Acquired/Transferred wells.
Please complete and return the following to the :

October 20, 1987

Division of Oil and Gas
245 W. Broadway, Suite 475
Long Beach, CA 90802

Effective August 15, 1987 (date),

PETROMINERALS CORPORATION (old operator) transferred ownership of

the following described property to Hillcrest Beverly Oil Corporation (new operator)

1. See attached (5 sheets) (legal description of property)

Sec. 19, T. 3S, R. 8W, ____ B. & M., Esperanza field, Orange Co. (field or county)

2. Amos Travis #1, #2, #3, #4. (list of wells)
Reeves Carrillo #1, #2, #3.

(If additional space is needed, use back of form.)

Petrominerals Corporation (name of old operator)	Hillcrest Beverly Oil Corporation (name of new operator)
12362 Beach Blvd., Suite 9 (address)	14711 Bentley Circle (address)
Stanton, CA 90680	Tustin, CA 92680
Phone (714) 895-6370	Phone (714) 730-9654
By [signature] C.F.O. (signature) (title)	By ____ (signature) (title)

OG30A (7/85/DWRR/1M)

[illegible] TITLE INSURANCE COMPANY OF CALIFORNIA

D. THE LAND, SUBJECT TO SAID LEASE, AND WHICH IS REFERRED TO IN THIS REPORT AS "SAID LAND", IS DESCRIBED AS:

PARCEL 1:

THE NORTHERLY 3500.00 FEET OF THAT PORTION OF THE RANCHO CANON DE SANTA ANA, IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, AS DESCRIBED IN THE FINAL DECREE OF PARTITION, A CERTIFIED COPY OF WHICH WAS RECORDED FEBRUARY 8, 1974 IN BOOK 28 PAGE 158 OF DEEDS IN THE OFFICE OF THE COUNTY RECORDER OF LOS ANGELES COUNTY, CALIFORNIA, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT IN THE NORTHERLY BOUNDARY OF THE RANCHO CANON DE SANTA ANA 400 FEET NORTH 88 DEGREES 30 MINUTES WEST FROM THE NORTHEAST CORNER OF THE SECOND CLASS LAND ALLOTTED TO WM. MC KEE IN THE DECREE OF PARTITION OF SAID RANCHO, A CERTIFIED COPY OF WHICH IS RECORDED IN THE OFFICE OF THE COUNTY RECORDER OF LOS ANGELES COUNTY, IN BOOK 28 PAGE 158, OF DEEDS THEREOF AND RUNNING THENCE NORTH 88 DEGREES 30 MINUTES WEST ALONG SAID NORTHERLY BOUNDARY 841 FEET; THENCE SOUTH 1 DEGREE 45 MINUTES EAST 9058 FEET TO A POINT ABOUT 30 FEET SOUTH OF THE CENTER OF THE CAJON DITCH; THENCE NORTH 59 DEGREES 23 MINUTES WEST PARALLEL TO SAID DITCH 209.4 FEET; THENCE SOUTH 2 DEGREES 30 MINUTES WEST 1790 FEET TO THE CENTER OF THE SOUTHERN CALIFORNIA RAILWAY TRACK; THENCE ON SAME COURSE 174.5 FEET TO A POINT ABOUT 30 FEET NORTH OF THE CENTER OF THE ANAHEIM DITCH; THENCE SOUTH 78 DEGREES 3 MINUTES EAST PARALLEL WITH SAID DITCH 231.7 FEET; THENCE SOUTH 70 DEGREES 45 MINUTES EAST PARALLEL WITH SAID DITCH 96.3 FEET; THENCE SOUTH 1 DEGREE 45 MINUTES EAST 1530 FEET TO THE SOUTHERLY BOUNDARY OF SAID RANCHO; THENCE NORTH 63 DEGREES EAST ALONG SAID SOUTHERLY BOUNDARY 921 FEET; THENCE NORTH 1 DEGREE 45 MINUTES WEST 12074.2 FEET TO THE POINT OF BEGINNING.

SAID LAND IS INCLUDED WITHIN THE AREA SHOWN ON A PARCEL MAP FILED IN BOOK 124 PAGES 10 AND 11 OF PARCEL MAPS, RECORDS OF SAID COUNTY.

PARCEL 2:

THAT PORTION OF THE SECOND CLASS LANDS ALLOTTED TO WILLIAM MC KEE AND PRUDENCIO YORBA, TOGETHER WITH THAT PORTION OF THE LAND ALLOTTED TO M. J. W. DE SHORB IN THE DECREE OF PARTITION OF THE RANCHO CANON DE SANTA ANA RENDERED IN CASE NO. 1978 OF THE 17TH JUDICIAL DISTRICT COURT OF CALIFORNIA, A CERTIFIED COPY OF WHICH WAS RECORDED FEBRUARY 8, 1874 IN BOOK 28 PAGE 158 OF DEEDS OF LOS ANGELES COUNTY, CALIFORNIA, AND LOCATED IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, DESCRIBED AS A WHOLE AS FOLLOWS:

BEGINNING AT THE POINT ON THE WESTERLY LINE OF THE CARRILLO RANCH PROPERTY NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 3950.98 FEET FROM THE NORTHERLY LINE OF THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY'S 100.00 FOOT STRIP OF LAND AS SHOWN ON THE MAP FILED IN BOOK 37 PAGE 33 OF RECORD OF SURVEYS IN THE OFFICE OF THE COUNTY RECORDER OF SAID ORANGE COUNTY; THENCE SOUTH 41 DEGREES 19 MINUTES 19 SECONDS EAST 157.87 FEET; THENCE SOUTH 42 DEGREES 07 MINUTES 13 SECONDS EAST 59.48 FEET; THENCE SOUTH 44 DEGREES 07 MINUTES 50 SECONDS EAST 99.54 FEET; THENCE SOUTH 49 DEGREES 59 MINUTES 14 SECONDS EAST 104.47 FEET; THENCE SOUTH 56 DEGREES 35 MINUTES 03 SECONDS EAST 102.11 FEET; THENCE SOUTH 74 DEGREES 14 MINUTES 36 SECONDS EAST 45.59 FEET; THENCE NORTH 88 DEGREES 51 MINUTES 06 SECONDS EAST 56.38 FEET; THENCE NORTH 87 DEGREES 25 MINUTES 58 SECONDS EAST 48.52 FEET; THENCE NORTH 76 DEGREES 34 MINUTES 53 SECONDS EAST 59.86 FEET; THENCE NORTH 75 DEGREES 39 MINUTES 36 SECONDS EAST 128.13 FEET; THENCE NORTH 76 DEGREES 13 MINUTES 48 SECONDS EAST 137.57 FEET;

THENCE SOUTH 34 DEGREES 06 MINUTES 59 SECONDS EAST 42.04 FEET; THENCE SOUTH 31 DEGREES 21 MINUTES 37 SECONDS EAST 123.92 FEET; THENCE SOUTH 73 DEGREES 27 MINUTES 51 SECONDS EAST 18.35 FEET TO A POINT ON THE EASTERLY LINE OF SAID CARRILLO RANCH PROPERTY NORTH 6 DEGREES 40 MINUTES 31.3 SECONDS WEST 2750.10 FEET FROM THE INTERSECTION OF SAID EASTERLY LINE WITH THE CENTERLINE OF THE CAJON CANAL OF THE ANAHEIM UNION WATER COMPANY, AS SHOWN ON SAID MAP; THENCE NORTH 6 DEGREES 40 MINUTES 31.3 SECONDS WEST 1828.91 FEET ALONG SAID EASTERLY LINE; THENCE NORTH 87 DEGREES 54 MINUTES 37 SECONDS WEST 787.19 FEET TO A POINT ON SAID WESTERLY LINE NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 1412.03 FEET FROM THE POINT OF BEGINNING; THENCE SOUTH 2 DEGREES 02 MINUTES 20 SECONDS EAST 1412.03 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ANY PORTION LYING WESTERLY OF THE WESTERLY LINE OF LAND DESCRIBED IN THE DEED TO THE CARRILLO RANCH, INC. RECORDED ON MAY 21, 1937 IN BOOK 884 PAGE 495, OFFICIAL RECORDS.

EXCEPTING THEREFROM ALL OIL, MINERALS AND OIL RIGHTS IN, ON AND APPURTENANT TO SAID LAND AS RESERVED IN VARIOUS INSTRUMENTS OF RECORD, WITHOUT HOWEVER THE RIGHT TO THE SURFACE OF SAID LAND TO A DEPTH OF 500 FEET, AS QUITCLAIMED BY DEED RECORDED MAY 30, 1973 IN BOOK 10722 PAGE 593, OFFICIAL RECORDS.

SAID LAND IS SHOWN ON A PARCEL MAP FILED IN BOOK 140 PAGES 17 TO 20 INCLUSIVE OF PARCEL MAPS, RECORDS OF SAID COUNTY.

PARCEL 3:

THAT PORTION OF THE SECOND CLASS LANDS ALLOTTED TO WILLIAM MC KEE AND PRUDENCIO YORBA, TOGETHER WITH THAT PORTION OF THE LAND ALLOTTED TO M. J. W. DE SHORB IN THE DECREE OF PARTITION OF THE RANCHO CANON DE SANTA ANA RENDERED IN CASE NO. 1978 OF THE 17TH JUDICIAL DISTRICT COURT OF CALIFORNIA, A CERTIFIED COPY OF WHICH WAS RECORDED FEBRUARY 8, 1874 IN BOOK 28 PAGE 158 OF DEEDS OF LOS ANGELES COUNTY, CALIFORNIA, AND LOCATED IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, DESCRIBED AS A WHOLE AS FOLLOWS:

BEGINNING AT THE POINT ON THE WESTERLY LINE OF THE CARRILLO RANCH PROPERTY NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 5363.01 FEET FROM THE NORTHERLY LINE OF THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY'S 100.00 FOOT STRIP OF LAND AS SHOWN ON THE MAP FILED IN BOOK 37 PAGE 33 OF RECORD OF SURVEYS IN THE OFFICE OF THE COUNTY RECORDER OF SAID ORANGE COUNTY; THENCE SOUTH 87 DEGREES 54 MINUTES 37 SECONDS EAST 787.19 FEET TO A POINT ON THE EASTERLY LINE OF SAID CARRILLO RANCH PROPERTY NORTH 6 DEGREES 40 MINUTES 31.3 SECONDS WEST 4579.01 FEET FROM THE INTERSECTION OF SAID EASTERLY LINE WITH THE CENTERLINE OF THE CAJON CANAL OF THE ANAHEIM UNION WATER COMPANY, AS SHOWN ON SAID MAP; THENCE NORTH 6 DEGREES 41 MINUTES 31.3 SECONDS WEST, ALONG SAID EASTERLY LINE 2065.93 FEET; THENCE NORTH 87 DEGREES 54 MINUTES 37 SECONDS WEST 619.76 FEET TO A POINT ON SAID WESTERLY LINE NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 2047.12 FEET FROM THE POINT OF BEGINNING; THENCE SOUTH 2 DEGREES 02 MINUTES 20 SECONDS EAST, ALONG SAID WESTERLY LINE 2047.12 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ANY PORTION LYING WESTERLY OF THE WESTERLY LINE OF LAND DESCRIBED IN THE DEED TO THE CARRILLO RANCH, INC. RECORDED ON MAY 21, 1937 IN BOOK 884 PAGE 495, OFFICIAL RECORDS.

EXCEPTING THEREFROM ALL OIL, MINERALS AND OIL RIGHTS IN, ON AND APPURTENANT TO SAID LAND AS RESERVED IN VARIOUS INSTRUMENTS OF RECORD, WITHOUT HOWEVER THE RIGHT TO THE SURFACE OF SAID LAND TO A DEPTH OF 500 FEET, AS QUITCLAIMED BY

DEED RECORDED JULY 20, 1972 IN BOOK 10233 PAGE 834, OFFICIAL RECORDS AND BY DEED RECORDED OCTOBER 2, 1972 IN BOOK 10354 PAGE 309, OFFICIAL RECORDS.

PARCEL 4:

THAT PORTION OF THE SECOND CLASS LANDS ALLOTTED TO WILLIAM MC KEE AND PRUDENCIO YORBA, TOGETHER WITH THAT PORTION OF THE LAND ALLOTTED TO M. J. W. DE SHORB IN THE DECREE OF PARTITION OF THE RANCHO CANON DE SANTA ANA RENDERED IN THE CASE NO. 1978 OF THE 17TH JUDICIAL DISTRICT COURT OF CALIFORNIA, A CERTIFIED COPY OF WHICH WAS RECORDED FEBRUARY 8, 1874 IN BOOK 28 PAGE 158 OF DEEDS OF LOS ANGELES COUNTY, CALIFORNIA, AND LOCATED IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, LYING NORTHERLY OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT THE POINT ON THE EASTERLY LINE OF THE CARRILLO RANCH PROPERTY NORTH 6 DEGREES 40 MINUTES 31.3 SECONDS WEST 6644.94 FEET FROM THE INTERSECTION OF SAID EASTERLY LINE WITH THE CENTERLINE OF THE CAJON CANAL OF THE ANAHEIM UNION WATER COMPANY, AS SHOWN ON A MAP FILED IN BOOK 37 PAGE 33 OF RECORD OF SURVEYS IN THE OFFICE OF THE COUNTY RECORDER OF SAID ORANGE COUNTY; THENCE NORTH 87 DEGREES 34 MINUTES 37 SECONDS WEST 619.76 FEET TO A POINT ON THE WESTERLY LINE OF SAID CARRILLO RANCH PROPERTY NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 7410.13 FEET FROM THE NORTHERLY LINE OF THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY'S 100.00 FOOT STRIP OF LAND, AS SHOWN ON SAID MAP.

EXCEPTING THEREFROM ANY PORTION LYING WESTERLY OF THE WESTERLY LINE OF LAND DESCRIBED IN THE DEED TO THE CARRILLO RANCH, INC. RECORDED ON MAY 21, 1937 IN BOOK 884 PAGE 495, OFFICIAL RECORDS.

ALSO EXCEPT ANY PORTION THEREOF NOT INCLUDED WITHIN THE LAND SHOWN AS CARRILLO RANCH PROPERTY ON SAID MAP FILED IN BOOK 37 PAGE 33 OF RECORD OF SURVEYS.

ALSO EXCEPTING THEREFROM ALL OIL, MINERALS AND OIL RIGHTS IN, ON AND APPURTENANT TO SAID LAND AS RESERVED IN VARIOUS INSTRUMENTS OF RECORD, WITHOUT HOWEVER THE RIGHT TO THE SURFACE OF SAID LAND TO A DEPTH OF 500 FEET, AS QUITCLAIMED BY DEED RECORDED JULY 20, 1972 IN BOOK 10233 PAGE 834, OFFICIAL RECORDS AND BY DEED RECORDED OCTOBER 2, 1972 IN BOOK 10354 PAGE 309, OFFICIAL RECORDS..

PARCEL 5:

ALL OIL AND OIL RIGHTS IN, ON AND APPURTENANT TO THE FOLLOWING DESCRIBED LAND, WITHOUT HOWEVER THE RIGHT TO THE SURFACE THEREOF TO A DEPTH OF 500 FEET; THAT PORTION OF THE SECOND CLASS LANDS ALLOTTED TO WILLIAM MC KEE AND PRUDENCIO YORBA, TOGETHER WITH THAT PORTION OF THE LAND ALLOTTED TO M. J. W. DE SHORB IN THE DECREE OF PARTITION OF THE RANCHO CANON DE SANTA ANA RENDERED IN CASE NO. 1978 OF THE 17TH JUDICIAL DISTRICT COURT OF CALIFORNIA, A CERTIFIED COPY OF WHICH WAS RECORDED FEBRUARY 8, 1874 IN BOOK 28 PAGE 158 OF DEEDS OF LOS ANGELES COUNTY, CALIFORNIA, AND LOCATED IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, AS DESCRIBED AS A WHOLE AS FOLLOWS:

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MINUTES 13 SECONDS EAST 59.48 FEET; THENCE SOUTH 44 DEGREES 07 MINUTES 50 SECONDS EAST 99.54 FEET; THENCE SOUTH 49 DEGREES 59 MINUTES 14 SECONDS EAST 104.47 FEET; THENCE SOUTH 56 DEGREES 35 MINUTES 03 SECONDS EAST 102.11 FEET; THENCE SOUTH 74 DEGREES 14 MINUTES 36 SECONDS EAST 45.59 FEET; THENCE NORTH 88 DEGREES 51 MINUTES 06 SECONDS EAST 56.38 FEET; THENCE NORTH 87 DEGREES 25 MINUTES 58 SECONDS EAST 48.52 FEET; THENCE NORTH 76 DEGREES 34 MINUTES 53 SECONDS EAST 59.86 FEET; THENCE NORTH 75 DEGREES 39 MINUTES 36 SECONDS EAST 128.13 FEET; THENCE NORTH 76 DEGREES 13 MINUTES 48 SECONDS EAST 137.57 FEET; THENCE SOUTH 34 DEGREES 06 MINUTES 59 SECONDS EAST 42.04 FEET; THENCE SOUTH 31 DEGREES 21 MINUTES 37 SECONDS EAST 123.92 FEET; THENCE SOUTH 73 DEGREES 27 MINUTES 51 SECONDS EAST 18.35 FEET TO A POINT ON THE EASTERLY LINE OF SAID CARRILLO RANCH PROPERTY NORTH 6 DEGREES 40 MINUTES 31.3 SECONDS WEST 2750.10 FEET FROM THE INTERSECTION OF SAID EASTERLY LINE WITH THE CENTERLINE OF THE CAJON CANAL OF THE ANAHEIM UNION WATER COMPANY, AS SHOWN ON SAID MAP; THENCE NORTH 6 DEGREES 40 MINUTES 31.3 SECONDS WEST 1828.91 FEET ALONG SAID EASTERLY LINE; THENCE NORTH 87 DEGREES 54 MINUTES 37 SECONDS WEST 787.19 FEET TO A POINT ON SAID WESTERLY LINE NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 1412.03 FEET FROM THE POINT OF BEGINNING; THENCE SOUTH 2 DEGREES 02 MINUTES 20 SECONDS EAST 1412.03 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ANY PORTION LYING WESTERLY OF THE WESTERLY LINE OF LAND DESCRIBED IN THE DEED TO THE CARRILLO RANCH, INC. RECORDED ON MAY 21, 1937 IN BOOK 884 PAGE 495, OFFICIAL RECORDS.

SAID LAND IS SHOWN ON A PARCEL MAP FILED IN BOOK 140 PAGES 17-20 INCLUSIVE OF PARCEL MAPS, RECORDS OF SAID COUNTY.

PARCEL 6:

ALL OIL AND OIL RIGHTS IN, ON AND APPURTENANT TO THE FOLLOWING DESCRIBED LAND, WITHOUT HOWEVER THE RIGHT TO THE SURFACE THEREOF TO A DEPTH OF 500 FEET; THAT PORTION OF THE SECOND CLASS LANDS ALLOTTED TO WILLIAM MC KEE AND PRUDENCIO YORBA, TOGETHER WITH THAT PORTION OF THE LAND ALLOTTED TO M. J. W. DE SHORB IN THE DECREE OF PARTITION OF THE RANCHO CANON DE SANTA ANA RENDERED IN CASE NO. 1978 OF THE 17TH JUDICIAL DISTRICT COURT OF CALIFORNIA, A CERTIFIED COPY OF WHICH WAS RECORDED FEBRUARY 8, 1874 IN BOOK 28 PAGE 158 OF DEEDS OF LOS ANGELES COUNTY, CALIFORNIA, AND LOCATED IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, AS DESCRIBED AS A WHOLE AS FOLLOWS:

BEGINNING AT THE POINT ON THE WESTERLY LINE OF THE CARRILLO RANCH PROPERTY NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 5363.01 FEET FROM THE NORTHERLY LINE OF THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY'S 100.00 FOOT STRIP OF LAND AS SHOWN ON THE MAP FILED IN BOOK 37 PAGE 33 OF RECORD OF SURVEYS IN THE OFFICE OF THE COUNTY RECORDER OF SAID ORANGE COUNTY; THENCE SOUTH 87 DEGREES 54 MINUTES 37 SECONDS EAST 787.19 FEET TO A POINT ON THE EASTERLY LINE OF SAID CARRILLO RANCH PROPERTY NORTH 6 DEGREES 40 MINUTES 31.3 SECONDS WEST 4579.01 FEET FROM THE INTERSECTION OF SAID EASTERLY LINE WITH THE CENTERLINE OF THE CAJON CANAL OF THE ANAHEIM UNION WATER COMPANY, AS SHOWN ON SAID MAP; THENCE NORTH 6 DEGREES 41 MINUTES 31.3 SECONDS WEST, ALONG SAID EASTERLY LINE 2065.93 FEET; THENCE NORTH 87 DEGREES 54 MINUTES 37 SECONDS WEST 619.76 FEET TO A POINT ON SAID WESTERLY LINE NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 2047.12 FEET FROM THE POINT OF BEGINNING; THENCE SOUTH 2 DEGREES 02 MINUTES 20 SECONDS EAST, ALONG SAID WESTERLY LINE 2047.12 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM ANY PORTION LYING WESTERLY OF THE WESTERLY LINE OF LAND DESCRIBED IN THE DEED TO THE CARRILLO RANCH, INC. RECORDED ON MAY 21, 1937 IN

BOOK 884 PAGE 495, OFFICIAL RECORDS.

PARCEL 7:

ALL OIL AND OIL RIGHTS IN, ON AND APPURTENANT TO THE FOLLOWING DESCRIBED LAND, WITHOUT HOWEVER THE RIGHT TO THE SURFACE THEREOF TO A DEPTH OF 500 FEET; THAT PORTION OF THE SECOND CLASS LANDS ALLOTTED TO WILLIAM MC KEE AND PRUDENCIO YORBA, TOGETHER WITH THAT PORTION OF THE LAND ALLOTTED TO M. J. W. DE SHORB IN THE DECREE OF PARTITION OF THE RANCHO CANON DE SANTA ANA RENDERED IN CASE NO. 1978 OF THE 17TH JUDICIAL DISTRICT COURT OF CALIFORNIA, A CERTIFIED COPY OF WHICH WAS RECORDED FEBRUARY 8, 1874 IN BOOK 28 PAGE 158 OF DEEDS OF LOS ANGELES COUNTY, CALIFORNIA, AND LOCATED IN THE COUNTY OF ORANGE, STATE OF CALIFORNIA, LYING NORTHERLY OF THE FOLLOWING DESCRIBED LINE:

BEGINNING AT THE POINT ON THE EASTERLY LINE OF THE CARRILLO RANCH PROPERTY NORTH 6 DEGREES 40 MINUTES 31.3 SECONDS WEST 6644.94 FEET FROM THE INTERSECTION OF SAID EASTERLY LINE WITH THE CENTERLINE OF THE CAJON CANAL OF THE ANAHEIM UNION WATER COMPANY, AS SHOWN ON A MAP FILED IN BOOK 37 PAGE 33 OF RECORD OF SURVEYS IN THE OFFICE OF THE COUNTY RECORDER OF SAID ORANGE COUNTY; THENCE NORTH 87 DEGREES 54 MINUTES 37 SECONDS WEST 619.76 FEET TO A POINT ON THE WESTERLY LINE OF SAID CARRILLO RANCH PROPERTY NORTH 2 DEGREES 02 MINUTES 20 SECONDS WEST 7410.13 FEET FROM THE NORTHERLY LINE OF THE ATCHISON, TOPEKA AND SANTA FE RAILWAY COMPANY'S 100.00 FOOT STRIP OF LAND, AS SHOWN ON SAID MAP.

EXCEPTING THEREFROM ANY PORTION LYING WESTERLY OF THE WESTERLY LINE OF LAND DESCRIBED IN THE DEED TO THE CARRILLO RANCH, INC. RECORDED ON MAY 21, 1937 IN BOOK 884 PAGE 495, OFFICIAL RECORDS.

ALSO EXCEPT ANY PORTION THEREOF NOT INCLUDED WITHIN THE LAND SHOWN AS CARRILLO RANCH PROPERTY ON SAID MAP FILED IN BOOK 37 PAGE 33 OF RECORD OF SURVEYS.

E. THE TITLE TO THE LAND DESCRIBED IN PARAGRAPH D. HEREIN IS SUBJECT TO THE FOLLOWING DEFECTS, LIENS AND ENCUMBRANCES EXISTING AT THE DATE OF THE RECORDATION OF SAID LEASE AND STILL EXISTING AT THE DATE OF THIS REPORT:

EXCEPTIONS:

1. GENERAL AND SPECIAL COUNTY TAXES
FOR THE FISCAL YEAR 1984-1985, A LIEN NOT YET PAYABLE.

2. GENERAL AND SPECIAL COUNTY TAXES
FOR THE FISCAL YEAR 1983-1984
TOTAL AMOUNT : $742.90.
FIRST INSTALLMENT : $371.45, PLUS PENALTY OF $37.14.
SECOND INSTALLMENT : $371.45, PLUS PENALTY AND COSTS OF $47.14.

FORM 105

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

RECEIVED
MAR 1 1966
INGLEWOOD, CALIFORNIA

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

Petrominerals Corp.

Beverly Hills, Calif. 17 February 1966

059-05528

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. Amos Travis #1, Sec. 19, T. 3 S, R. 8 W, S B. & M., Esperanza Field, Orange County.

Legal description of mineral-right lease, consisting of 67.70 acres, is as follows: see attached description. (Attach map or plat to scale)

Do mineral and surface leases coincide? Yes X No ____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: 2150 feet East (Direction) along section line and 2360 feet South (Direction)

at right angles to said line from the Northwest corner of section 19

T 3 S - R. 8 W S B M

Elevation of ground above sea level 773 feet Sea Level datum.

All depth measurements taken from top of K. B. (Derrick Floor, Rotary Table or Kelly Bushing) which is 10.5 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
8 5/8	20#	R 2	Surface	200'	200' to surface
5 1/2	14#	J55 R2	Surface	2500'	2500' 100 sacks
4½ liner	14#	H40	2500'	2800'	hang liner

Intended zone(s) of completion: Kreamer 2000-2900 (Depth, top and bottom) Estimated total depth 2906

MAP	MAP BOOK	CARDS	(Name) BOND	FORMS 114	FORMS 121
W14	ok	MJ	255 4488086 2-18-66	MJ	MJ

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address 9460 Wilshire/Suite 729
Beverly Hills, California

Telephone Number CR 8-1181

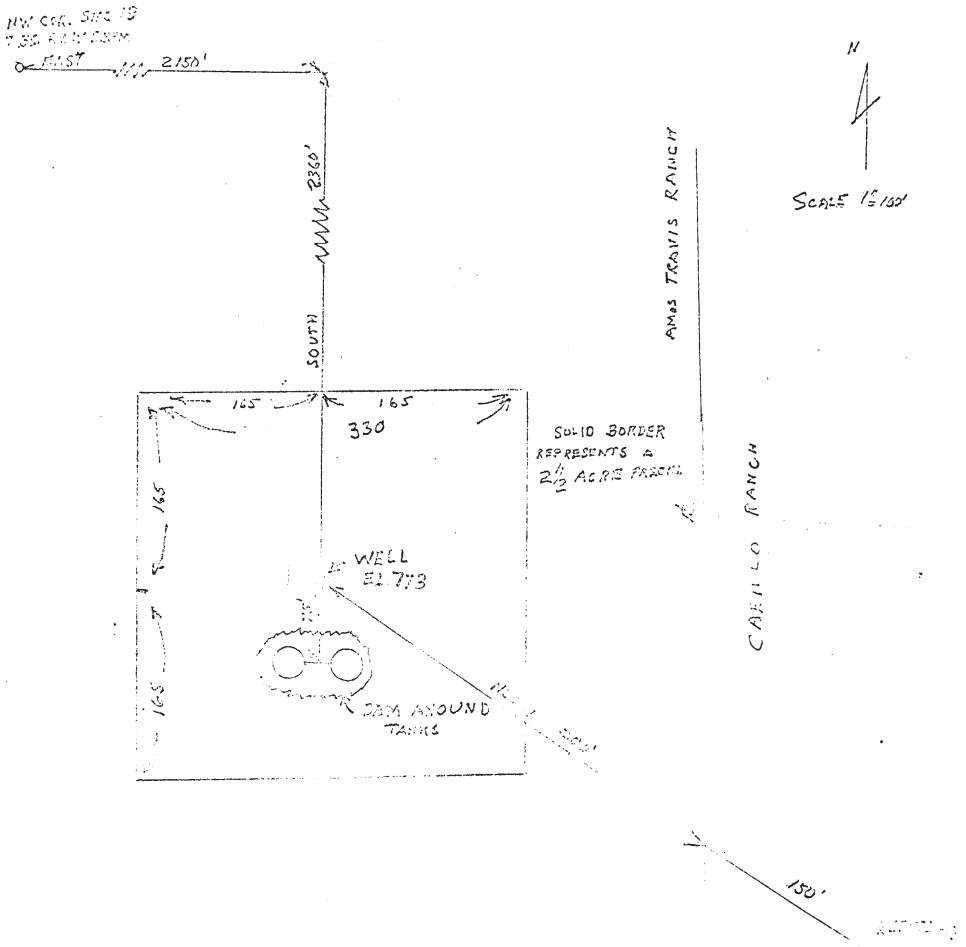
R. R. Greenbaum, d/b/a CALIFORNIA-TIME PETROLEUM CO. (Name of Operator)

By Grant W. Corby (Grant W. Corby)

Type of Organization Individual (Corporation, Partnership, Individual, etc.)

27537-705 7-64 20M ^ OSP

CALIFORNIA TIME PETROLEUM CO
LOCATION OF AMOS TRAVIS #1 WELL



FORM 111

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

REPORT ON PROPOSED OPERATIONS No. P 166-299

Mr. Grant W. Corby
9460 Wilshire Blvd.
Beverly Hills, California

Inglewood, Calif.
March 8, 1966

Agent for CALIFORNIA-TIME PETROLEUM CO.

DEAR SIR:

Your proposal to drill Well No. "Amos Travis" 1,
Section 19, T. 3 S, R. 8 W S.B. B. & M., Esperanza Field, Orange County,
dated Feb. 17, 1966, received Mar. 1, 1966, has been examined in conjunction with records filed in this office.
Present conditions as shown by the records and the proposal are as follows:

THE NOTICE STATES
"Legal description of mineral-right lease, consisting of 67.70 acres, is as follows:
see attached description.
Do mineral and surface leases coincide? YesX No_____
Location of Well: 2150 feet East along section line and 2360 feet South at right angles
to said line from the Northwest corner of section 19 T 3 S - R. 8 W S B M
Elevation of ground above sea level 773 feet Sea Level datum.
All depth measurements taken from top of K. B. which is 10.5 feet above ground."

PROPOSAL
"PROPOSED CASING PROGRAM

Size of Casing	Weight	Grade and Type	Top	Bottom	Cementing Depths
8 5/8	20#	R 2	Surface	200'	200' to surface
5 1/2	14#	J55 R2	Surface	2500'	2500' 100 sacks
4½ liner	14#	H40	2500'	2800'	hang liner

Intended zone of completion: Kreamer 2000-2900 Estimated total depth 2906
It is understood that if changes in this plan become necessary we are to notify you immediately."

DECISION
THE PROPOSAL IS APPROVED PROVIDED:
1. Fluid consistent with good drilling practice shall be used, and the column of fluid maintained at all times to the surface, particularly while pulling the drill pipe.
2. Adequate blowout prevention equipment shall be installed and maintained in operating condition at all times.
3. THIS DIVISION SHALL BE NOTIFIED TO WITNESS a test of the effectiveness of the 5-1/2" shut-off.

VFG:nw

cc Company

Bond No. 33S64880BC
Dated 2-18-66

E. R. MURRAY-AARON, State Oil and Gas Supervisor

By Wm. C. Bailey Deputy

18755-705 3-64 50M OT OSP

FORM 109-A

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Report on Test of Water Shut-off
(FORMATION TESTER)

No. T 166-250

Mr. Grant W. Corby
9460 Wilshire Blvd.
Beverly Hills, California

Inglewood, Calif.
March 18, 1966

Agent for CALIFORNIA-TIME PETROLEUM CO.

DEAR SIR:

Your well No. "Amos Travis" 1, Sec. 19, T. 3 S, R. 8 W, S.B. B & M.
Esperanza Field, in Orange County, was tested for water shut-off
on March 14, ~~1965~~ 1966, Mr. D. Lande, Engineer, designated by the supervisor was present
from 10:00 p.m. to 11:00 p.m. as prescribed by law; there were also present D. Branyon, Drilling
Foreman & E. Clegg, Tester Opr.

Shut-off data: 5½ in. 15.5 lb. casing was xx cemented xxxxxxxxxx at 2415 ft.
on March 13, 1966 in 7-7/8 in. hole with 100 ~~xxxfx~~ sacks of cement
calculated to fill behind casing to 1715 ft. below surface.

Casing record of well: 8-5/8" cem. 203'; 5½" cem. 2415', perf. 2340' WSO

Present depth 2420 ft. cmt. bridge 2420 ft. to 2391 ft. Cleaned out cmt. xxxx ft. to xxxx ft. for test.
A Halliburton gun & tester was run into the hole on 2-7/8 in. drill~~pipe~~-tubing,
with xxx ft. of water-mud cushion, and packer ~~xx~~set at 2292 ft. with tailpiece to 2314 ft.
Tester valve, with 1/2 in. bean, was open for 1 hr. and xxx min. During this interval there was a
faint blow for thirty minutes, with no blow thereafter.

Mr. Branyon reported:
1. A 12-1/4" hole was drilled from the surface to 209'.
2. On March 9, 1966, 8-5/8", 20 lb. casing was cemented at 203' with 60 sacks of cement, filling behind casing to the surface.
3. A 7-7/8" hole was drilled from 209' to 2420'.
4. The 5-1/2" casing was cemented as noted above.
5. The 5-1/2" casing was jet-perforated with four, 1/2"holes at 2340'.

THE ENGINEER NOTED:
1. When the drill tubing was removed, 20' of drilling fluid was found above the tester.
2. The pressure bomb chart indicated that the tester tool functioned properly.

THE 5-1/2" SHUT-OFF AT 2340' IS APPROVED.

DL:nw

cc Company

E. R. MURRAY-AARON
State Oil and Gas Supervisor

By Wm C Bailey Deputy

28936-705 7-64 20M OSP

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSER 'ATION
DIVISION OF OIL AND GAS

REPORT OF PROPERTY AND WELL TRANSFER

Field or County: Esperanza — District: 1

Former Owner: Century Oil Management, Inc. — Date: 3-19-76

Description of Property: Sec. 19-3S-8W SB B&M

List of Wells		API NO. 059
	"Amos Travis" 1 thru 4	05528, 05529, 20318, 20334
	"Reeves" 1, 2, 3	05531, 05532, 20333

Date of Transfer: March 1, 1976
New Owner: PETROMINERALS CORP.
Address: 1880 Century Park East, Suite 716 4340 Ronald Langdon Rd. LA 90808
Los Angeles, CA 90067
Telephone No. (213) 552-2601 (213) 421-8257
Type of Organization: Corporation
Reported by: R.C. Russell, Jr., Century Oil Mgt., Inc., letter of 3-15-76
Confirmed by: M.D. Hughes, Petrominerals Corp., letter of 3-10-76
New Operator New Status: PA — Old Operator New Status: PA
Request Designation of Agent: Yes

Remarks:

ag
cc: H.Q.
Prod. Dept.
Conservation Committee

Deputy Supervisor

		INITIALS	DATE
Form 121	✓	ag	3-19-76
New Well Cards	✓	✓	✓
Well Records	✓	✓	
Electric Logs	✓	✓	✓
Production Reports	✓	cc	
Map and Book W1-4	✓	HHO	3/24/76
Form 148			
Notice to be cancelled			
Bond status			

LEGEND
PA—Producing Active
NPA—Non Potential Active
PI—Potential Inactive
NPI—Non Potential Inactive
Ab—Abandoned or No More Wells

FORM 156

WORK PERFORMED:
Drill ✓ Redrill ____ Deepen ____
Plug ____ Alter casing ____
Water flood ____ Water disposal ____
Abandon ____
Other ____

STATUS: (Late) ✓
Producing 4-6-66
Recomp. prod. ____
Water flood ____
Water disposal ____
Abandoned ____
Other ____
MAP AND BOOK W1-4 RJ 5-9-66

RECORDS FILED & DATE: Clerk Lee
Summary (dup.) 5/6/66
Log & Core (dup.) 4/5/66
History (dup.) 4/5/66
E-log ____
Radio log ____
D. Survey ____
Other ____
(Check records for signature and correct name of operator or well, S.T.R. and field.)
Location ok Notice states ____
Elevation ____ Notice states ✓
notice shows K.B. 10.5'
above gr
Production Reports None. np
(If production reports not received, make notation and inform Sr. Steno. when rec'd.)
If stimulation or disposal well: Form 121 ____ Folder ____

RECORDS & REQUIREMENTS CHECKED: Eng WE
✓
✓
✓
Surface inspection None
Data needed ~~Well Summary~~ Clerk:
Request records ~~NO~~ F 170 ____
Correct records F 165 ____
(Specify) 165A ____
CARDS ____
BOND: 33 $ 6488 0 B C date 7/18/66
Hold ~~✓~~ Reason ~~Production Reports~~
Release ✓ Date elig. 5-11-66 F 150b
End premium year ✓
Release requested ____ (Check one)
Bond superseded ____
Well abandoned ____
FINAL LETTER ____ F 159 ____
and
FILE CLEARED ____ F 121 ____

FORM 100

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

SUBMIT IN DUPLICATE

Operator CALIFORNIA-TIME PETROLEUM COMPANY Well No. #1 "Amos Travis"

Sec. 19, T. 3 S, R. 8 W, S B. & M. Esperanza Field Orange County.

Location 2150 East, 2360 South at R. angles to said line from the Northwest
(Give location from property or section corner, or street center lines)
corner of Section 19 Elevation of ground above sea level 773 feet.

All depth measurements taken from top of K B (Derrick Floor, Rotary Table or Kelly Bushing) which is 10 feet above ground.

In compliance with Sec. 3215, of the Public Resources Code, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Date 5 May 1966 Signed Grant W. Corby (Grant W. Corby)

Engineer (Engineer or Geologist) (Superintendent) Title (President, Secretary or Agent)

Commenced drilling March 8
Completed drilling March 21
Total depth 2660 Plugged depth
Junk

GEOLOGICAL MARKERS	DEPTH
Kreamer	2405

Geologic age at total depth: Miocene

Commenced producing (Date) Flowing/gas lift/pumping (Cross out unnecessary words) Name of producing zone Kreamer

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	54	28	2%	-	-	-
Production after 15 days	Apr 6-21:735	28	2%	-	-	-

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementin if through perforati
8 5/8	200'	surface	20#	new	seamless	J55R2	10½	50	surface
5 ½	2425	surface	14#	new	seamless	J55R2	7 5/8	200	
4 ½	liner	2400	14#	new	seamless	H 40	reamed 9"		

PERFORATED CASING
(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

Acidized with 8000 gal 15% dil HCL
Ran 260' 4½" liner, 100 mesh 2400-2660

DIVISION OF OIL AND GAS RECEIVED MAY 6 1966 INGLEWOOD, CALIFORNIA

Was the well directionally drilled? no Electrical Log Depths no electric log (Attach Copy of Log)

HM 103

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

OPERATOR CALIFORNIA-TIME PETROLEUM CO. FIELD ESPERANZA

Well No. AMOS TRAVIS #1, Sec. 19, T. 3 S, R. 8 W, S. B. & M.

Date 30 March, 1966 Signed Grant W. Corby (Grant W. Corby)

9460 Wilshire Blvd/ CR8-1181 Title Engineer
Beverly Hills, California (Telephone Number) (President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

Date	
3/7	Rigging up.
3/8	Spud 10:00 AM. Drilled 201'. Set & cemented 8 5/8", 20# casing. 60 sacks, 2% CaCl. Cemented to surface.
3/9	Drilled out cement 10:00 AM.
3/10	Drilled to 1200'. 1½° deviation.
3/11	Drilled to 1430. Lost cones recovered.
3/12	Drilled to 2040'.
3/13	Drilled to 2425'. Set 512' 15½# casing, 200 sacks, 2425 top oil sand 2405'.
3/14	Drilled out cement. Changed to oil drilling fluid. WSO test 4 holes 2340'. 20' fluid rise. Approved by D.O.G.
3/15	Drilling ahead at 7:00 AM.
3/16	2545 drilling. Round trip for bit. Drilled to 2660'.
3/17	Reaming to 2660'.
3/18	Running 4½" liner.
3/19	Acidized hole with 8,000 gals, 15% hcl dilute.
3/20	Standing with acid.
3/21	Released rig.

DIVISION OF OIL AND GAS RECEIVED APR 5 1966 INGLEWOOD, CALIFORNIA

FORM 101
CALIFORNIA STATE PRINTING OFFICE

SUBMIT IN DUPLICATE

STATE OF CALIFORNIA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF OIL AND GAS

LOG AND CORE RECORD OF OIL OR GAS WELL

Operator CALIFORNIA-TIME PETROLEUM CO. Field ESPERANZA

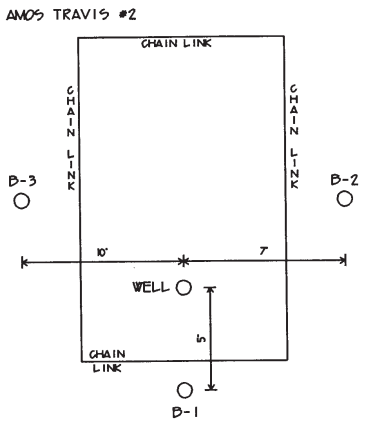
Well No. "AMOS TRAVIS" #1 Sec. 19, T. 3 S, R. 8 W, S.B. & M.

FORMATIONS PENETRATED BY WELL

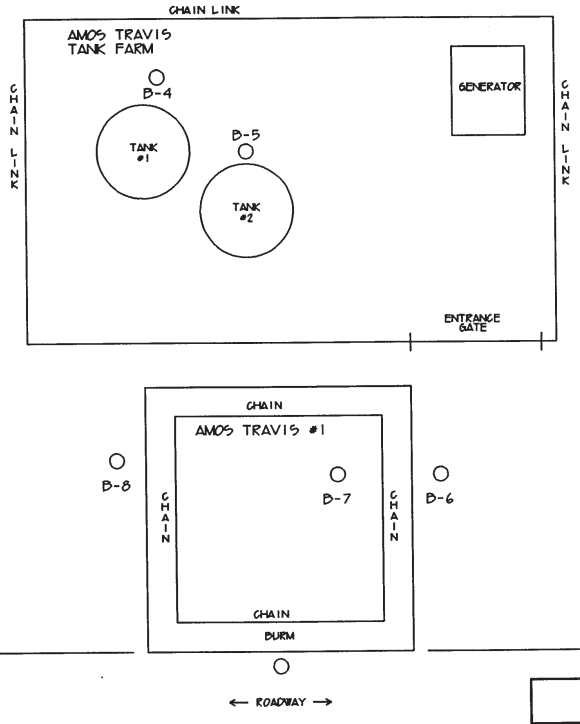
DEPTH TO Top of Formation	DEPTH TO Bottom of Formation	Thickness	Drilled or Cored	Recovery	DESCRIPTION
-0-	200	200	drilled	sample	Yellow clay
200	200	200	"	"	Sandy clay with Bentonite
400	200	200	"	"	" " " "
600	200	200	"	"	Sand & shale with stks. of Bentonite.
800	200	200	"	"	Sandy shale gray
1000	200	200	"	"	Sandy shale gray. NOTE: Ditch sample taken each 200' for first 1000'.
1200	1250	50	"	"	Alternate beds of gray shale and stks of medium grey sand.
1250	1300	50	"	"	Medium grey sand.
1350	1400	50	"	"	Gray sandy shale
1400	1500	100	"	"	Hard Shells
1550	1600	50	"	"	Hard Shells
1650	1700	50	"	"	Hard sandy shale
1750	1800	50	"	"	Hard sandy shale
1850	1900	50	"	"	Hard Sandy shale
1950	2000	50	"	"	Hard med.sand
2050	2100	50	"	"	" " "
2150	2200	50	"	"	Very hard sand & shells
2250	2300	50	"	"	Very hard sand
2350	2400	50	"	"	Very hard sand and shells
2400	2450	50	"	"	Soft friable coarse oil sand. Top Kreamer
2500	2600	100	"	"	" " " " " "
2600	2660	60	"	"	" " " " " "

APPENDIX G

SITE PLANS
BORING LOCATIONS



PLOT PLAN
FACILITY: AMOS TRAVIS #2
PROJECT NO: 97294
DATE: 12/22/97 SCALE: NONE



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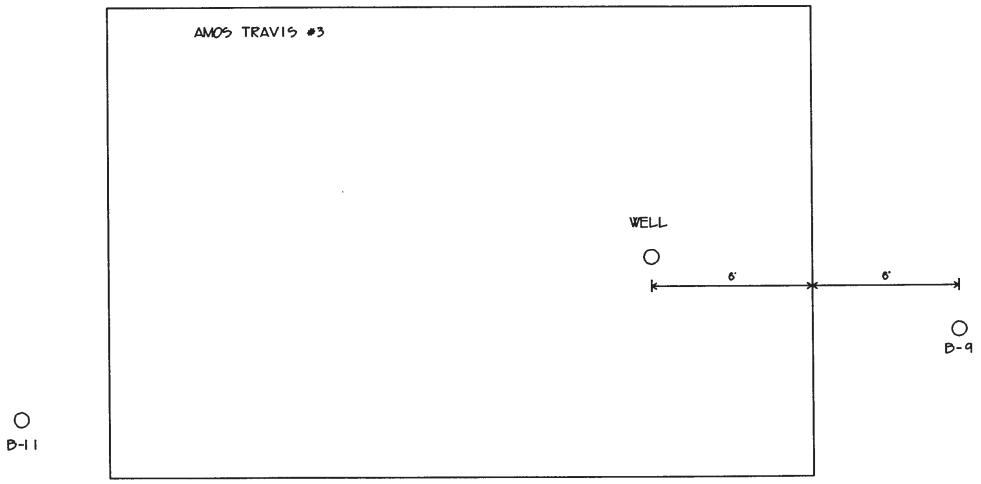
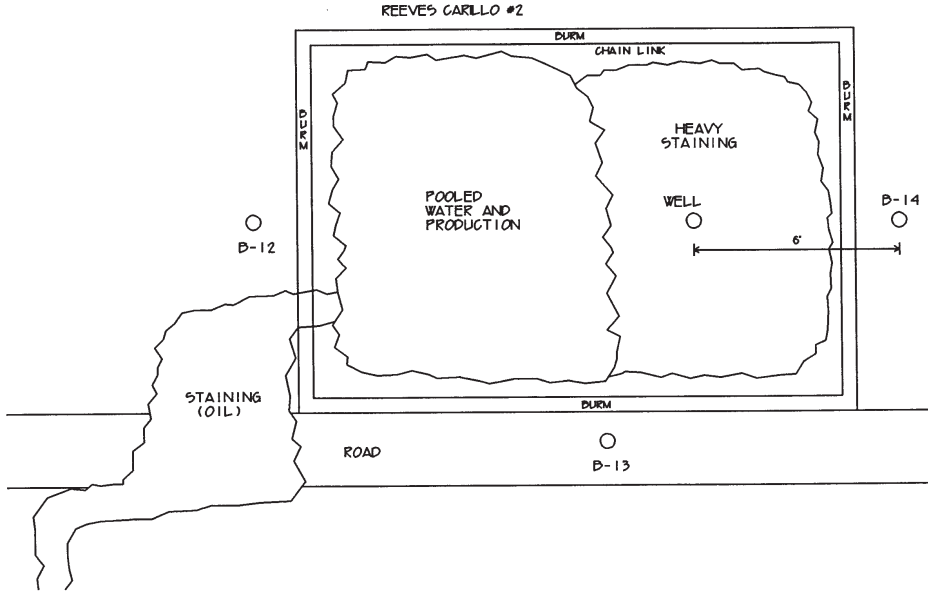
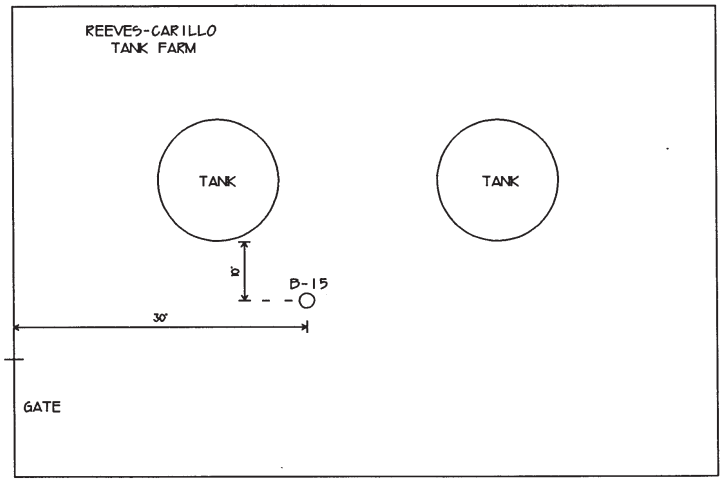
PROJECT NO: 97294
DATE: 12/22/97 SCALE: NONE



PLOT PLAN
FACILITY: AMOS TRAVIS #3
PROJECT NO: 97294
DATE: 12/22/97 SCALE: NONE

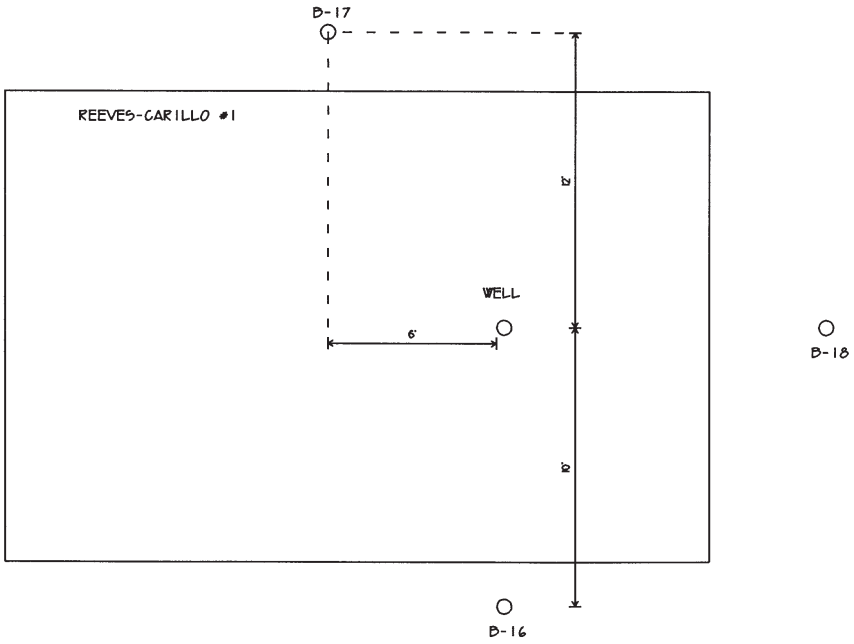


PLOT PLAN
FACILITY: REEVES-CARILLO #2
PROJECT NO: 97294
DATE: 12/23/97 SCALE: NONE

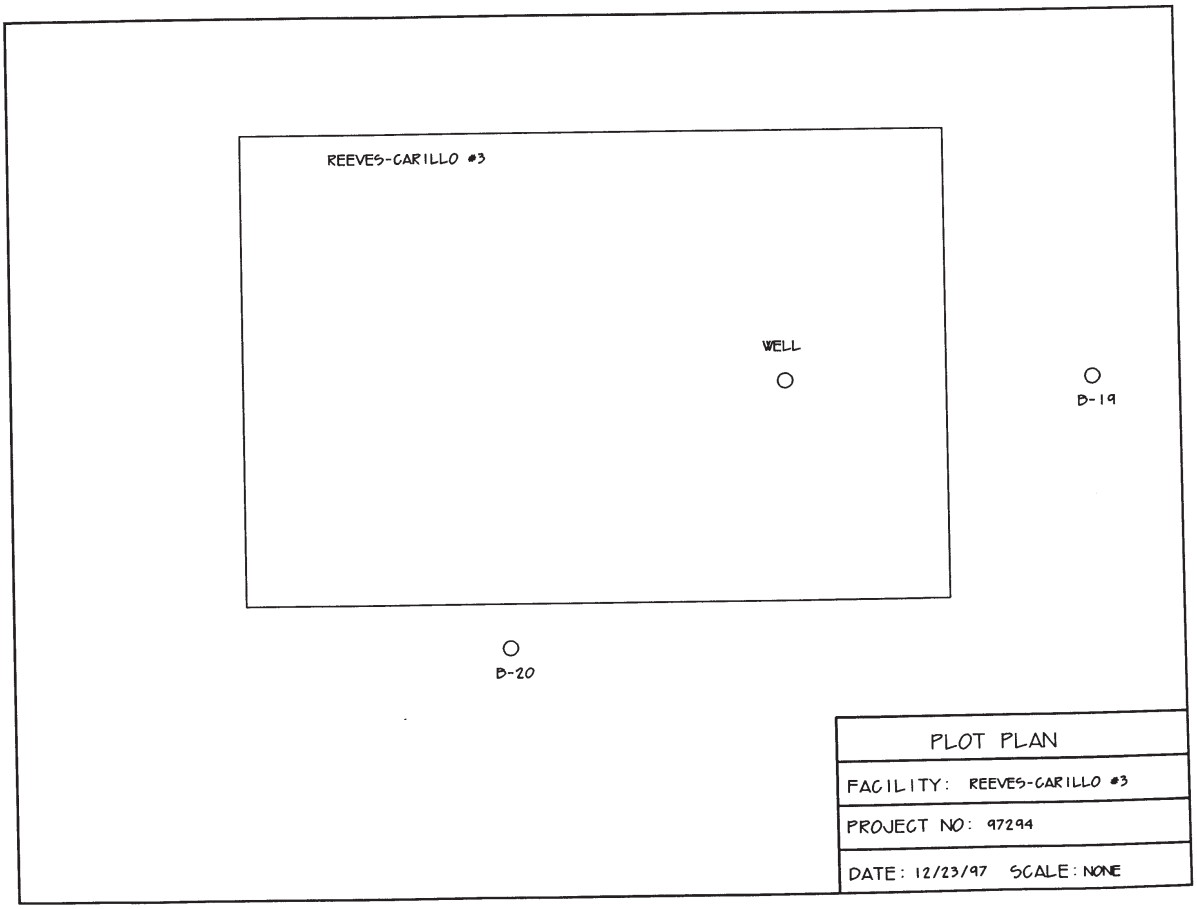


N

PLOT PLAN
FACILITY: REEVES-CARILLO TANK FARM
PROJECT NO: 97294
DATE: 12/23/97 SCALE: NONE



PLOT PLAN
FACILITY: REEVES-CARILLO #1
PROJECT NO: 97294
DATE: 12/23/97 SCALE: NONE



PLOT PLAN

FACILITY: REEVES-CARILLO #3

PROJECT NO: 97294

DATE: 12/23/97 SCALE: NONE

PHASE I ENVIRONMENTAL SITE ASSESSMENT AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT (ESA)

FOR

YORBA LINDA TRAVIS PROJECT
APNS 351-031-04, -05, AND -17
YORBA LINDA, CALIFORNIA

DATED: JUNE 2006

SUBJECT SITE - OP01

PHASE ONE INC.

THE NATIONWIDE ENVIRONMENTAL SPECIALISTS
"Setting the Due Diligence Industry Standard"

PHASE ONE INC.

NATIONWIDE ENVIRONMENTAL SPECIALISTS

June 16, 2006

Karin Thompson
Sage MSREF Land Fund I, LLC
3 Corporate Plaza, Suite 102
Newport Beach, CA 92660

RE: ***PHASE ONE*** **INC.** Project Nos. 6482 and 6483
Phase I Environmental Site Assessment Report and
Limited Phase II Environmental Site Assessment (ESA) Report
Subject Site Location: APNs 351-031-04, -05, and -17, Yorba Linda, California

Dear Ms. Thompson:

Enclosed with this letter are copies of the Phase I Environmental Site Assessment Report and the Limited Phase II Environmental Site Assessment (ESA) completed by ***PHASE ONE*** **INC.** for the site referenced above. As you will note in the report, our conclusions regarding the environmental condition of the site are summarized both in Section 1.0, ***Executive Summary***, and Section 7.0, ***Conclusions and Recommendations***.

Please don't hesitate to contact us should you have any questions regarding the environmental assessments, or if we can be of additional assistance. We look forward to working with you again in the future.

Sincerely,

Nadine Kieselbach
Client Services

Enclosure

2680 Walnut Avenue, Suite B, Tustin, CA 92780

Tel: (800) 524-8877 • Fax: (714) 669-8025
http://www.phasei.com

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

AND

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT (ESA) REPORT

YORBA LINDA TRAVIS PROJECT

APNS 351-031-04, -05, AND -17
YORBA LINDA, CALIFORNIA

PROJECT NO. 6482 AND 6483

BY

***PHASE ONE* INC.**

TABLE OF CONTENTS

SECTION 1.0

EXECUTIVE SUMMARY: FINDINGS AND CONCLUSIONS

1.1 FINDINGS

This report presents the results of the Phase I Environmental Site Assessment and the Limited Phase II Environmental Site Assessment (ESA) conducted by ***PHASE ONE* INC.** at APNs 351-031-04, -05, and -17, Yorba Linda, California (see Figure 1, ***Site Location Map***). The Phase I Assessment and Limited Phase II Environmental Site Assessment (ESA) were undertaken at the request of Sage MSREF Land Fund I, LLC, in accordance with ***PHASE ONE* INC.**'s ***Standard Terms and Conditions***, as outlined in ***PHASE ONE* INC.**'s ***Letter of Intent/Authorization*** for Project **N^{os}** 6482 and 6483 (Please see Appendix E for the Limited Phase II Environmental Site Assessment (ESA) Report.) The findings and conclusions of this investigation are based upon a review of historic site-use activities, contact with and records from governmental regulatory agencies, regulatory database searches, as well as a site reconnaissance and interviews with the client, site personnel, and possibly others who may have knowledge of various aspects of the subject site.

At the time of this assessment, the site consisted of vacant land on the northern two-thirds of the subject site and an oil exploration field on the southern third of the subject site, consisting of approximately 116.25 acres of land in total. Information gathered in the course of this assessment indicates that the subject site has been currently owned by Jeffrey Simmons, approximately 20 years; APN 351-031-04; Virginia Richards Trust, approximately 25 years, APN 351-031-05; and Amos A. Travis, Travis Ranch Trust, approximately 11 years, APN 351-031-17.

The principal findings of ***PHASE ONE* INC.**'s Phase I Environmental Site Assessment for this site are as follows:

The subject site is currently affected by

- No major environmental concerns;
- No medium environmental concerns;
- Three minor environmental concerns; and
- One potential, possible, or historical environmental condition.
- The potential for soil or groundwater contamination of the subject property from either on or off-site sources appears to be moderate.
- Given the findings and conclusions of ***PHASE ONE* INC.**'s Phase I Environmental Site Assessment, further investigation is recommended at this time.

- ***PHASE ONE* INC.** has performed this Phase I Environmental Site Assessment of the subject site in conformance with the scope and limitations of ASTM Practice E 1527-00 of the above-listed property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report.

- This assessment has revealed no evidence of recognized environmental conditions in connection with the property except for those listed in Section 1.2.

1.2 CONCLUSIONS SUMMARY

Based on the findings of this Phase I Environmental Site Assessment, ***PHASE ONE* INC.** has identified no major, no medium, and three minor environmental concerns currently associated with the subject site. Descriptions of any environmental concerns that may be associated with the subject site are given in the following table; these descriptions of concerns are given again in Section 7.0, ***Conclusions and Recommendations***, along with recommendations as to how to address the concerns and the estimated costs of completing any recommended next-step action.

ITEMS OF ENVIRONMENTAL CONCERN (MAJOR, MEDIUM, OR MINOR)

Concern #	Location Description	Description of Environmental Concern	Level of Concern
1	Southern third of subject site	Six oil producing wells are currently operating at the subject property. In addition, a review of a California Department of Oil & Gas (CDOG) map indicated that an abandoned oil well is also located on-site. Concerns that may be associated with oil wells include the following: (1) It is not uncommon to find an "apron" of surficial petroleum hydrocarbon impact surrounding the well head that can extend to distances of 20 feet. (2) It was a typical practice for several nearby wells to share a "mud pit." A mud pit is a large (sometimes hundreds of feet in circumference), bermed pit that contains the circulation mud used to cool the drill bit at depth. The mud commonly contains additives that may be considered hazardous by today's standards. Mud pits were typically abandoned in place by being buried with dirt. There is no indication that a mud pit is located on the site; however, because mud pits did not require permits, few records were kept regarding their exact location. A subsurface investigation performed by ***PHASE ONE* INC.** revealed the presence of elevated levels of total recoverable petroleum hydrocarbons (TRPH) in stained soil by piping associated with oil production. (Please see Appendix E for the Limited Phase II Environmental Site Assessment (ESA) Report for details.) Further, a Site Assessment report by Avanti Environmental, Inc., dated January 13, 1998, revealed the presence of TRPH-contaminated soil in the vicinity of Amos-Travis Well #1.	Minor
2	Southeast portion of site	During the site reconnaissance, an unlabeled 55-gallon drum which was not situated near any of the oil production areas was observed. The contents of the drum are not known. It is also unknown whether staining is present around the drum as the dense vegetation around the drum prevented an inspection for surface conditions. The contents of the drum may potentially be hazardous materials or wastes.	Minor

Concern #	Location Description	Description of Environmental Concern	Level of Concern
3	Subject site	A soil-gas survey performed by ***PHASE ONE* INC.** revealed the presence of elevated levels of methane in the vicinity of the oil exploration field on-site. The elevated levels of methane may be associated with oil exploration activities on-site and in nearby properties. Methane generated	Minor

Note:***PHASE ONE* INC.** classifies an environmental concern as a major, medium, or minor concern when it is one that involves a recognized environmental condition for which, in the opinion of ***PHASE ONE* INC.**, further investigation, action and/or remediation is recommended. The distinction among major, medium, and minor concerns is based solely on the relative estimated dollar-costs of completing any next-step recommended action.

Based on the findings of this Phase I Environmental Site Assessment, ***PHASE ONE* INC.** has identified one potential, possible, or historical recognized environmental condition associated with the subject site. Descriptions of any potential, possible, or historical recognized environmental conditions that may be associated with the subject site are given in the following table. These descriptions are given again in Section 7.0, ***Conclusions and Recommendations***, along with recommendations as to how to address the conditions, when such recommendations are called for.

POTENTIAL, POSSIBLE, OR HISTORICAL ENVIRONMENTAL CONDITIONS

Potential Condition #	Location Description	Description of Potential, Possible, or Historical Recognized Environmental Condition
4	Southern third of subject site	Oil exploration activities are ongoing on the southern third of the subject site. The concern exists that undiscovered stained soil and/or underground structures may be encountered during redevelopment activities at the site.

Note:***PHASE ONE* INC.** classifies an environmental condition as a potential or possible **condition**, as distinct from a major, medium, or minor **concern**, when it involves a *de minimis* issue that appears to pose no immediate threat to the subject site given the current knowledge of site conditions or it is the current commercial or customary practice to do so. This **condition** with time, groundwater movement, demolition or other disturbances, or sometimes with the acquisition of further information, may come to pose a long-term, immediate or chronic environmental risk; and/or this condition may appear to have a negligible monetary/physical impact on the subject property, and therefore, does not require additional investigation at this time. ***PHASE ONE* INC.** classifies a historical recognized environmental condition as an issue which was considered a recognized environmental condition in the past, but is no longer considered a recognized environmental condition as a result of prior investigation and/or mitigation.

1.3 SITE FACTS

This report presents the results of the Phase I Environmental Site Assessment and the Limited Phase II Environmental Site Assessment (ESA) conducted by ***PHASE ONE* INC.** at APNs 351-031-04, -05, and -17, Yorba Linda, California (see Figure 1, ***Site Location Map)***. The Phase I Environmental Site Assessment and the Limited Phase II Environmental Site Assessment (ESA) was conducted at the request of Sage MSREF Land Fund I, LLC in accordance with ***PHASE ONE* INC.**'s ***Standard Terms and Conditions***, as outlined in ***PHASE ONE* INC.**'s ***Letter of Intent/Authorization*** for Project **Nº** 6482 and 6483.

Current Owner(s): Jeffrey Simmons (APN 351-031-04); Virginia Richards Trust (APN 351-031-05); Amos A. Travis (APN 351-031-17)

Owned since: Jeffrey Simmons - 1986; Virginia Richards Trust - 1981; Amos A. Travis - 1995

Site Contact: Larry Netherton, Sage Communities

Date Contacted: June 2, 2006

Field Assessor: Eric Exton

Report Writer: Paolo Dizon

Parcel #: 351-031-04, -05, and -17

Address(es) Provided by Client: APNs 351-031-04, -05, and -17

Additional/Previous Address(es): None found

Total Acreage of Land: 116.25

Date of Site Reconnaissance: May 23, 2006

Total # of Wells (water, oil, gas, other) identified onsite: 7

Areas/Units that were inaccessible to the ***PHASE ONE*** **INC.** field assessor: Due to steep terrain and dense vegetation, much of the site was inaccessible to the assessor.

The subject site will obtain its potable water source from municipal sources.

The subject site will dispose of its sewage through the municipal sewage system.

Did the field assessor notice any unusual odors on or from the subject site or adjoining sites during the site reconnaissance? No

1.4 EXCEPTIONS AND/OR DELETIONS TO ASTM E 1527-00

There is an exception to ASTM E 1527-00. Certain areas of the subject site were not accessible; see list above. In addition, interview questionnaires were not completed by one of the site owners: Jeffrey Simmons (APN 351-031-04).

SECTION 2.0

INTRODUCTION

2.1 PURPOSE OF A PHASE I ESA

The purpose of this Phase I Environmental Site Assessment is to assess (1) the likelihood of contamination of the subject site as a result of either past or present land-use practices; and (2) the potential for future environmental contamination which may occur as a result of current conditions or operations and maintenance activities at either the subject site or properties adjoining the subject site, thereby identifying real or potential environmental or economic impact to the subject site. In this way, the client may satisfy a requirement to qualify for the innocent landowner defense to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability by completing "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial and customary practice." To meet these objectives, ***PHASE ONE*** **INC.** attempted to complete the tasks outlined in this section except as noted in Section 1.4.

2.2 SCOPE OF WORK

The Scope of Work followed by this assessment is designed to meet or exceed the standard practice set forth in the American Society for Testing and Materials (ASTM) Designation: E1527-00, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process."

2.2.1 Site Description

Site photographs were taken during the site reconnaissance on May 23, 2006. Photographs of the subject site are provided and labeled in Appendix A. Descriptions of the photographs are included in Section 3.0.

PHASE ONE **INC.** reviewed pertinent, reasonably ascertainable information on the soil types and groundwater conditions in the vicinity of the subject site. For the purposes of this assessment, the depth from the ground surface and the direction (or gradient) of the groundwater flow are of particular significance. Such findings are used by ***PHASE ONE*** **INC.** report writers, in conjunction with additional information about environmental conditions on nearby sites, to assess the risk that is faced by the subject site from off-site sources of contamination.

It should be noted that ***PHASE ONE*** **INC.**'s geological and hydrological research does not include investigation of seismological concerns (i.e., fault lines) that may affect the area of the subject site. Although the existence of faults in an area may be of concern to property owners and residents in that area, it is not considered to be an environmental concern, and so is not usually a component of a Phase I Environmental Site Assessment. (However, in the event that it is required, ***PHASE ONE*** **INC.** can assist the client in completing a seismological investigation.)

2.2.2 Review of Historical Information

For this assessment, ***PHASE ONE*** **INC.** may have reviewed reasonably ascertainable historical aerial photographs and United States Geologic Survey (U.S.G.S.) topographic maps of the subject site and vicinity. This review consisted of examining the reasonably ascertainable available photographs and topographic maps for evidence of activities on or development of the subject site and adjoining sites that may show an environmental condition or concern which may currently affect the subject site. The specific aerial photographs and U.S.G.S. maps that were reviewed for this assessment are identified and their environmentally relevant features are described in Section 4.1.

PHASE ONE **INC.** may have also reviewed any reasonably ascertainable Historic Maps of the subject site and vicinity. Such maps have been prepared by fire insurance companies in order to determine the potential risk of fire damage to buildings in metropolitan areas. These maps have been produced since the mid-1850s and, for some areas, they are still produced today. For the purposes of a Phase I Environmental Site Assessment, these maps may contain helpful information on the ages and past uses of buildings, as well as information about on the storage of hazardous and flammable substances. However, because it was only worthwhile for fire insurance companies to map metropolitan areas, the scope of coverage of these maps is somewhat limited. If Historic Maps have provided coverage of the subject site, and if the specific maps were reasonably ascertainable, then the specific maps that were reviewed for this assessment are identified, and their environmentally relevant features described, in Section 4.2.

One of the least known yet most complete and comprehensive historical sources are historical city or street directories. These texts may have been reviewed by ***PHASE ONE*** **INC.** to the extent that they have provided coverage of the subject site and were reasonably ascertainable. ***PHASE ONE*** **INC.** reviews historical city or street directories (also known as criss cross or reverse indexed directories) for information on the past occupants of and activities on the subject site and adjoining sites. These directories were prepared by companies that catered to the needs of salespeople by providing the names of the occupants at a given address (that is, unlike a traditional telephone book, the entries of a reverse directory are arranged by address, not by name). However, like Historical Maps, the scope of coverage of these directories is limited to mostly metropolitan areas. If they were reasonably ascertainable, they were reviewed and Section 4.3 contains listings of the current or past occupants of the subject site that were found by researching historical city or street directories.

PHASE ONE **INC.** has contacted various state, county, and municipal agencies having current or past jurisdiction over the subject site, in an attempt to review reasonably ascertainable records that contain specific information about environmental conditions on the subject site that these agencies may have on file, or to establish that no environmentally relevant records are on file for the subject site. The client should be aware that most regulatory agencies file their records by address or corporate name (as opposed to parcel number or site name). If no specific address has been assigned to a site, then, typically, no environmental records related to the site will be forthcoming from the state, county, or municipal regulatory agencies.

The findings of this records search are reported in Section 4.4, ***Agency Contacts***. The addresses, phone numbers, names of the persons contacted within the various agencies are listed on the Regulatory Contacts Sheet, which is included in Appendix B. Copies of any records obtained from

regulatory agencies can be found in Appendix C. In some instances, ***PHASE ONE* INC.** may not yet have received a reply from one or more of the agencies that were contacted. (Some agencies will take six weeks or longer to reply to a verbal or written request.) In the event of such delays in response, rather than delaying the issuance of the report, ***PHASE ONE* INC.** has indicated in the report that a response to the request for records is pending, and a copy of the regulatory request form has been included in Appendix B. Any pertinent information that is subsequently received from the pending agency will be addressed and forwarded to the client in the form of an addendum to this report.

***PHASE ONE* INC.** has also reviewed a vendor-supplied, computer-generated federal, state, and regional one-mile regulatory database search in an effort to determine whether the subject site is listed on an agency environmental database and to identify possible regulatory-listed sites of concern within a one-mile radius of the subject site. In general, these documents list known or suspected hazardous-waste generators, release sites, landfills, unauthorized disposal sites, sites with registered underground storage tanks, and sites currently under investigation for known or suspected environmental violations or releases. In conjunction with the findings on the geological and hydrological conditions, information obtained from the database search can be used to assess the environmental risk faced by the subject site from past or present off-site sources of contamination. Additionally, the database search may provide information about on-site sources of contamination. The regulatory database review can be found in Section 4.5; a copy of the complete database search document and a detailed description of the databases that were searched are included in Appendix D.

When requested, ***PHASE ONE* INC.** will compile and review a chain-of-title abstract for the subject property. The chain-of-title abstract can help the client and ***PHASE ONE* INC.** to better understand the history of the use of the subject site. The chain-of-title abstract is typically compiled from documents obtained from the County Recorder's Office or Tax Assessor's Office. The chain-of-title abstract review, if completed for this report, can be found in Section 4.6. The County Assessor also may be contacted to determine whether the subject site has been assigned addresses in the past which are different from its current address. It is the client's responsibility to supply ***PHASE ONE* INC.** with any records of environmental liens or other such documents.

On occasion, the client, the client's representatives, or on-site personnel will make available environmental documents pertaining to the subject site. These documents may be prior Phase I Reports, environmental site remediation reports, foundation soil reports, or occupancy records, among others. If these are made available prior to the issuance of the report, ***PHASE ONE* INC.** will review the conclusions of these documents, which may help to confirm or disprove any tentative findings that ***PHASE ONE* INC.** has developed independently. If the client has supplied environmental documents for review as part of this assessment, the findings are included in Section 4.7.

After the above information from existing historical records has been gathered, evaluated, and presented in separate subsections of the report, ***PHASE ONE* INC.** takes the separate findings and recompiles them into a single table, according to the chronology of the historical records. The reiteration of the historical material in this manner (called a ***Chronological Historic Summary***) can help the client, as well as the field assessors and reviewers, gain a clearer perspective of the history of the subject site. The ***Chronological Historic Summary*** is presented in Section 4.8.

2.2.3 Site Reconnaissance

A ***PHASE ONE*** **INC.** field assessor conducted a visual reconnaissance of the subject property on May 23, 2006 to identify observable signs of environmental impairments, including on-site operations and maintenance activities which may lead to possible environmental impairment. As a part of the site reconnaissance, ***PHASE ONE*** **INC.** visually inspected the site for obvious indications of:

- Existing and previously existing storage tanks (aboveground and underground)
- Hazardous substances storage and handling
- Clarifiers, sumps, trenches, and industrial discharge sources
- Equipment which may contain polychlorinated biphenyls (PCB) (fluorescent light ballasts are not inspected)
- Indications of spillage of hazardous substances, and the general condition of concrete, asphalt, soil, and other surfaces
- Indications of stressed vegetation as a result of on-site contamination

During the site reconnaissance, ***PHASE ONE*** **INC.** field assessors commonly make note of basic compliance issues which, may be environmental in nature, however are not issues directly associated with the potential for site contamination (i.e., the specific objective of our assessment). However, as a service to our clients, and because these compliance issues may contribute to our overall understanding of site operations, ***PHASE ONE*** **INC.** completes a limited review of the site's basic compliance status. The review of the site's compliance status is not intended to be complete or comprehensive and may or may not include all items identified during the site reconnaissance.

Again, the compliance review is not intended as a comprehensive compliance audit. Rather, the compliance review is only intended to aid ***PHASE ONE*** **INC.** in determining the likelihood that the subject site may have been impacted by releases of hazardous substances.

When the storage or use of hazardous substances are encountered on a site, the ***PHASE ONE*** **INC.** field assessor will look for or inquire about the on-site presence of Material Safety Data Sheets (MSDSs). MSDSs are prepared by the manufacturers of hazardous substances (pursuant to OSHA's Hazard Communication Standard), and they detail the components, dangers, and proper handling procedures for the hazardous substance for which they have been prepared. The presence or absence of MSDSs for on-site hazardous substances will be noted in 5.3, ***Hazardous Substances Storage and Handling***. However, some sites may use or store hundreds of various chemical compounds. In such cases, it is practically impossible for the field assessor to match-up each substance with its corresponding MSDS. Still, the field assessor will inquire about MSDSs and copies of representative MSDSs that were made available will be included in Appendix G.

***PHASE ONE* INC.** inspected and reviewed information for the subject site regarding the presence of specific hazardous substances which are relatively common sources of environmental concern. The substances in question may include:

- Radon (at elevated levels)
- Lead-contaminated drinking water

***PHASE ONE* INC.** also inspected the properties that adjoin the subject site. In general, this inspection included a "drive-by" survey to note the operations which may pose an imminent or potential environmental threat to the subject site.

2.2.4 Interviews

***PHASE ONE* INC.** attempts to interview various individuals who may have knowledge of various aspects of the subject site. Typically, the interviewees might include:

- Current and previous owners
- Site and operations managers
- Tenants
- Local regulatory personnel

The interviews are summarized in Section 6.0 and interview notes are included in Appendix F.

2.2.5 Conclusions and Recommendations

Section 7.0, ***Conclusions and Recommendations***, provides detailed descriptions of the environmental concerns or possible or potential environmental conditions that, in the professional opinion of ***PHASE ONE* INC.**, currently affect the subject site. Section 7.0 also recommends or suggests the next-step actions that may be required to begin addressing the concerns or conditions.

The essential information on a concern or condition at a given location is contained in the "Description of Concern" and the "Action Suggested" boxes of the table for that location. The identification, section, and page numbers refer to those sections in the report that describe the research tasks and findings behind the conclusions. This reporting method allows the reader to quickly go to those sections that are pertinent to the concern.

2.3 INTERPRETATION OF THE REPORT

Following the completion of the tasks outlined above, ***PHASE ONE* INC.** prepared this report to present our findings and conclusions clearly and consistently. In an attempt to aid the reader and bring organization to pieces of seemingly unrelated information, ***PHASE ONE* INC.** has developed a report format that is both innovative and concise. Each piece of information is described in the context of the research or assessment task under which it was found, and each is assigned an identification number. Typically, an environmental concern will incorporate a number of specific findings. So, in Section 7.0, ***Conclusions and Recommendations***, the various particular findings are grouped together and collectively presented with the description of the environmental concern that is corroborated by those findings.

SECTION 3.0

SITE DESCRIPTION

The subject site is located within an area of predominantly residential properties. On the date of the site reconnaissance, May 23, 2006, the subject site consisted of vacant land on the northern two-thirds of the subject property and an oil exploration field on the southern third of the subject property. The following subsections describe the physical characteristics of the subject site.

3.1 SITE PHOTOGRAPH DESCRIPTIONS

On May 23, 2006, a ***PHASE ONE*** **INC.** field assessor completed a reconnaissance of the subject site, at which time a number of photographs were taken to document the current condition and use of the site. Although the specific findings of the site reconnaissance are discussed in Section 5.0, ***Site Reconnaissance***, the photographs are described in the following table, and photographed areas or items of concern are noted. The photographs themselves are mounted and labeled with identification numbers in Appendix A.

SITE PHOTOGRAPH DESCRIPTIONS (OUTDOORS)

ID #	Description (If a concern, why?)	Level of Concern
OP01	**COVER PHOTO:** A view of the subject site, APNs 351-031-04, -05, and -17, in Yorba Linda, California. The northern two-thirds of the subject site is undeveloped land. The southern third of the subject site has been used for oil exploration and production. In view is Santa Ana Canyon Development, Amos Travis Lease Well #1. In the background are two aboveground storage tanks (ASTs) and other machinery. The site assessor was not accompanied during the site walk.	Minor
OP02	A view of some piping associated with the well mentioned in OP01. This is located approximately 50 feet to the west of where the previous photograph was taken. The soil around the pipe is visibly stained.	Minor
OP03	A view within a fenced area surrounding the ASTs described in OP01. A 55-gallon drum and a 5-gallon bucket are visible, the contents of which are both unknown. However, these containers appear to be associated with oil production. There is also a white roll-off bin that is believed to contain machinery, as mechanical noises were emanating from the bin. Based on review of a client-supplied document (Avanti Environmental Inc. Site Assessment Report, dated January 13, 1996), a generator is located inside the roll-off bin.	Minor
OP04	A view of an operating oil well located on the easternmost portion of the subject site. To the left of the field of view, there is machinery for at least two more wells. However, the machinery is only stored in this area, is disconnected, and is not the location of additional wells.	Minor
OP05	A view of three aboveground storage tanks; two large cylindrical tanks to the left of the field of view, and one square-shaped tank to the right of the field of view. The soil around the square-shaped tank is stained with oil.	Minor
OP06	Another view of the square-shaped tank discussed in photograph OP05. Another cylindrical tank is visible in the background.	Minor

ID #	Description (If a concern, why?)	Level of Concern
OP07	A view of the same general area discussed in photograph OP06, but from across the dirt road. In view is another AST which is on its side. The tank appears to have been abandoned and discarded, it is not known whether the AST contains anything. Observed in the distance are three more ASTs and an oil well, all of which are on the east adjacent site.	Minor
OP08	A view of a portion of an abandoned vehicle and an unlabeled 55-gallon drum. The drum is approximately half-full of an unknown liquid. As this drum is not situated within any of the oil well compounds on the property, it is not known whether it is associated with the current oil production activities on-site. Due to the dense vegetation, it was impossible to thoroughly inspect this area for staining or other impairments.	Minor
OP09	A view of another oil well located on the subject site. In view is an AST, the contents of which are unknown. The AST is in secondary containment which is half-full of what appears to be water. In addition, there are three 55 gallon drums in this area. The drum in the center of the field of view has a label, but is illegible. The caps on the second drum were observed to be missing, which would allow rainwater to enter the drum. Both the second and third drums were not labeled, and therefore, their contents are unknown. However, these containers appear to be associated with oil production.	Minor

3.2 GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

According to United States Geological Survey (U.S.G.S.) STATSGO data, the most common native soil types in the vicinity of the subject site are Anaheim, 30-50% slopes and Calleguas, 50-75% slopes. It does not appear that imported fill materials were used during the grading or development of the site; therefore, fill material is not a concern for the subject site. The elevation of the subject site appears to be 600 to 900 feet above mean sea level.

According to the Orange County Water District, Water Quality Department, the depth to groundwater and/or the direction of the groundwater flow in the vicinity of the subject site is unknown because groundwater information is not mapped or kept readily available in the vicinity of the subject property. ***PHASE ONE*** **INC.** does not rely on topographic contours to predict groundwater flow direction because this method does not consistently or accurately reflect true hydrogeologic conditions. In any case, the flow direction and depth of groundwater may be influenced by rainfall, tidal activity (shore properties), and local groundwater pumping operations. It should also be noted that shallow, perched groundwater zones may occur in the immediate site vicinity.

During the site reconnaissance and the review of historical maps and photographs, numerous waterways, no wetlands, no pits, no lagoons, and no ponds were seen to currently exist on the subject site. There were numerous waterways, no wetlands, no pits, no lagoons, and no ponds seen to previously exist on the subject site. In addition, numerous waterways, no wetlands, no pits, no lagoons, and no ponds were found on properties adjoining the subject site. According to FEMA Q3 Digital Data, the site is located within a greater than 100-year flood zone. Storm water discharge across the site appears to flow multidirectionally. There appeared to be no facility for handling storm water discharge. The direction and destination of storm water discharge does not appear to be a source of environmental concern to the subject site.

SECTION 4.0

REVIEW OF HISTORICAL INFORMATION AND REGULATORY AGENCY RECORDS

4.1 HISTORICAL AERIAL PHOTOGRAPH AND U.S.G.S. TOPOGRAPHIC MAP REVIEW

On May 2, 2006, ***PHASE ONE* INC.** contacted the University of California, Irvine, Main Library in an effort to review readily available historical aerial photographs and United States Geologic Survey (U.S.G.S.) topographic maps of the area of the subject site. ***PHASE ONE* INC.** also reviewed various aerial photographs and topographic maps obtained from ***PHASE ONE* INC.**'s in-house library. The following table contains descriptions of the reasonably ascertainable aerial photographs and topographic maps that were reviewed. Any environmentally relevant features or items of environmental concern that were observed in these aerial photographs and topographic maps are noted. (A copy of a U.S.G.S. map, if available, has been included as Figure 1.)

HISTORICAL AERIAL PHOTOGRAPH AND U.S.G.S. TOPOGRAPHIC MAP REVIEW

ID #	Collection Reference #	Date of Document	Description (If a concern, why?)	Level of Concern
HP01	USGS Topo Map* Anaheim Quad 15 min. series	1930	No structures, tanks, or wells are evident on the subject site or on all adjacent sites, although intermittent streams are depicted.	None
HP02	Aerial Photo	1964	The subject site appears undeveloped. Given the scale and quality of the photograph, it cannot be determined whether oil exploration activities are present on-site. To the north, south, and west is undeveloped land. To the east is undeveloped land and an area used for oil exploration activities.	Minor
HP03	Aerial Photo	1974	The southern third of the subject site appears to be used for oil production; structures are evident in the locations of all the present-day wells. There also appears to be a structure in the vicinity of the location of the on-site plugged and abandoned oil well. The north and south adjacent sites are vacant land. To the east is vacant land and an oil production area. To the west is vacant land, followed by an area used for oil production.	Minor
HP04	Aerial Photo*	1980	The present-day dirt roads and oil exploration-related structures on the southern third of the subject site are visible. In addition, what appears to be a dirt trail is visible on the northwest portion of the subject site. Further, an area light in color, which appears to have been cleared of vegetation, is visible on the northeast portion of the subject site. The remainder of the subject site appears undeveloped. The north and east adjacent sites are primarily undeveloped, with the exception of the present-day oil exploration-related structures to the east. The south adjacent site appears undeveloped, although a waterway is evident. The west adjacent site appears primarily undeveloped.	Minor

ID #	Collection Reference #	Date of Document	Description (If a concern, why?)	Level of Concern
HP05	USGS Topo Map* Yorba Linda Quad 7.5 min. series	1981	Four wells, two tanks, and two small square-shaped structures are evident on the southern third of the subject site. In addition, several intermittent streams are evident on-site. No structures, tanks, or wells are evident to the north and south of the subject site. Two tanks and a well are evident on the east adjacent site. Numerous wells are evident to the west of the subject site. The subject site is situated at approximately 600 to 900 feet above mean sea level and the topography slopes multidirectionally.	Minor
HP06	Aerial Photo TerraServer Image	2002	The subject site and the east, west, and south adjacent sites resemble their present-day configurations. To the north is undeveloped land.	Minor

Note:Each aerial photograph was reviewed for subject property and, where applicable, adjacent property use. In addition, each photograph was reviewed to identify the presence of areas of dumping, staining, or aboveground storage tanks. Unless noted, such features were not identified from the review.

4.2 HISTORICAL MAP REVIEW

On May 30, 2006, ***PHASE ONE*** **INC.** contacted the Los Angeles Public Library in an effort to review readily available historical maps with coverage of the subject site and vicinity that might be included in their collections. However, a search of the reasonable ascertainable historical maps found that none provided coverage of the area of the subject site.

4.3 HISTORICAL CITY OR STREET DIRECTORY REVIEW

PHASE ONE **INC.** did not review historical city or street directories for one or more of the following reasons:

1. Sufficient historical information was available from other sources to identify the past property uses.
2. Based on a reasonable amount of research, the information was not readily available, as defined in ASTM 1527-00.
3. After exhaustive research, ***PHASE ONE*** **INC.** determined that this information was not available for subject site.

4.4 AGENCY CONTACTS (RECORDS SEARCH)

4.4.1 Building Department Records

On May 30, 2006, ***PHASE ONE*** **INC.** contacted the Orange County Building and Development Services for the purpose of reviewing readily available building permits, original plumbing and finish schedules, building plans, or other relevant documents pertaining to the subject site that are on file with this agency. However, ***PHASE ONE*** **INC.** was informed that this agency cannot retrieve records without a street address and/or business name; therefore, no records could be obtained from this agency.

4.4.2 Fire Department Records

On May 30, 2006, ***PHASE ONE*** **INC.** contacted the Orange County Fire Authority for the purpose of reviewing readily available records this agency has on file for the subject site pertaining to hazardous substances storage, underground storage tanks, and related environmental issues. However, ***PHASE ONE*** **INC.** was informed that this agency cannot retrieve records without a street address and/or business name; therefore, no records could be obtained from this agency.

4.4.3 Health or Environmental Agency Records

On May 30, 2006, ***PHASE ONE*** **INC.** contacted the Orange County Health Care Agency, Environmental Health for the purpose of reviewing readily available environmental records that may be on file with this agency for the subject site. However, ***PHASE ONE*** **INC.** was informed that this agency cannot retrieve records without a street address and/or business name; therefore, no records could be obtained from this agency.

4.4.4 Sanitation Agency Records

On May 30, 2006, ***PHASE ONE*** **INC.** contacted the Orange County Sanitation District, Source Control for the purpose of reviewing readily available environmental records pertaining to industrial wastewater discharge permits, NPDES permits, and related documents on file with this agency for past and present businesses of the subject site. However, ***PHASE ONE*** **INC.** was informed that no records for the subject site were on file with this agency.

4.4.5 Water Quality Agency Records

On May 30, 2006, ***PHASE ONE*** **INC.** contacted the California Regional Water Quality Control Board, Region 8, SLIC and LUST Departments for the purpose of determining if past and present businesses at the subject site are listed on regulatory lists (such as leaking underground tank lists, site cleanup lists, etc.). However, ***PHASE ONE*** **INC.** was informed that this agency cannot retrieve records without a street address and/or business name; therefore, no records could be obtained from this agency.

4.4.6 Oil, Gas, and Pipeline Agency Records or Maps

On May 30, 2006, ***PHASE ONE*** **INC.** submitted a request to the State of California, Department of Conservation, Division of Oil & Gas (CDOG) for copies of readily available oil and gas related records pertaining to environmental issues on the subject site. The following table summarizes the results of this review.

SUMMARY OF DEPARTMENT OF OIL AND GAS RECORDS/MAPS

ID #	Date of Document	Description (If a concern, why?)	Level of Env. Concern
OG01	1965	Notice of Intention to Drill New Well for "Reeves" 1.	Minor
OG02	1965	Notice of Intention to Drill New Well for "Reeves" 2.	Minor
OG03	1966	Documents through 2000, pertaining to "Amos Travis" 1. The well was drilled in 1966. In 2000, ownership was transferred from Hillcrest Beverly Oil Corp. to Santa Ana Canyon Dev. Corp.	Minor
OG04	1966	Documents from February 1966 through August 1966, pertaining to the drilling of "Amos-Travis" 2.	Minor
OG05	1969	Documents through 1995, pertaining to "Amos Travis" 4. The well was drilled in 1969, and plugged and abandoned in 1994. The well is located 2,210 feet east and 2,830 feet south of the northwest corner of Section 19.	Minor
OG06	1969	Various documents through 1997 for "Reeves" 3. The documents primarily pertain to converting the well into a water injection well.	Minor
OG07	1989	Various documents through 2003 for "Amos-Travis" 3. The documents primarily pertain to converting the well into a water injection well.	Minor

4.4.7 Other Pertinent Records

On May 30, 2006, ***PHASE ONE*** **INC.** contacted the California State Fire Marshal, Pipeline Division to review readily available records pertaining to the presence of petroleum product pipelines on the subject site. However, ***PHASE ONE*** **INC.** was informed that no records for the subject site were on file with this agency.

4.5 REVIEW OF ENVIRONMENTAL RECORDS SEARCH

The ***PHASE ONE*** **INC.** review of the computer-generated, environmental records search document (the complete environmental records search document is included in Appendix D) found the subject site is a regulatory-listed site. The following table lists sites that are either (1) located within ¼ mile of the subject site (that is, close enough, under certain conditions, to possibly constitute an environmental risk to the subject site), or (2) are sites that are further than ¼ mile but still pose a concern to the subject site (that is, listed sites which may have experienced a release of hazardous substances of sufficient magnitude to constitute a regional threat or to have impacted the subject site).

REVIEW OF ENVIRONMENTAL RECORDS SEARCH

ID #	Map Location #	Site Name and Location	Distance from Site (Miles)	Listing Agencies	Site Status (If a concern, why?)	Level of Concern
RE01	1-6, 8	Santa Ana Canyon Dev. Corp.	Subject site	OGW	Status: Listed Six active oil wells and one plugged and abandoned oil well are present on-site.	Minor
RE02	11	Gary A. Darnell Trust c/o Darco Inc.	East adjacent site	OWG	Status: Listed Completed oil well.	Minor

Note:Map Location #s match the Map ID numbers of the sites used in the document located in Appendix D. Listings of unmapped sites were reviewed to identify the subject site or any sites that are obviously adjacent to the subject property. Other unmapped sites are listed only in Appendix D.

4.6 CHAIN-OF-TITLE ABSTRACT AND/OR REVIEW

At the request of the client, a chain-of-title abstract was not requested or completed for this project.

4.7 CLIENT-SUPPLIED ENVIRONMENTAL DOCUMENTS

During the course of this assessment, ***PHASE ONE*** **INC.** was provided with additional documents regarding the environmental condition of the subject site by the client or the client's representatives. The conclusions of these materials were reviewed only. ***PHASE ONE*** **INC.** relies upon the author/and corresponding companies' conclusions and expertise. ***PHASE ONE*** **INC.** does not evaluate the methodology, interpretation of results, analysis type or results, or verify in any way the completeness or correctness of the conclusions or procedures. ***PHASE ONE*** **INC.** relies upon the report and associated conclusions of the reports provided to ***PHASE ONE*** **INC.** The conclusions of these materials are described in the following table. (Copies of the records, if available, are included in Appendix G.)

SUMMARY OF CLIENT-SUPPLIED ENVIRONMENTAL DOCUMENTS

ID #	Date of Document	Document Type and Reference	Author Name and Company	Relevant Information	Level of Concern
DR01	1/13/1998	Site Assessment Report	Michael Bowery, Avanti Environmental, Inc.	The document pertains to a subsurface investigation around on-site wells and aboveground storage tanks. Soil samples were collected in the vicinity of wells Amos Travis #1, Amos Travis #2, Amos Travis #3, Reeves-Carillo #1, Reeves-Carillo #2, and Reeves-Carillo #3. A soil sample was also collected from the Reeves-Carillo Tank Farm. All but one soil sample (obtained from boring B-14, located north of the Reeves-Carillo Well #2) contained detectable levels of Total Recoverable Petroleum Hydrocarbons (TRPH). With the exception of the soil samples collected from boring B-6 (located by Amos Travis well #1), the levels of TRPH in the remaining samples "were within a range that does not warrant additional investigation." TRPH levels from boring B-6 increased with depth; the deepest sample, which contained 3,200 parts per million of TRPH, was obtained at twenty feet below ground surface (bgs). The author recommended additional investigation to determine the vertical and lateral extent of contamination around boring B-6.	Minor

4.8 CHRONOLOGICAL HISTORIC SUMMARY

The chronological historic summary of the reviewed photographs, maps, and regulatory agency files presented in the following table is a recompilation of the findings recorded in the preceding subsections of ***Section 4.0*** (with the exception of the regulatory database listings, all or most of which do not bear on the history of the subject site). Also, each entry may only represent part of the information contained in the original entry, please see the corresponding section for full details. No new findings are introduced in this table. The rows of this table are organized in chronological order, according to the date of the document (which may diverge from the date of the event discussed in the document.) Information is reiterated in this recompiled format in order to assist the client as well as the ***PHASE ONE*** **INC.** field assessors and report writers in forming an overall picture of the environmental history of the subject site.

CHRONOLOGICAL HISTORIC SUMMARY

ID #	Date of Document	Type of Document	Description	Level of Concern
HP01	1930	Aerial or Topo	No structures, tanks, or wells are evident on the subject site or on all adjacent sites, although intermittent streams are depicted.	None
HP02	1964	Aerial or Topo	The subject site appears undeveloped. Given the scale and quality of the photograph, it cannot be determined whether oil exploration activities are present on-site. To the north, south, and west is undeveloped land. To the east is undeveloped land and an area used for oil exploration activities.	Minor

ID #	Date of Document	Type of Document	Description	Level of Concern
OG01	1965	Oil and Gas	Notice of Intention to Drill New Well for "Reeves" 1.	Minor
OG02	1965	Oil and Gas	Notice of Intention to Drill New Well for "Reeves" 2.	Minor
OG03	1966	Oil and Gas	Documents through 2000, pertaining to "Amos Travis" 1. The well was drilled in 1966. In 2000, ownership was transferred from Hillcrest Beverly Oil Corp. to Santa Ana Canyon Dev. Corp.	Minor
OG04	1966	Oil and Gas	Documents from February 1966 through August 1966, pertaining to the drilling of "Amos-Travis" 2.	Minor
OG05	1969	Oil and Gas	Documents through 1995, pertaining to "Amos Travis" 4. The well was drilled in 1969, and plugged and abandoned in 1994. The well is located 2,210 feet east and 2,830 feet south of the northwest corner of Section 19.	Minor
OG06	1969	Oil and Gas	Various documents through 1997 for "Reeves" 3. The documents primarily pertain to converting the well into a water injection well.	Minor
HP03	1974	Aerial or Topo	The southern third of the subject site appears to be used for oil production; structures are evident in the locations of all the present-day wells. There also appears to be a structure in the vicinity of the location of the on-site plugged and abandoned oil well. The north and south adjacent sites are vacant land. To the east is vacant land and an oil production area. To the west is vacant land, followed by an area used for oil production.	Minor
HP04	1980	Aerial or Topo	The present-day dirt roads and oil exploration-related structures on the southern third of the subject site are visible. In addition, what appears to be a dirt trail is visible on the northwest portion of the subject site. Further, an area light in color, which appears to have been cleared of vegetation, is visible on the northeast portion of the subject site. The remainder of the subject site appears undeveloped. The north and east adjacent sites are primarily undeveloped, with the exception of the present-day oil exploration-related structures to the east. The south adjacent site appears undeveloped, although a waterway is evident. The west adjacent site appears primarily undeveloped.	Minor
HP05	1981	Aerial or Topo	Four wells, two tanks, and two small square-shaped structures are evident on the southern third of the subject site. In addition, several intermittent streams are evident on-site. No structures, tanks, or wells are evident to the north and south of the subject site. Two tanks and a well are evident on the east adjacent site. Numerous wells are evident to the west of the subject site. The subject site is situated at approximately 600 to 900 feet above mean sea level and the topography slopes multidirectionally.	Minor
OG07	1989	Oil and Gas	Various documents through 2003 for "Amos-Travis" 3. The documents primarily pertain to converting the well into a water injection well.	Minor
DR01	1/13/1998	Client-Supplied	Site Assessment Report	Minor
HP06	2002	Aerial or Topo	The subject site and the east, west, and south adjacent sites resemble their present-day configurations. To the north is undeveloped land.	Minor

SECTION 5.0

SITE RECONNAISSANCE

The current section of this report is a compilation of the observations made during the visual site inspection conducted by Eric Exton on May 23, 2006. (Résumés of the field assessor, report writer, and reviewers are included in Appendix I.)

5.1 EXISTING STORAGE TANKS

It is our understanding that eight aboveground storage tanks are currently operated at the site. The following table summarizes the information regarding the existing tanks.

EXISTING STORAGE TANKS (GENERAL INFORMATION)

ID #	Above/ Under Ground	Location and Photo #	Why or Why Not a Concern?	Level of Concern
ET01	Above	By Amos Travis Well #1 (OP01)	Aboveground storage tank associated with oil production.	Minor
ET02	Above	By Amos Travis Well #1 (OP01)	Aboveground storage tank associated with oil production.	Minor
ET03	Above	By Reeves Well #2 (OP05)	Aboveground storage tank associated with oil production.	Minor
ET04	Above	By Reeves Well #2 (OP05)	Aboveground storage tank associated with oil production.	Minor
ET05	Above	By Reeves Well #2 (OP05, OP06)	Aboveground storage tank associated with oil production.	Minor
ET06	Above	By Reeves Well #2 (OP06)	Aboveground storage tank associated with oil production.	Minor
ET07	Above	By Reeves Well #2 (OP07)	Aboveground storage tank associated with oil production.	Minor
ET08	Above	By Reeves Well #1 (OP09)	Aboveground storage tank associated with oil production.	Minor

EXISTING STORAGE TANKS (SPECIFICATIONS)

ID #	Tank Construction	Tank Monitoring	Status	Approx. Size (Gal.)	Contents	Age of Tank
ET01	Steel	Unknown	Unknown	Not indicated	Unknown	Unknown
ET02	Steel	Unknown	Unknown	Not indicated	Unknown	Unknown
ET03	Steel	Unknown	Unknown	Not indicated	Unknown	Unknown
ET04	Steel	Unknown	Unknown	Not indicated	Unknown	Unknown
ET05	Steel	Unknown	Unknown	Not indicated	Unknown	Unknown
ET06	Steel	Unknown	Unknown	Not indicated	Unknown	Unknown

ID #	Tank Construction	Tank Monitoring	Status	Approx. Size (Gal.)	Contents	Age of Tank
ET07	Steel	Unknown	Unknown	Not indicated	Unknown	Unknown
ET08	Steel	Unknown	Unknown	Not indicated	Unknown	Unknown

5.2 PREVIOUSLY EXISTING STORAGE TANKS

No evidence of previously existing aboveground or underground storage tanks was observed on the subject site during the site reconnaissance.

5.3 HAZARDOUS SUBSTANCE STORAGE AND HANDLING

No storage or handling of hazardous substances was observed in the areas inspected during the site reconnaissance.

5.4 SPECIFIC HAZARDOUS SUBSTANCES RECONNAISSANCE

5.4.1 Summary of Specific Hazardous Substances Reconnaissance (Beyond ASTM Scope)

In addition to a general inspection of the subject site for evidence of the presence of hazardous substances or environmental concerns, a ***PHASE ONE*** **INC.** field assessor also conducted a reconnaissance for a set of specific hazardous substances that are not addressed in the scope of the ASTM Standard (1527-00). The results of this specific reconnaissance are given in the following table. If a specific suspected hazardous substance was sampled or otherwise tested, this will be indicated in the table, and the results of the laboratory analysis or other tests will be given in Section 5.4.2.

SPECIFIC HAZARDOUS SUBSTANCES (BEYOND ASTM SCOPE)

ID #	Substance	Sampled?	Description	Level of Concern
SHS01	Radon	No	The subject property is located in an area that is considered to have a low occurrence of radon. However, the occurrence of radon is site-specific; only testing can determine the actual radon level at the site.	None

Note:If the table indicates that a given substance has been sampled, then a related table can be found in Section 5.4.2, which will give the results of the laboratory analysis of the sample or samples. In addition, if site building substances are only suspected of containing asbestos (but were not sampled), Section 5.4.2 will include a detailed summary of the substances of concern.

5.4.2 Details of Specific Hazardous Substances Sampling/Observations

No sampling or testing of suspected hazardous substances was performed or authorized for this assessment.

5.5 POLYCHLORINATED BIPHENYLS (PCB)

The ***PHASE ONE*** **INC.** site reconnaissance will not include checking on-site fluorescent light fixtures for potential PCB content. Although fluorescent light ballast may contain PCBs, the amount contained is considered to be so inconsequential that the ASTM (*Standard Practice*, E 1527-00, Sect. 8.4.2.10) has recently stated: "Fluorescent light ballast likely to contain PCBs does not need to be noted." in a Phase I Environmental Site Assessment Report.

No known or suspected PCB-containing equipment or materials were observed on-site during the site reconnaissance.

5.6 CLARIFIERS, SUMPS, TRENCHES, AND INDUSTRIAL DISCHARGE SOURCES

No clarifiers, sumps, trenches, industrial floor drains, or industrial discharge points were noted during the site reconnaissance.

5.7 SURFACE CONDITIONS

During the site reconnaissance, areas of staining or other unusual surface conditions were observed on-site. These observations are detailed in the following table.

SURFACE CONDITIONS

ID #	I/O	Approx. Size (ft^2)	Approx. Depth	Suspected Substance	Description and Photo #	Level of Concern
SC01	O	2	Unknown	Oil	Significant oil staining was around piping related to oil exploration activities. ***PHASE ONE*** **INC.** sampled the stained soil and found an elevated level of total recoverable petroleum hydrocarbons (TRPH) to be present. (Please see Appendix E for the Limited Phase II Environmental Site Assessment (ESA) Report for details)	Minor
SC02	O	64	Unknown	Oil	Significant oil staining was observed around an aboveground tank related to oil exploration activities.	Minor

Note:I/O = Inside/Outside

5.8 STRESSED VEGETATION

No disfigured, discolored, dying, or otherwise stressed vegetation was observed on-site during the site reconnaissance.

5.9 PRIOR OR CURRENT AGRICULTURAL LAND USE

On the basis of information reviewed for this assessment, it does not appear that the site has been used for agricultural purposes in the past.

5.10 OTHER ENVIRONMENTAL CONCERNS OR CONDITIONS

During the site reconnaissance, further evidence of environmental concerns or conditions that were not already noted in this section, or that were not yet fully discussed in this section, were observed on the subject site. These observations are described in the following table.

OTHER ENVIRONMENTAL CONCERNS OR CONDITIONS

ID #	Location and Photo #	Description	Level of Concern
EC01	Southern third of subject site (OP01-OP07, OP09)	Oil exploration activities are performed on the southern third of the subject site. Currently, six active oil wells, one plugged and abandoned oil well, and numerous tanks and piping related to oil exploration activities, are present on-site. Also, a soil gas survey performed by ***PHASE ONE* INC.** revealed elevated levels of methane in the vicinity of the oil production field. (Please see Appendix E for the Limited Phase II Environmental Site Assessment (ESA) Report for details.)	Minor/ Potential
EC02	Southeast portion of site (OP08)	An unlabeled 55-gallon drum approximately half-full of an unknown liquid was observed.	Minor

5.11 VISUAL OBSERVATIONS, ADJOINING SITES

During the site reconnaissance, the ***PHASE ONE* INC.** field assessor also visually inspected and documented the use of those properties which adjoin the subject property. The observations of the adjoining properties made by Eric Exton on May 23, 2006 and these properties' past uses are summarized in the following table.

VISUAL OBSERVATIONS, ADJOINING SITES

ID #	Description	Level of Concern
VOA01	**North View:** Address: Multiple Company Name: N/A Apparent Current Use of Property: Residential Previous Use of Property: Undeveloped	None
VOA02	**South View:** Address: Multiple Company Name: N/A Apparent Current Use of Property: Residential Previous Use of Property: Undeveloped	None
VOA03	**East View:** Address: N/A, N/A Company Name: N/A, Darco Inc. Apparent Current Use of Property: Vacant land, Oil production Previous Use of Property: Undeveloped	Minor
VOA04	**West View:** Address: Multiple Company Name: N/A Apparent Current Use of Property: Residential Previous Use of Property: Undeveloped	None

SECTION 6.0

INTERVIEWS

As part of the Phase I Assessment, ***PHASE ONE*** **INC.** attempts to interview various individuals who may have knowledge of different aspects of the subject site as it pertains to environmental conditions. The comments of the interviewees are noted by the ***PHASE ONE*** **INC.** interviewer on Interview Note Forms, which are included in Appendix F. The following table summarizes the relevant portions of these notes.

SUMMARY OF INTERVIEWS

ID #	Date of Interview	Name of Interviewee	Title	Relevant Discussions	Level of Concern
PI01	6/2/2006	Amos Travis	Owner/Trustee (APN 351-031-17)	Mr. Travis stated that Travis Ranch Trusts has owned the subject site for 11 years. He indicated the presence of oil wells and oil holding tanks on-site. He is aware of environmental concerns, including stained areas, on-site. He is also aware an environmental report that has been prepared for the subject site in the past. (Please refer to Section 4.7 for a summary of the report). Mr. Travis stated that he has not been made aware of any pending, threatened, or past: notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the subject site, or relating to environmental liens; notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products; or administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.	Minor
PI02	6/13/2006	Linda Rodger	Co-Trustee, Virginia Richards Trust (APN 351-031-05)	Ms. Rodger stated that Virginia Richards Trust has owned the subject site for 25 years. She indicated the presence of oil wells and aboveground storage tanks on the property. Ms. Rodger stated that she has not been made aware of any pending, threatened, or past: notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the subject site, or relating to environmental liens; notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products; or administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the property.	Minor

SECTION 7.0

CONCLUSIONS AND RECOMMENDATIONS

7.1 ENVIRONMENTAL CONCERNS

This section contains full descriptions of any major, medium, or minor environmental concerns that have been identified as a result of the ***PHASE ONE*** **INC.** Phase I Environmental Site Assessment for the subject site. ***PHASE ONE*** **INC.** classifies a concern as a major, medium, or minor environmental concern (as opposed to a potential or possible condition) when it is one that involves a recognized environmental condition for which, in the opinion of ***PHASE ONE*** **INC.**, further investigation and/or remediation is recommended. The distinction among major, medium, and minor concerns is based solely on the relative estimated dollar-cost of completing the next-step recommended action. In addition to the descriptions of concern, this section also contains a statement of the recommended next-step actions for any concerns that are described in the following tables.

Each identified environmental concern receives its own table, and that table will collect together the particular findings from the body of the report that have been used to support ***PHASE ONE*** **INC.**'s conclusion as to the presence of an environmental concern. For the benefit of the reader, the tables also contain the ID, page, and section numbers of the findings cited in support of the concern.

CONCERN # 1		IDENTIFIED CONCERN APPEARS TO BE A MINOR ENVIRONMENTAL CONCERN	
ID #	**SECTION #**	**PAGE #**	**COMMENTS**
OP01—07, OP09	3.1	3-1, 3-2	Photographs of items associated with oil exploration activities on-site.
HP02—06	4.1	4-1, 4-2	Aerial photographs and/or topographic maps portraying the presence of oil exploration activities on-site.
OG01—07	4.4.6	4-4	Agency records pertaining to oil wells on-site.
RE01	4.5	4-4	Database listing of on-site oil wells.
DR01	4.7	4-5	Client-supplied document identifying TRPH-contaminated soil on-site.
ET01—08	5.1	5-1	Observation of aboveground storage tanks associated with on-site oil exploration activities.
SC01—02	5.7	5-4	Observation of stained soil around a pipe and around an aboveground storage tank associated with oil exploration activities.
VOA03	5.11	5-5	Observation of oil exploration activities adjacent to the subject site.
PI01	6.0	6-1	Interviewee discussing environmental concerns associated with the subject site.
PI02	6.0	6-1	Interviewee discussing the presence of oil production on-site.
EC01	5.10	5-4	Observation of oil exploration activities on-site.

DESCRIPTION OF CONCERN: Six oil producing wells are currently operating at the subject property. In addition, a review of a California Department of Oil & Gas (CDOG) map indicated that an abandoned oil well is also located on-site. Concerns that may be associated with oil wells include the following: (1) It is not uncommon to find an "apron" of surficial petroleum hydrocarbon impact surrounding the well head that can extend to distances of 20 feet. (2) It was a typical practice for several nearby wells to share a "mud pit." A mud pit is a large (sometimes hundreds of feet in circumference), bermed pit that contains the circulation mud used to cool the drill bit at depth. The mud commonly contains additives that may be considered hazardous by today's standards. Mud pits were typically abandoned in place by being buried with dirt. There is no indication that a mud pit is located on the site; however, because mud pits did not require permits, few records were kept regarding their exact location.

A subsurface investigation performed by ***PHASE ONE*** **INC.** revealed the presence of elevated levels of total recoverable petroleum hydrocarbons (TRPH) in stained soil by piping associated with oil production. (Please see Appendix E for the Limited Phase II Environmental Site Assessment (ESA) Report for details.) Further, a Site Assessment report by Avanti Environmental, Inc., dated January 13, 1998, revealed the presence of TRPH-contaminated soil in the vicinity of Amos-Travis Well #1.

ACTION SUGGESTED: Prior to the residential redevelopment of the subject site, all the active oil wells, together with ASTs and piping associated with the wells, should be abandoned in accordance with regulatory agency guidelines. All other containers associated with oil production should also be disposed of accordingly. Further, any stained soil and soil identified as having elevated levels of TRPH should also be disposed of in accordance with regulatory agency guidelines. After decommissioning of the oil field on the subject site, contact ***PHASE ONE*** **INC.** or another consultant to inspect the abandoned wells and perform a review of well decommission documentation. Also contact the CDOG to perform a "Construction Site Review" of all seven oil wells on the subject property to determine whether the wells have been abandoned to current standards.

TOTAL ESTIMATED COST TO COMPLETE
SUGGESTED NEXT STEP ACTION† : $1,500 - $3,000 (file review only)

CONCERN # 2		IDENTIFIED CONCERN APPEARS TO BE A MINOR ENVIRONMENTAL CONCERN	
ID #	**SECTION #**	**PAGE #**	**COMMENTS**
OP08	3.1	3-2	Photograph of a discarded 55-gallon drum with unknown contents.
EC02	5.10	5-4	Observation of a discarded 55-gallon drum with unknown contents.
DESCRIPTION OF CONCERN: During the site reconnaissance, an unlabeled 55-drum which was not situated near any of the oil production areas was observed. The contents of the drum are not known. It is also unknown whether staining is present around the drum as the dense vegetation around the drum prevented an inspection for surface conditions. The contents of the drum may potentially be hazardous materials or wastes.			
ACTION SUGGESTED: Contact ***PHASE ONE*** **INC.** or another consultant to profile the unidentified substance and facilitate its disposal in accordance with regulatory agency guidelines. If soil staining is noted around and/or beneath the container and the contents of the drum are determined to be hazardous, soil sampling should be performed to determine if impacts to the near surface soils have occurred.			
TOTAL ESTIMATED COST TO COMPLETE SUGGESTED NEXT STEP ACTION† : $1,500 - $3,000			

CONCERN # 3		IDENTIFIED CONCERN APPEARS TO BE A MINOR ENVIRONMENTAL CONCERN	
ID #	**SECTION #**	**PAGE #**	**COMMENTS**
EC01	5.10	5-4	Identification of elevated levels of methane on-site associated with oil production activities.
RE02	4.5	4-4	Observation of an off-site oil well directly adjacent to the east of the on-site oil exploration field.
DESCRIPTION OF CONCERN: A soil-gas survey performed by ***PHASE ONE*** **INC.** revealed the presence of elevated levels of methane in the vicinity of the oil exploration field on-site. The elevated levels of methane may be associated with oil exploration activities on-site and in nearby properties. Methane generated at depth has been known to seep to the surface. Also, in certain concentrations and closed areas, methane can be explosive.			
ACTION SUGGESTED: Contact ***PHASE ONE*** **INC.** or a another consultant to conduct a methane survey of the housing pads when they are installed. Based on the results, methane mitigation measures, by means of the use of moisture barriers and/or sealed utility conduits, and other mitigation measures may have to be implemented.			
TOTAL ESTIMATED COST TO COMPLETE SUGGESTED NEXT STEP ACTION† : $25,000 - $30,000			

†Note: The estimated cost to complete the next-step action is based on ***PHASE ONE*** **INC.**'s professional opinion as based on our experience with similar problems under similar circumstances. The estimated cost given above is only meant to give the client a *ballpark* estimate, not an exact dollar figure for the cost to complete the next-step action. When requested, ***PHASE ONE*** **INC.** can help the client to negotiate and control project costs with qualified subcontractors through our Program Management Department, and help fix the costs by obtaining quotes.

7.2 POTENTIAL OR POSSIBLE ENVIRONMENTAL CONDITIONS

This section contains descriptions of potential, possible, or historical recognized environmental conditions that have been identified in the ***PHASE ONE*** **INC.** Phase I Environmental Site Assessment

for the subject site. ***PHASE ONE*** **INC.** classifies an issue as a potential or possible environmental condition (as opposed to a major, medium, or minor concern) when (1) it involves *de minimis* issues that appear to pose no immediate or imminent threat to the subject site, but which over time (with the occurrence of groundwater movement, demolition, disturbance, etc.) may come to pose an actual or present environmental concern for the subject site and/or when (2) it involves areas that currently appear to have a negligible impact on the subject property and which do not, therefore, require additional investigation at this time, but of which ***PHASE ONE*** **INC.** feels the client should be made aware. ***PHASE ONE*** **INC.** classifies a historical recognized condition as an issue which was considered a recognized environmental condition in the past, but is no longer considered a recognized environmental condition as a result of prior investigation and/or mitigation.

Each identified issue receives its own table, and that table will collect together the particular findings from the body of the report that have been used to support ***PHASE ONE*** **INC.**'s conclusion as to the presence of that issue. For the benefit of the reader, the table also contains the ID, page, and section numbers of the findings cited in support of the condition.

CONDITION # 4		**IDENTIFIED CONDITION APPEARS TO BE A POTENTIAL, POSSIBLE, OR HISTORICAL ENVIRONMENTAL CONDITION**	
ID #	**SECTION #**	**PAGE #**	**COMMENTS**
EC01	5.10	5-4	Observation of oil exploration activities on-site.
DESCRIPTION OF CONDITION: Oil exploration activities is ongoing at the southern third of the subject site. The concern exists that undiscovered stained soil and/or underground structures may be encountered during redevelopment activities at the site.			
ACTION SUGGESTED: Caution should be exercised during grading in the vicinity of the southern third of the subject site, where oil exploration activities are currently taking place. If any subsurface structures, or if environmental conditions such as staining are noted, stop work immediately and contact ***PHASE ONE*** **INC.** or another consultant to inspect the area and determine if further work is required.			

SECTION 8.0

LIMITATIONS

To achieve the study objectives stated in this report, we were required to base ***PHASE ONE*** **INC.**'s conclusions and recommendations on the best information available during the period the investigation was conducted and within the limits prescribed by ***PHASE ONE*** **INC.**'s client in the contract/authorization agreement and standard terms and conditions.

PHASE ONE **INC.**'s professional services were performed using that degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar fields. The findings were mainly based upon examination of historic records, maps, aerial photographs, and governmental agencies lists. The hazardous waste site lists represented in this report represent only a search of the specific government records as listed above. It should be noted that governmental agencies often do not list all sites with environmental contamination; the lists could be inaccurate and/or incomplete. Recommendations are based on the historic land use of the subject property, as well as features noted during the site walk. The absence of potential gross contamination sources, historic or present, does not necessarily imply that the subject property is free of any contamination. This report only represents a "due diligence" effort as to the integrity of the subject property. No other warranty or guarantee, expressed or implied, is made as to the professional conclusions or recommendations contained in this report. The limitations contained within this report supersede all other contracts or scopes of work, implied or otherwise, except those stated or acknowledged herewith.

This report is not a legal opinion. It does not necessarily comply with requirements defined in any environmental law such as the "innocent landowner defense" or "due diligence inquiry." Only legal counsel retained by the client is competent to determine the legal implications of any information, conclusions, or recommendations in this report. The compliance status, discussed in Section 5.0, is not intended for use as a guide to compliance for the present owner. Its intended use is to identify environmental impairments to the subject property and is not to be used as a guide to the legal compliance to regulations of any kind.

The findings, conclusions, recommendations, and professional opinions contained in this report have been prepared by the staff of ***PHASE ONE*** **INC.** , in accordance with generally accepted professional practices. All cost estimates in Section 7.0, are purely estimates only, and may not represent the actual costs. Without further investigative assessment, exact, actual costs cannot be fixed. The costs associated with ***PHASE ONE*** **INC.**'s recommendations are for budgetary purposes only.

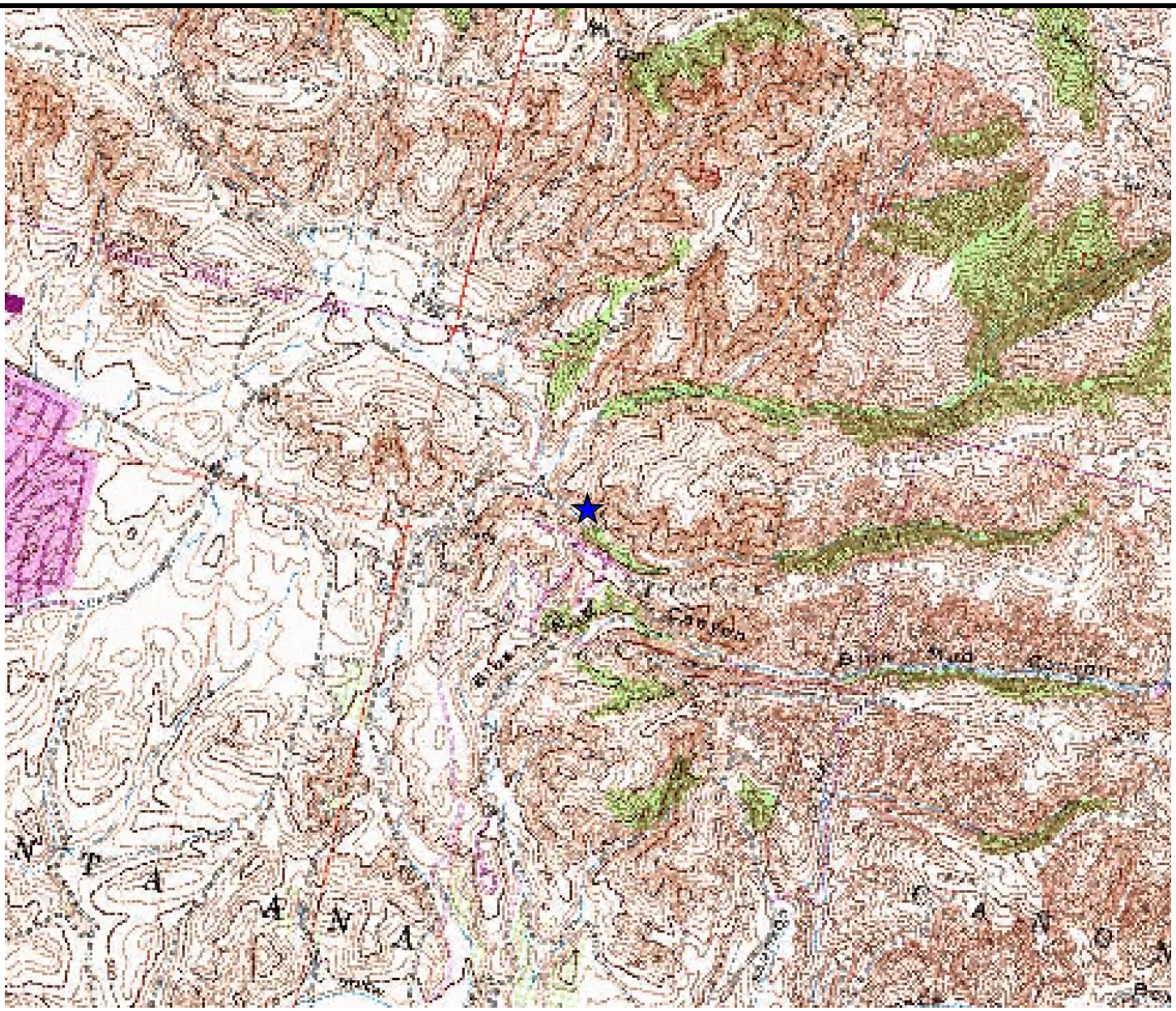
This report does not address, in any way, septic systems, leach fields, septic tanks, or related health hazards.

All asbestos, lead, or any other sampling is sampled in a good faith effort by ***PHASE ONE*** **INC.** assessors. Sample results should not be construed as conclusive and binding in any way. All sampling conducted is only for the purposes of general screening and does not imply that all materials, locations, or hazardous materials have been identified nor was the sampling intended to identify every instance of the materials sampled. No interpretation of the sample results is made or implied. ***PHASE ONE*** **INC.** only relays the information supplied by the laboratory conducting the analysis.

If any controversy or claim arises out of or relates to this contract, or breach thereof, and if said dispute cannot be settled through negotiation, the parties shall submit to binding arbitration in accordance with the Construction Industry Arbitration Rules of the AAA, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

SECTION 9.0

FIGURES

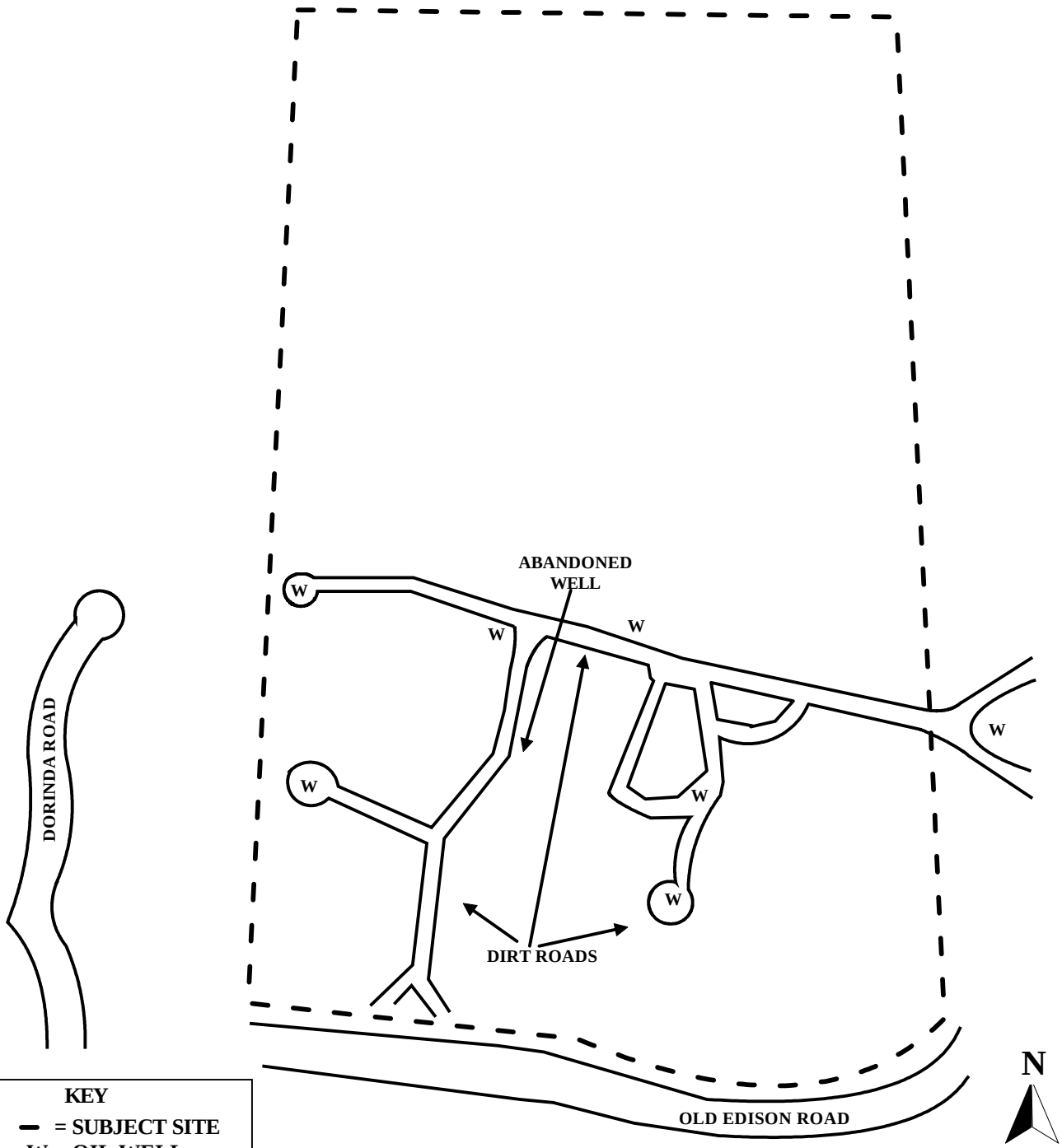


SITE LOCATION MAP

U.S. Geological Survey. Yorba Linda Quadrangle
7.5 Minute Series, Approximate Scale: 1: 33000

N

PHASE ONE INC.	**APNS 351-031-04, -05, AND -17 YORBA LINDA, CA 92887**	FIGURE: 1 JOB: 6482 DATE: 6/19/2006



KEY

= SUBJECT SITE

W = OIL WELL

***PHASE ONE* INC.**

ENVIRONMENTAL ASSESSMENT SPECIALISTS

APN 351-031-04, -05, AND -17
YORBA LINDA, CA 92886

DRAWN: ML	APPRVD:	DATE: 05/30/06

SITE PLAN

FIGURE:	2
JOB:	6482
DATE:	05/30/06

SECTION 10.0

APPENDICES

APPENDIX A

SITE PHOTOGRAPHS


SANTA ANA CANYON DEVELOPMENT
AMOS TRAVIS LEASE
WELL NO. 1
FOR EMERGENCIES
(714) 299-8000
(949) 699-0303
NO SMOKING
NO TRESPASSING

OP01

OP02

OP03

OP04

OP05

OP06

OP07

OP08

OP09

APPENDIX B

SUMMARY OF AGENCY CONTACTS

Appendix B
Regulatory Agencies for Orange County (unincorporated)
Orange County, California

Aerial Photographs

Agency:	**U.C. Irvine**		Phone:	**(949)856-6836**	Fax:	
Dept:	**Main Library**		Phone:	**(949)824-4976**	Fax:	
Address:	**Campus Drive**		Contact:	**Reference Desk**		
	Government Publications, 1st Floor, Main Library		Days:	**M-TH**	Hours:	**07:30-11:00**
City:	**Irvine**		Procedure:	**Go in. Ad'l hrs.: FR 7:30-9; SA: 10-9; SU: 10-11**		
State:	**Cali** Zip: **92715**		Years:	**1964, 1974, 1986, 1988**		
Cross Street:	**Bridge Road**	Last Updated **5/21/2004**	Cost:		Per:	
Other:	**CA Topos from 1960s. OC Aerials: 1964, 74, 85, 88. Sanborns on microfilm from 1900s to 1990s. No Directories. May cover edge of LA county.**					

Building Permits/Plans (Original Planning)

Agency:	**Orange County Building and Development Services**		Phone:	**(949)472-7954**	Fax:	**(949)586-6740**
Dept:	**Laguna Hills Office (residential only)**		Phone:	**(949)472-7963**	Fax:	
Address:	**22921 Triton Way**		Contact:	**Merideth Rosenbluth**		
	Suite 125		Days:	**M-F**	Hours:	**07:30-04:30**
City:	**Laguna Hills**		Procedure:	**Call w/ address, then go in.**		
State:	**Cali** Zip: **92653**		Years:			
Cross Street:	**Moulton & Lake Forest**	Last Updated **6/6/2001**	Cost:		Per:	
Other:	**RESIDENTIAL permits south of Jamboree only, commercial only during construction, then forwarded to Santa Ana Office**					

Building Permits/Plans (Original Planning)

Agency:	**Orange County Building and Development Services**		Phone:	**(949)472-7954**	Fax:	**(949)586-6740**
Dept:	**Santa Ana Office (commercial permits)**		Phone:	**(714)834-2626**	Fax:	
Address:	**22921 Triton Way**		Contact:	**Lori**		
	300 N. FLOWER, Santa Ana, CA 92701		Days:	**M-TH**	Hours:	**08:00-03:30**
City:	**Laguna Hills**		Procedure:	**Call Lori for appt or go in on first come basis**		
State:	**Cali** Zip: **92653**		Years:			
Cross Street:	**Moulton & Lake Forest**	Last Updated **6/6/2001**	Cost:		Per:	
Other:	**Commercial permits greater than 3 years old. Cross Street: Santa Ana Blvd.**					

Environmental Health/Ecology/Quality

Agency:	**Orange County Health Care Agency**		Phone:	**(714)667-3600**	Fax:	**(714)835-9312**
Dept:	**Environmental Health**		Phone:	**(714)834-3548**	Fax:	
Address:	**511 N Sycamore**		Contact:	**April Alvarez**		
	1241 E. Dyer Road, Ste 120, Santa Ana 92702		Days:	**M-F**	Hours:	**08:00-05:00**
City:	**Santa Ana**		Procedure:	**Fax their form with full address. Will mail.**		
State:	**Cali** Zip: **92705**		Years:			
Cross Street:	**Santa Ana Boulevard**	Last Updated **5/3/2006**	Cost:		Per:	**for copies and postage**
Other:	**Cannot search without complete address (aka no tract #)**					

Fire Department (Regional)

Agency:	**Orange County Fire Authority**		Phone:	**(714)573-6000**	Fax:	
Dept:	**Clerk of the Authority**		Phone:	**(714)573-6040**	Fax:	
Address:	**One Fire Authority Road**		Contact:	**Records Review**		
	P.O. Box 57115, Irvine, CA 92619		Days:	**M-F**	Hours:	**08:00-05:00**
City:	**Irvine**		Procedure:	**Fax their form.**		
State:	**Cali** Zip: **92602**		Years:			
Cross Street:		Last Updated **5/21/2004**	Cost:	**0**	Per:	**Review, costs for copies.**
Other:	**Information about the installation and removal of UST, fire code violations, and permit issuances. Can search by street addresses only.**					

Appendix B
Regulatory Agencies for Orange County (unincorporated)
Orange County, California

Flood Zone

Agency:	**Federal Emergency Management Agency**	Phone:	**(800)358-9616**	Fax:	**(800)358-9620**
Dept:	**FEMA Q3 Data**	Phone:		Fax:	
Address:	**500 C Street, SW**	Contact:			
		Days:		Hours:	
City:	**Washington**	Procedure:			
State:	**Cali** Zip: **20472**	Years:			
Cross Street:	Last Updated **6/9/2006**	Cost:	Per:		
Other:	**FEMA flood data available digitally; view on arc explorer in house or see ERS report.**				

Groundwater/Hydrogeology

Agency:	**Orange County Water District**	Phone:	**(714)378-3200**	Fax:	**(714)373-3373**
Dept:	**Water Quality Department**	Phone:	**(714)378-3209**	Fax:	
Address:	**10500 Ellis Avenue**	Contact:	**Nara Yamashika**		
	10500 Ellis Ave P.O. Box 8300	Days:	**M-F**	Hours:	**07:30-04:30**
City:	**Fountain Valley**	Procedure:	**View online**		
State:	**Cali** Zip: **92708**	Years:			
Cross Street:	**Ward & Brookhurst** Last Updated **5/21/2004**	Cost:	**10** Per: **Site**		
Other:	**Water Quality; GW info for areas north of El Toro "Y" except Brea & LA Habra, can call for copy pf groundwater.**				

Oil and Gas Wells

Agency:	**California State Fire Marshal**	Phone:	**(562)497-9100**	Fax:	**(562)497-9104**
Dept:	**Pipeline Division (Sacramento Office)**	Phone:	**(916)445-8477**	Fax:	**(916)445-8526**
Address:	**3950 Paramount Blvd #210**	Contact:	**Lisa Dowdy - Sacramento Office**		
	PO Box 944246, Sacramento 94244	Days:		Hours:	
City:	**Lakewood**	Procedure:	**Check county coverage. Fax request**		
State:	**Cali** Zip: **90712**	Years:			
Cross Street:	Last Updated **3/13/2006**	Cost:	Per:		
Other:	**Website and printout in reg office has county coverage list. Check it first! Regional petroleum pipelines (liquids only). Fax address and Thomas Guide page and grid (or other map) to Sacramento office, Lisa will respond by email**				

Oil and Gas Wells

Agency:	**California Div. of Oil & Gas - District #1**	Phone:	**(714)816-6847**	Fax:	**(714)816-6853**
Dept:	**District #1**	Phone:	**(714)816-7826**	Fax:	
Address:	**5816 Corporate Avenue, Suite 200**	Contact:	**Kordelia Jenkins (Bertha Watson, assistant)**		
		Days:	**M-F**	Hours:	**08:00-05:00**
City:	**Cypress**	Procedure:	**View maps online. Call for other information.**		
State:	**Cali** Zip: **90630**	Years:	**1986-2004**		
Cross Street:	**Valley View** Last Updated **6/9/2006**	Cost:	Per:		
Other:	**Supply Oil & Gas Field and Wildcat Maps for LA,SD,Orange,Riverside,SB,& Imperial counties. Records search, contact Kordelia for appointment.**				

Sanborn Fire Insurance Maps/Historical Maps

Agency:	**Los Angeles Public Library**	Phone:	**(213)228-7000**	Fax:	**(213)228-7069**
Dept:	**History/Geneology Department**	Phone:	**(213)228-7400**	Fax:	**(213)228-7409**
Address:	**630 West 5th Street**	Contact:	**History / Geneology**		
	Lower Level 4	Days:	**M-TH**	Hours:	**10:00-08:00**
City:	**Los Angeles**	Procedure:	**Go in. View sanborns online with library card**		
State:	**Cali** Zip: **90071**	Years:			
Cross Street:	**Flower & Grand** Last Updated **6/9/2006**	Cost:	Per:		
Other:	**Directories and Sanborns. Add'l. hrs.: Fr-St 10-6, SU 1-5. Can view Sanborns for CA online w/library card. Rev. Dir. Database also online under "city directories". Check for city coverage.**				

Appendix B
Regulatory Agencies for Orange County (unincorporated)
Orange County, California

Sanitation/Sewer Permits/IWP/NPDES

Agency:	**Orange County Sanitation District**		Phone:	**(714)962-2411**	Fax:	**(714)962-6957**
Dept:	**Source Control**		Phone:	**(714)593-7413**	Fax:	
Address:	**10844 Ellis Avenue**		Contact:	**Maria Becerra**		
			Days:	**TU-TH**	Hours:	**7:30-5:30**
City:	**Fountain Valley**		Procedure:	**Fax request; addt'l hrs Fri 7:30-4:30**		
State:	**Cali** Zip: **92708**		Years:			
Cross Street:	**405 Freeway**	Last Updated **4/17/2006**	Cost:		Per:	
Other:	**Jurisdiction is North of the El Toro "Y" at Interstate 405/Interstate 5 intersection. Records kept by site addr & name ONLY.**					

Water Quality (RWQCB)

Agency:	**California RWQCB - Region 8**		Phone:	**(951)782-4130**	Fax:	**(951)478-1628**
Dept:	**SLIC & LUST Record Review**		Phone:	**(951)782-4499**	Fax:	**(951)781-6288**
Address:	**3737 Main Street, Ste 500**		Contact:	**File Review**		
			Days:	**M-F**	Hours:	**08:00-05:00**
City:	**Riverside**		Procedure:	**Call with EXACT address, fax if 3+, or geotracker**		
State:	**Cali** Zip: **92501**		Years:			
Cross Street:	**University & Market**	Last Updated **1/20/2005**	Cost:		Per:	
Other:	**Information for UST/AST, spills, LUST, clean-ups, enforsement, IWP/NPDES and violations. Must have specific address.Can view UST/LUST info online.**					

APPENDIX C

COPIES OF REGULATORY RECORDS

WELL RECORDS

AMOS-TRAVIS #1

FORM 105

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS RECEIVED MAR 1 1966 INGLEWOOD, CALIFORNIA

D

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

Petrominerals Corp.

Beverly Hills, Calif. 17 February 1966

DIVISION OF OIL AND GAS

059-05528

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. Amos Travis (#1) Sec. 19, T. 3 S, R. 8 W, S B. & M., Esperanza Field, Orange County.

Legal description of mineral-right lease, consisting of 67.70 acres, is as follows: see attached description. (Attach map or plat to scale)

Do mineral and surface leases coincide? Yes X No ____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: 2150 feet East (Direction) along section line and 2360 feet South (Direction) at right angles to said line from the Northwest corner of section (w) 19

T 3 S - R. 8 W S B M

Elevation of ground above sea level 773 feet Sea Level datum.

All depth measurements taken from top of K. B. (Derrick Floor, Rotary Table or Kelly Bushing) which is 10.5 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
8 5/8	20#	R 2	Surface	200'	200' to surface
5 1/2	14#	J55 R2	Surface	2500'	2500' 100 sacks
4½ liner	14#	H40	2500'	2800'	hang liner

Intended zone(s) of completion: Kreamer 2000-2900 (Depth, top and bottom) Estimated total depth 2906

MAP	MAP BOOK	CARDS	BOND (Name)	FORMS 114	FORMS 121
W1-4	Ax	MJ	335 Lyppoc 2-18-66	MJ	MJ

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address 9460 Wilshire/Suite 729
Beverly Hills, California

Telephone Number CR 8-1181

R. R. Greenbaum, d/b/a CALIFORNIA-TIME PETROLEUM CO. (Name of Operator)

By (Grant W. Corby)

Type of Organization Individual (Corporation, Partnership, Individual, etc.)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF PROPERTY AND WELL TRANSFER

Field or County		District
Esperanza		District 1 (Cypress, California)
Former owner		Date
Hillcrest Beverly Oil Corp.	H4325	March 15, 2000

Well Name	API Number	Section Township Range
"Amos-Travis" 1	059-05528	Sec. 19-3S-8W
"Amos-Travis" 2	059-05529	Sec. 19-3S-8W
"Amos-Travis" 3	059-20318	Sec. 19-3S-8W
"Amos-Travis" 4	059-20334	Sec. 19-3S-8W
"Reeves" 1	059-05531	Sec. 19-3S-8W
"Reeves" 2	059-05532	Sec. 19-3S-8W
"Reeves" 3	059-20333	Sec. 19-3S-8W

Description of the land upon which the well (s) is (are) located: See Above

Date of transfer	New owner		Type of organization
March 3, 2000		Santa Ana Canyon Dev Corp S1000	Corp.
	Address:	16531 Bolsa Chica St.. # 301 Huntington Beach, CA 92649	Telephone (714) 377-9234
Reported by	OG30A received 2/1/2000 signed by both parties		
Confirmed by	Same		
New operator new status PA	Designation of Agent	Mel Wright	
Old operator new status PA	Remarks	See Santa Ana Canyon Dev Corp for details.	

OPERATOR STATUS ABBREVIATIONS
PA – Producing Active
NPA- No potential, Active
PI- Potential Inactive
NPI-No potential, Inactive
Ab-Abandoned or No More Wells

Deputy Supervisor: R. K. Baker

Signature: John Jepson, Enhanced Recovery Engineer

cc: Update; Envir Dsk; File
Conservation Committee
Harold W. Bertholf, Inc.
Orange County Assessor

FORM AND RECORD CHECK LIST

Form or Record	Initials	Date	Form or Record	Initials	Date
Form OGD121	N/A		Map and Book W1-4	gs	3-22-00
Operator Card	jeph	3-15-2000	Notice cancellations	N/A	
Well Records	jeph	3-15-2000	Bond Status	jeph	3-22-00
Log Records	jeph	3-15-2000	EDP	jeph	3-15-2000
Production Repts	N/A		Data Base	jeph	3-15-2000

Ind. Bond Lot 51995 Amos-Travis 3

OGD156 12-2-98 Cypress

WELL RECORDS

AMOS-TRAVIS #2

FORM 100

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

WELL SUMMARY REPORT

SUBMIT IN DUPLICATE

Operator CALIFORNIA-TIME PETROLEUM COMPANY Well No. "AMOS TRAVIS" #2

Sec. 19, T. 3S, R. 8W, S.B. B. & M. ESPERANZA Field ORANGE County.

Location 1700' East along section line and 2280' South at right angles to said line from the N.W. corner Sec.19 (Give location from property or section corner, or street center lines) Elevation of ground above sea level 762 feet.

All depth measurements taken from top of KB (Derrick Floor, Rotary Table or Kelly Bushing) which is 9.5 feet above ground.

In compliance with Sec. 3215, of the Public Resources Code, the information given herewith is a complete and correct record of the present condition of the well and all work done thereon, so far as can be determined from all available records.

Date 11 August 1966

Signed (Grant W. Corby)
(Engineer or Geologist) (Superintendent) Title Engineer (President, Secretary or Agent)

Commenced drilling July 14, 1966

Completed drilling July 30, 1966

Total depth (2690) Plugged depth --

Junk 2699 - See history

GEOLOGICAL MARKERS	DEPTH
Kreamer	2450'

Geologic age at total depth: Miocene

Commenced producing (Date) Flowing/~~XXXXXXXXX~~g (Cross out unnecessary words) by head

Name of producing zone Kreamer

	Clean Oil bbl. per day	Gravity Clean Oil	Per Cent Water including emulsion	Gas Mcf. per day	Tubing Pressure	Casing Pressure
Initial production	40	28	02	—		
Production after 15 ~~XX~~ days	35	28	02	—		

CASING RECORD (Present Hole)

Size of Casing (A. P. I.)	Depth of Shoe	Top of Casing	Weight of Casing	New or Second Hand	Seamless or Lapweld	Grade of Casing	Size of Hole Drilled	Number of Sacks of Cement	Depth of Cementing if through perforations
5/8	203	surface	20#	new	seamless	J55	12¼	60	
1/2	2455	surface	14#	new	seamless	J55	7 7/8	100	

PERFORATED CASING
(Size, top, bottom, perforated intervals, size and spacing of perforation and method.)

250' perforated liner 4½" bottom 2690 top 2420
100 mesh. 14# seamless H40.

DIVISION OF OIL AND GAS
RECEIVED
AUG 16 1966
INGLEWOOD, CALIFORNIA

Was the well directionally drilled? No Electrical Log Depths None (Attach Copy of Log)

146-705 7-64 15M △ OSP

Form 103

SUBMIT IN DUPLICATE

26535-705 7-64 25M △ OSP

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator CALIFORNIA-TIME PETROLEUM COMPANY Field ESPERANZA

Well No. Amos Travis #2, Sec. 19, T. 3S, R. 8 W, S.B. B. & M.

Date 11 August, 1966 Signed Grant W. Corby (Grant W. Corby)

9460 Wilshire Blvd. 278-1181 Title Engineer
Beverly Hills, Calif. (Telephone Number) (President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form to report a full account of all important operations during the drilling and testing of the well or during re-drilling, altering of casing, plugging, or abandonment with the dates thereof. Be sure to include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, shooting and initial production data.

Date	
7/14-17	Rigging up
7/18	Drilled rat hole and 153' surface hole 12¼".
7/19	Drilled 210' surface ran 203' 8 5/8". cemented with 60 sacks cement 2% CaCl. Cement to surface drilled to 665.
7/20	Drilled to 1290.
7/21	Drilled to 1771. Survey 15° 2½ degrees.
7/22	Drilled to 2175.
7/23	Drilled to 2455. Ran 5½" casing 2452. cemented with 100 sacks cement with 2% CaCl. Standing cemented.
7/26	Picked up 2 7/8 drill pipe to 2350. Halliburton Tool. open 1 hour W.S.O. OK.
7/27	Displaced mud with oil. Drilling 2665.
7/28-29	2460 underreaming to 7". 2460-2699. Picked up 4½ perforated 2455 to 2690.
7/30	Well flowing by heads through casing. Lay down drill pipe.
8/10	Running tubing.

DIVISION OF OIL AND GAS
RECEIVED
AUG 12 1966
INGLEWOOD, CALIFORNIA

Form 105

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS
RECEIVED
MAR 1 1966
059-05529
INGLEWOOD, CALIFORNIA

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

FeTrominerals Corp

Beverly Hills, Calif. 17 February 1966

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. Amos Travis #2, Sec. 19, T. 3 S, R. 8 W, S B. & M., Esperanza Field, Orange County.

Legal description of mineral-right lease, consisting of 67.70 acres, is as follows: see attached (Attach map or plat to scale)

Do mineral and surface leases coincide? Yes X No If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: 1700 feet East (Direction) along section line and 2220 feet South (Direction)

at right angles to said line from the Northwest corner of section (NW) 19

T 3 S, R 8 W., SBM

Elevation of ground above sea level 762 feet sea level datum.

All depth measurements taken from top of K B (Derrick Floor, Rotary Table or Kelly Bushing) which is 10.5 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
8 5/8	20#	J55 R2	surface	200'	200' to surface
5 1/2	14#	J55 R2	surface	2600 ±	2600 100 sacks
4 1/2	14#	H 40	2600-2900	2900	hang liner

Intended zone(s) of completion: Kreamer (Name) 2600-2900 (Depth, top and bottom) Estimated total depth 2900

MAP	BOOK	PAGE	BOND	FORMS 114	FORMS 121
WI-4	Ox	WJ	23564 FIBE 2-16-66	WJ	WJ

It is understood that if changes in this plan become necessary we are to notify you immediately.

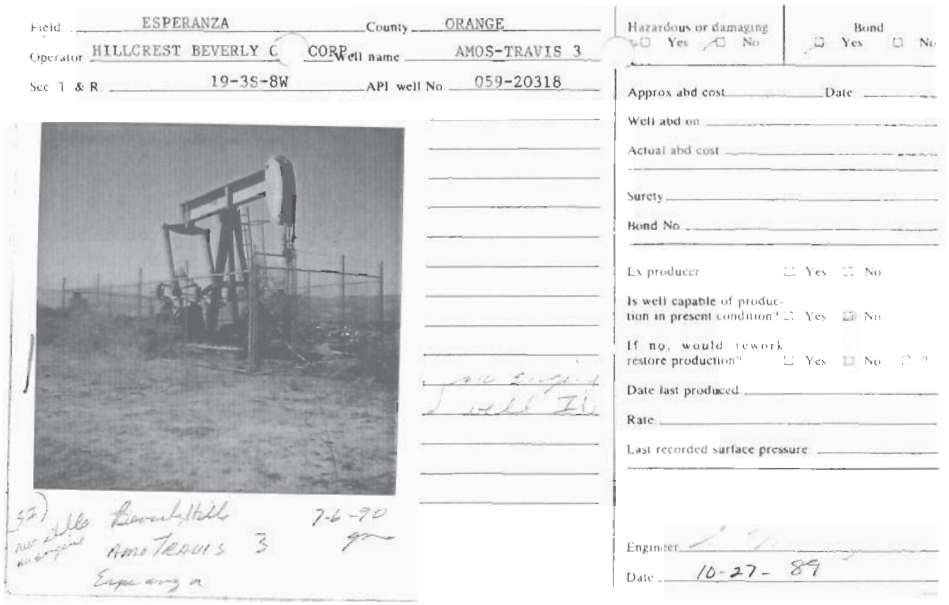
Address 9460 Wilshire Blvd./suite 729
Beverly Hills, California

Telephone Number CR 8-1181

R. R. Greenbaum, d/b/a CALIFORNIA-TIME PETROLEUM CO. (Name of Operator)

By Grant W. Corby (Grant W. Corby)

Type of Organization Individual (Corporation, Partnership, Individual, etc.)



WELL RECORDS

AMOS-TRAVIS #3

*** EOI ***

PROCESSED 07/96

CALIFORNIA DIVISION OF OIL AND GAS
WELL INFORMATION LIST

DISTRICT: 1 | FIELD CODE: 240 | FIELD: ESPERANZA | AREA CODE: 00 | AREA: ANY AREA

API NO.: 05920333 | LEASE NAME: REEVES | WELL NO: 3 | SEC 19 | T - R 03S 08W | B&M SB | WELL STAT: A

OPERATOR NAME AND ADDRESS
HILLCREST BEVRLY OIL CORP
14711 BENTLEY CIRCLE
TUSTIN CA 92780

OPER CO H4325 | OPER STAT: A | REPORTING METHOD: 50 HARD COPY (MONTHLY) | GENERAL LOCATION

COUNTY CODE: 30 | COUNTY NAME ORANGE | BASIN 0 | REGION 0

POOL CODE:00 | SYSTEM ENTRY DATE: 04/76 | DEPTH 00000

REMARKS: 1-
2- TRAN FR P2900 08-15-87
3-

POOL NAME: NO POOL BREAKDOWN

WELL TYPE	DATE	PROD/INJ STATUS	OIL/COND BBLS	WATER BBLS	PROD DAYS	GAS/PROD MCF	GRAV OIL	CASING PSI	TUBING PSI	BTU M-O	WATER DISP	WATER/STEAM INJ-BBLS	INJ DAYS	GAS/AIR INJ-MCF	INJ PSI	SOURCE WATER	KIND WATER
OG	01/96	00	6	11	31	0	26.8			5	5						
OG	02/96	00	6	11	28	0	26.8			5	5						
OG	03/96	00	12	6	31	0	26.7			5	5						
OG	04/96	00	12	6	30	0	26.8			5	5						
OG	05/96	00	10	12	31	0	26.8			5	5						
OG	06/96	00	8	9	30	0	26.8			5	5						
OG	07/96	00	11	6	31	0	26.2			5	5						
OG	08/96	00	12	12	31	0	27.7			5	5						
TOTAL			77	73													

[redacted]

PROCESSED 07/96

CALIFORNIA D[illegible] OF OIL AND GAS
WELL [illegible]ATION LIST

PAGE 3,930
CNS1014

DISTRICT: 1 | FIELD CODE: 240 | FIELD: ESPERANZA | AR[illegible]ODE: 00 | AREA: ANY AREA

API NO.: 05905528 | LEASE NAME: AMOS-TRAVIS | WELL NO: 1 | S[illegible] | T - R [illegible]3E [illegible]W | B&M SB | WELL STAT: A

OPERATOR NAME AND ADDRESS
HILLCREST BEVRLY OIL CORP
14711 BENTLEY CIRCLE
TUSTIN CA 92780

OPER CO H4325 | OPER STAT: A | REPORTING METHOD: 50 HARD COPY (MONTHLY) | GENERAL LOCA[illegible]ON

COUNTY CODE: 30 | COUNTY NAME ORANGE | BASIN 0 | REGION 0

POOL CODE:00 | SYSTEM ENTRY DATE: 04/76 | DEPTH 00000

REMARKS: 1-
2- TRAN FR P2900 08-15-87
3-

[illegible]OL NAME: NO POOL BREAKDOWN

WELL TYPE	DATE	PROD/INJ STATUS	OIL/COND BBLS	WATER BBLS	PROD DAYS	GAS/PROD MCF	GRAV [illegible]	CA[illegible]ING PSI	TUBING PSI	BTU M-O	WATER DISP	WATER/STEAM INJ-BBLS	INJ DAYS	GAS/AIR INJ-MCF	INJ PSI	SOURCE WATER	KIND WATER
OG	01/96	00	73	0	31	0	[illegible].8			5	5						
OG	02/96	00	73	0	28		26.8			5	5						
OG	03/96	00	90	0	31		26.7			5	5						
OG	04/96	00	159	0	30	[illegible]	26.8			5	5						
OG	05/96	00	117	0	31	0	[illegible]8			5	5						
OG	06/96	00	47	0	30	0	[illegible].8			5	5						
	07/96	00	159	0	31	[illegible]	27.8			5	5						
OG	08/96	00	177		31		26.7			5	5						
TOTAL			895														

*** A01 ***

PROCESSED 07/96

CALIFORNIA DIVISION OF OIL AND GAS
WELL INFORMATION LIST

PAGE 3,931
CNS1014

DISTRICT: 1 | FIELD CODE: 240 | FIELD: ESPERANZA | AREA CODE: 00 | AREA: ANY AREA

API NO.: 85985529 | LEASE NAME: AMOS-TRAVIS | WELL NO: 2 | SEC 19 | T - R 03S 08W | B&M SB | WELL STAT: A

OPERATOR NAME AND ADDRESS
HILLCREST BEVRLY OIL CORP
14711 BENTLEY CIRCLE
TUSTIN CA 92780

OPER CO H4325 | OPER STAT: A | REPORTING METHOD: 50 HARD COPY (MONTHLY) | GENERAL LOCATION

COUNTY CODE: 30 | COUNTY NAME ORANGE | BASIN 0 | REGION 0

POOL CODE:00 | SYSTEM ENTRY DATE: 04/76 | DEPTH 00000

REMARKS: 1-
2- TRAN FR P2900 08-15-87
3-

POOL NAME: NO POOL BREAKDOWN

WELL TYPE	DATE	PROD/INJ STATUS	OIL/COND BBLS	WATER BBLS	PROD DAYS	GAS/PROD MCF	GRAV OIL	CASING PSI	TUBING PSI	BTU M-O	WATER DISP	WATER/STEAM INJ-BBLS	INJ DAYS	GAS/AIR INJ-MCF	INJ PSI	SOURCE WATER	KIND WATER
OG	01/96	00	73	0	31	0	26.8			5	5						
OG	02/96	00	73	0	28	0	26.8			5	5						
OG	03/96	00	89	0	31	0	26.7			5	5						
OG	04/96	00	158	0	30	0	26.8			5	5						
OG	05/96	00	117	0	31	0	26.8			5	5						
OG	06/96	00	47	0	30	0	26.8			5	5						
OG	07/96	00	159	0	31	0	27.8			5	5						
OG	08/96	00	177	0	31	0	26.7			5	5						
TOTAL			893														

*** A01 ***

CALIFORNIA DIVISION OF OIL AND GAS
WELL INFORMATION LIST

PAGE 3,932
CNS1014

FIELD CODE: 240 | FIELD: ESPERANZA | AREA CODE: 00 | AREA: ANY AREA

API 8592[illegible] | LEASE NAME: AMOS-TRAVIS | WELL NO: 3 | SEC 19 | T - R 03S 08W | B&M SB | WELL STAT: A

OPERATOR NAME AND ADDRESS
HILLCREST BEVRLY OIL CORP
14711 BENTLEY CIRCLE
TUSTIN CA 92780

OPER CO H4325 | OPER STAT: A | REPORTING METHOD: 50 HARD COPY (MONTHLY) | GENERAL LOCATION

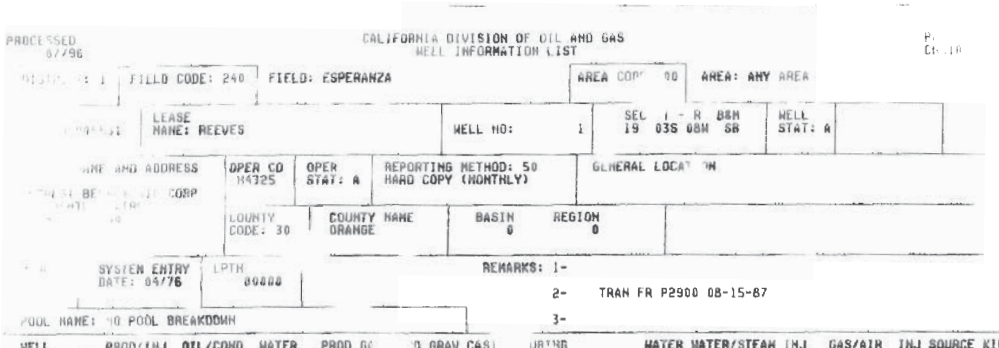
COUNTY CODE: 30 | COUNTY NAME ORANGE | BASIN 0 | REGION 0

POOL CODE:00 | SYSTEM ENTRY DATE: 04/76 | DEPTH 00000

REMARKS: 1-
2- TRAN FR P2900 08-15-87
3-

POOL NAME: NO POOL BREAKDOWN

WELL TYPE	DATE	PROD/INJ STATUS	OIL/COND BBLS	WATER BBLS	PROD DAYS	GAS/PROD MCF	GRAV OIL	CASING PSI	TUBING PSI	BTU M-O	WATER DISP	WATER/STEAM INJ-BBLS	INJ DAYS	GAS/AIR INJ-MCF	INJ PSI	SOURCE WATER	KIND WATER
OG	01/96	06	0	0	00	0				0	0						
OG	02/96	06	0	0	00	0				0	0						
OG	03/96	06	0	0	00	0				0	0						
OG	04/96	06	0	0	00	0				0	0						
OG	05/96	06	0	0	00	0				0	0						
OG	06/96	06	0	0	00	0				0	0						
OG	07/96	06	0	0	00	0				0	0						
OG	08/96	06	0	0	00	0				0	0						
TOTAL																	



PROCESSED 07/96

CALIFORNIA DIVISION OF OIL AND GAS
WELL INFORMATION LIST

DISTRICT: 1 | FIELD CODE: 240 | FIELD: ESPERANZA | AREA CODE: 00 | AREA: ANY AREA

API WELL NO: | LEASE NAME: REEVES | WELL NO: 1 | SEC 19 | T 03S | R 08W | B&M SB | WELL STAT: A

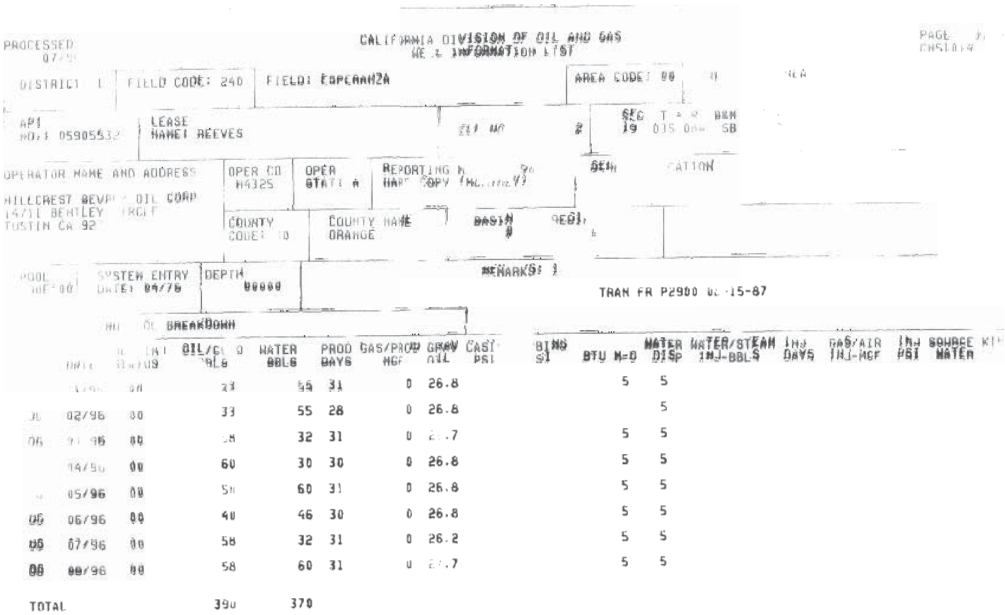
OPERATOR NAME AND ADDRESS | OPER CO H432S | OPER STAT: A | REPORTING METHOD: 50 HARD COPY (MONTHLY) | GENERAL LOCATION

COUNTY CODE: 30 | COUNTY NAME ORANGE | BASIN 0 | REGION 0

POOL NAME: NO POOL BREAKDOWN | SYSTEM ENTRY DATE: 04/76 | DEPTH 00000 | REMARKS: 1- 2- TRAN FR P2900 08-15-87 3-

WELL TYPE	DATE	PROD/INJ STATUS	OIL/COND BBLS	WATER BBLS	PROD DAYS	GAS/PROD MCF	GRAV OIL	CASING PSI	OPTNG PSI	BTU M-O	WATER DISP	WATER/STEAM INJ-BBLS	INJ DAYS	GAS/AIR INJ-MCF	INJ PSI	SOURCE WATER	KIND WATER
OG	01/96	00	33	54	31	0	8				5	5					
OG	02/96	00	33	54	28	0	.8				5	5					
	03/96	00	57	2	31	0	26.7				5	5					
	04/96	00	58	59	30	0	26.8				5	5					
OG	05/96	00	49	58	31	0	26.8				5	5					
OG	06/96	00	40	4	30	0	26.8				5	5					
OG	07/96	00	5	32	31	0	26.2				5	5					
OG	08/96	00	57	58	31	0	27.7				5	5					

TOTAL 362



PROCESSED 07/96

CALIFORNIA DIVISION OF OIL AND GAS
WELL INFORMATION LIST

DISTRICT: 1 | FIELD CODE: 240 | FIELD: ESPERANZA | AREA CODE: 00 | AREA: ANY AREA

API WELL NO: 05905532 | LEASE NAME: REEVES | WELL NO: 2 | SEC 19 | T 03S | R 08W | B&M SB

OPERATOR NAME AND ADDRESS | OPER CO H432S | OPER STAT: A | REPORTING METHOD: 50 HARD COPY (MONTHLY) | GENERAL LOCATION

HILLCREST BEVERLY OIL CORP
14711 BENTLEY CIRCLE
TUSTIN CA 92

COUNTY CODE: 30 | COUNTY NAME ORANGE | BASIN 0 | REGION 0

POOL NAME: NO POOL BREAKDOWN | SYSTEM ENTRY DATE: 04/76 | DEPTH 00000 | REMARKS: 1- TRAN FR P2900 08-15-87

WELL TYPE	DATE	PROD/INJ STATUS	OIL/COND BBLS	WATER BBLS	PROD DAYS	GAS/PROD MCF	GRAV OIL	CASING PSI	OPTNG PSI	BTU M-O	WATER DISP	WATER/STEAM INJ-BBLS	INJ DAYS	GAS/AIR INJ-MCF	INJ PSI	SOURCE WATER	KIND WATER
OG	01/96	00	33	54	31	0	26.8				5	5					
OG	02/96	00	33	55	28	0	26.8					5					
OG	03/96	00	58	32	31	0	27.7				5	5					
	04/96	00	60	30	30	0	26.8				5	5					
	05/96	00	59	60	31	0	26.8				5	5					
OG	06/96	00	40	46	30	0	26.8				5	5					
OG	07/96	00	58	32	31	0	26.2				5	5					
OG	08/96	00	58	60	31	0	27.7				5	5					

TOTAL 390 370

HERMAN E. SCHALLER

Petroleum Engineering Counsultant
California Professional Engineer P-622

Mr. R. K. Baker, District Deputy
State of California
Division of Oil & Gas
245 West Broadway, Suite 475
Long Beach, Ca. 90802-4455

October 31, 1996

Re: Hillcrest Beverly Oil Corporation Esperanza Properties

Dear Mr. Baker:

In a recent telephone conversation with your Mr. Robert Samuelian, I outlined some of the problems Hillcrest Beverly Oil Corporation is having in trying to maintain a break-even financial status on its Amos Travis and Reeves Carillo leases at Esperanza. With the marginal oil production, any means of reducing operating costs would help in the effort to recover the optimum amount of oil reserves under the two leases involved.

One approach to improve the income/cost ratio would be to dispose of the produced water and gas in one of the non-commercial wells on the properties. This was the subject of my discussion with Mr. Samuelian I referred to. Mr. Samuelian advised that to conduct the disposal of less than 150 barrels of water per month, along with a minimal amount of gas, would require a formal " Water Disposal Project " application.

Before going to the considerable expense to prepare such an application, Hillcrest Beverly Oil Corporation respectfully requests permission to conduct a 90 day test to see if the desired results are feasible. At the present time, the Reeves Carillo #3 well, which has the Kraemer zone exposed, appears to be the most likely candidate for such a test.

We trust that you will be able to act favorably on this request.

Sincerely,
H.E. Schaller
Herman E. Schaller, Agent

cc: Morris V. Hodges

Reeves #3
059-20333

4146 PERIWINKLE WAY, OCEANSIDE, CALIFORNIA,92057 Telephone & Fax (619) 721-8033

STATE OF CALIFORNIA—THE RESC

PETE WILSON, Governor

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS,
AND GEOTHERMAL RESOURCES
245 WEST BROADWAY, SUITE 475
LONG BEACH, CA 90802-4455
(310) 590-5311
TELEFAX (310) 590-5301

H.E. Schaller, Agent
HILLCREST BEVERLY OIL CORPORATION
4146 Periwinkle Way
Oceanside, CA 92057

November 7, 1996

Re: Injectivity Test
Esperanza oil field

Dear Mr. Schaller:

Your request to conduct an injectivity test into well "Reeves Carillo" 3 is being evaluated. Our records do not indicate any such well. To avoid any confusion please file the following information:

1. Name of Well (conformation)
2. API No.
3. Casing diagram (to include casing, cement calculation and Base of Freshwater).

If I can be of any help, please call.

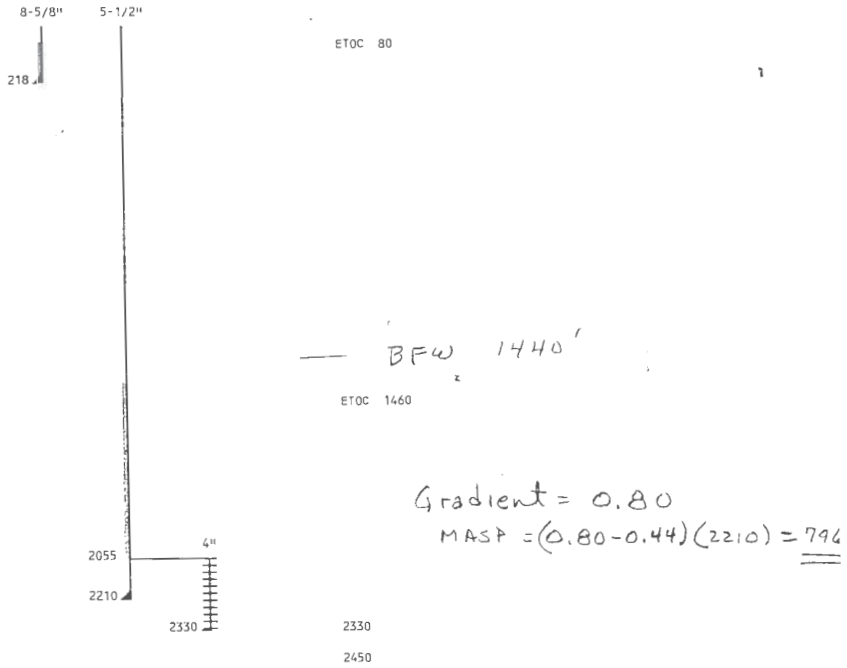
Sincerely,
Robert H. Samuelian
Robert H. Samuelian
Subsidence Engineer

RHS:rhs

HILLCREST BEVRLY OIL CORP
REEVES 3
(API No. 05920333)

8-5/8 cem 218'; 5-1/2 cem 2210'wso; 4 ld 2055'-2330', perf 2055'-2330'. TD 2824'. Plugged w/cem 2450'-2330'. NOTE: ETOC @80', ETOC @1460'.

RHS 11/7/96



HERMAN E. SCHALLER

Petroleum Engineering Counsultant
California Professional Engineer P-622

Mr. Robert H. Samuelian
State of California
Division of Oil & Gas
245 West Broadway, Suite 475
Long Beach, Ca. 90802-4455

November 13, 1996

Re: Hillcrest Beverly Oil Corporation, Injectivity Test, Esperanza Field

Dear Mr. Samuelian:

In response to your letter of November 7, 1996, I apologize for incorrectly stating the well designation for the proposed water/gas disposal test in the Esperanza oil field. The completion report, dated October 16, 1969, on DOG Form 100, identifies the intended well as Reeves #3.

This well is currently being identified as API No. 05920333

The mechanical details for the subject well are as follows:

8-5/8" 32#, J-55 casing cemented in 15" hole @ 218',w/ 100 sax cement

5-1/2" 15.5#,J-55 casing " " 7-7/8" hole @ 2,110' w/ 100 sax cement. WSO.

4" slotted liner gravel-packed, landed @ 2,330', top of liner @ 2,055'

The ETOC calculation is: 5-1/2" casing in 7-7/8" hole, yield factor- 5.7719 lineal feet: 100 x 1.15 x 5.7719 = 664'. 2,110 - 664 = 1,446' ETOC.

The Base of Freshwater in this well is estimated @ 1,440' ±.

I trust that the above information is satisfactory.

Sincerely,

Herman E. Schaller, Agent for
Hillcrest Beverly Oil Corporation

cc: Morris V. Hodges

4146 PERIWINKLE WAY, OCEANSIDE, CALIFORNIA,92057 Telephone & Fax (619) 721-8033

STATE OF CALIFORNIA--THE RESOURCES AGENCY PETE WILSON, Governor

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS,
AND GEOTHERMAL RESOURCES
245 WEST BROADWAY, SUITE 475
LONG BEACH, CA 90802-4455
(310) 590-5311
TELEFAX (310) 590-5301

H.E. Schaller, Agent
HILLCREST BEVERLY OIL CORPORATION
4146 Periwinkle Way
Oceanside, CA 92057

December 6, 1996

RE: Injectivity Test
Esperanza oil field

Dear Mr. Schaller:

In response to your request dated October 31, 1996, approval is hereby granted for Hillcrest Beverly Oil Corporation to conduct an injectivity test in the Kraemer zone well "Reeves" 3 (059-20333), Sec.19, T.3S, R.8W., S.B.B.&M. provided:

1. This office shall be informed on the first day of injection.
2. Testing period shall not exceed 90 calendar days from the first day of injection.
3. Surface injection pressures shall not exceed 790 psi.
4. Injection rates and pressures shall be reported on our Form 110B (supply enclosed). These forms should be sent to this district office (monthly, from the first day of injection) and should not be included in your regular monthly Form 110 report to our Sacramento office.

This Injectivity Test Approval Permit shall expire May 31, 1997.

If you have any question concerning the testing or reporting procedure, please contact the undersigned.

Sincerely,

Robert H. Samuelian
Subsidence Engineer

concur:
Michael J. Kratovil
Technical Support Supervisor

RHS:rhs
cc: Well File

STATE OF CALIFORNIA--THE RESOURCES AGENCY PETE WILSON, Governor

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS,
AND GEOTHERMAL RESOURCES
245 WEST BROADWAY, SUITE 475
LONG BEACH, CA 90802-4455
(310) 590-5311
TELEFAX (310) 590-5301

H.E. Schaller, Agent
HILLCREST BEVERLY OIL CORPORATION
4146 Periwinkle Way
Oceanside, CA 92057

July 18, 1997

RE: Injectivity Test
Esperanza oil field

Dear Mr. Schaller:

As we discussed on July 18, 1997, your permit to conduct an injectivity test on well "Reeves" 3 has expired. Should plans for this well change, we will need a new application letter prior to injection.

If you have any question please give me a call

Sincerely,

John Jepson
Enhanced Recovery Engineer

JDJ:jj

cc: Well File
project file

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF CORRECTION OR CANCELLATION

Long Beach, California

September 9, 1997

Herm Schaller, Agent
HILLCREST BEVERLY OIL CORPORATION
27241 Burbank
Foothill Ranch, CA 9610-2500

In accordance with telephone conversation on 9/5/97 with Herm Schaller, the following change pertaining to your well **"Amos Travis" 3**, API **No. 059-20318**, **Esperanza** field, **Orange** County, Sec. **19**, T. **3S**, R. **8W**, **SB** B. & M. is being made in our records:

Your notice to abandon dated **July 9, 1996**, and our report **No. P 196-0800** issued in answer thereto, are hereby cancelled inasmuch as the work will not be done. If you have an individual bond on file covering this notice, it will be returned. No request for such return is necessary.

1) Also Abandon permit No. P 195-0719 dated June 28, 1995 is hereby cancelled. 2) Transfer of this and other wells to Titan Energy is still pending bond coverage on well "Amos Travis" 3.

William F. Guerard, Jr.
State Oil and Gas Supervisor

By _____
For R. K. Baker, *Deputy Supervisor*

FL:nl

cc: Update
EDP
Titan Energy, Inc.
Att: Kevin Hodges
14711-B Bentley Circle
Tustin, CA 92670

OSD 186
cancel.289

Data-Analysts GROUP

GEOCHEMICAL ANALYSIS

Hillcrest Bervely Oil Company
27241 Burbank
Foothill Ranch, CA 92610-2500

Attention: Morris Hodges

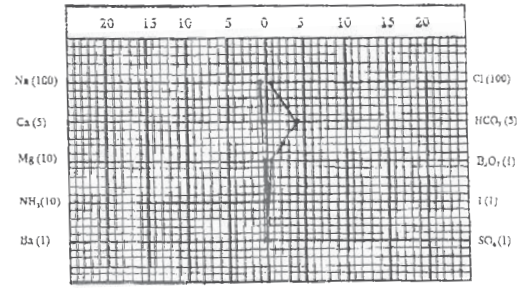
Sample ID: Esperanza Lease

Date sampled: not provided
Date Received: October 15, 1998
Date Reported: October 22, 1998

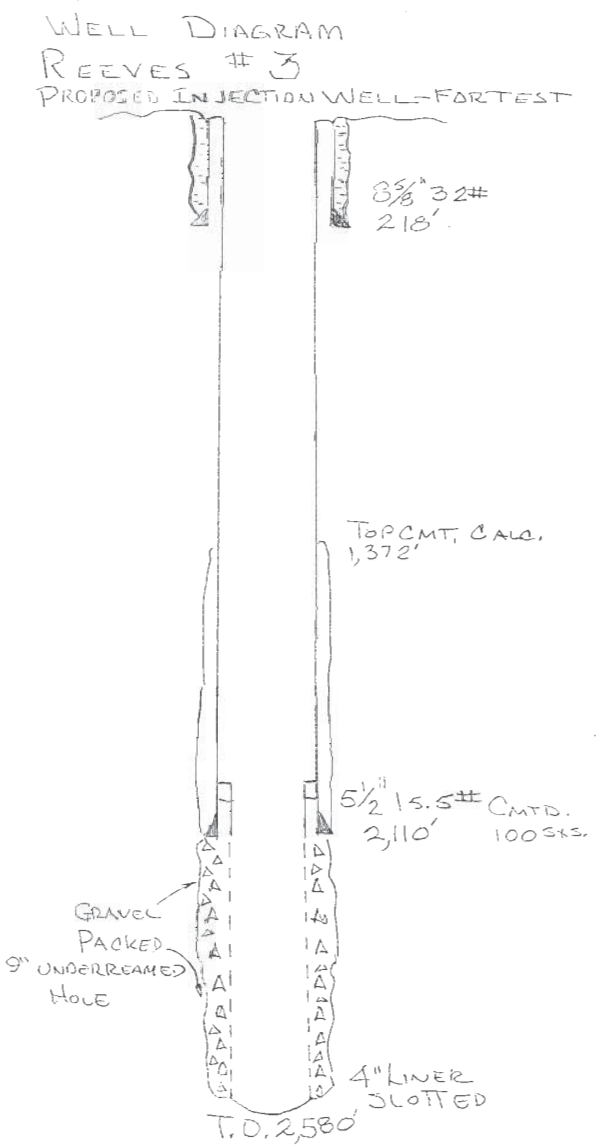
Laboratory ID#: 980668
File #: HBOC668-geo

CATIONS	mg/L	meq/L
Sodium (Na) calculated	1157	50.31
Ammonium (NH_4)	2	0.11
Calcium (Ca)	52	2.60
Magnesium (Mg)	0	0.00
Barium (Ba)	0	0.00
Iron (Fe)	0.1	0.01
ANIONS		
Chloride (Cl)	876	24.69
Hydroxide (OH)	0	0.00
Carbonate (CO_3)	0	0.00
Bicarbonate (HCO_3)	1269	20.80
Borate (B_4O_7)	47	0.60
Silica (SiO_2)	36	6.47
Sulfate (SO_4)	0	0.00
Organic Acids (as Acetic)	28	0.47

TOTAL HARDNESS	20
SALINITY as NaCl	1443
TDS (Calc)	3466
pH	7.7
SPECIFIC GRAVITY (@ 60° F)	1.000
RESISTIVITY (Calc) (ohm cm @ 75° F)	200.80
TSS (mg/L)	16.0
Mg/Ca RATIO	0.00



1842 East 29th St., Long Beach, CA 90806
Telephone 562-426-0199, FAX 562-426-5684



12-8-98 MEW

MERRILL E. WRIGHT
16531 Bolsa Chica St. Suite 301
Huntington Beach CA 92649
(714) 377-9234

December 1, 1999

State of California Division of Oil and Gas and Geothermal Resources
Attention: J. Jepson - E. R. Engr.
5816 Corporate Ave.
Cypress, California 90630

Dear Mr. Jepson:

The Santa Ana Canyon Development Corporation -Hillcrest Beverly Oil Corporation has designated me as their agent. I am to request your approval for an injectivity test on their Esperanza oil field leases. Their two leases are the Amos Travis lease and the Reeves-(Carrillo) lease. They each have 3 wells on them. The Amos Travis lease has two producers and one idle well. Reeves-(Carrillo) has three producers and one idle well. Reeves #3, and Amos Travis #3 redrill are the idle wells. These idle wells, on each lease, will be converted to injection for test purposes.

This proposal is to reactivate the November 1996 request for D.O.G. approval for well Reeves 3. The well was approved for an injectivity test that was not implemented. The test was subsequently canceled by a notice from your office dated July 18, 1997. Amos Travis 3 redrill is a newly proposed well and was not part of the forgoing.

The initial test will be done in the producing interval in each well. The present production of both leases is, approximately 12 barrels of oil per day. The test will determine the economic advisability of continuing production of the leases. It is too low to continue without stimulation.

Presently we propose to begin injection in well Amos Travis 3 rd. The well will be cleaned out and an injection tubing packer set below the upper perforations at 2,000'. Water will be injected at approximately 500 barrels per day for at least 90 days to determine if a response is seen in the two Amos Travis producers. Well Amos Travis #1 is 320' northeast and #2 is 350' north west of A.T. #3 rd. bottom hole. The injection water will be a mix of the produced and municipal fresh water. The lease produces fresh water. A test of

Reeves #3 will be dependent on the results of A.T. #3 rd.

The well data for the proposed two wells is as follows:
Amos Travis #3 rd. (API # 059 20318) Drilled July 1969

8 5/8" casing cemented in 15" hole at 218' w/175 sxs. 5 1/2" casing cemented in 7 7/8" hole at 2,093' w/100sxs 4" liner set at 2,460' top at 2,070' slotted and gravel packed in 9" undereamed hole. Total depth 2,565'. Later perforations; 1987 shot at 2,155' to 2,295' and 1995 shot 1,635' to 1,705'. Production 28 degree gravity oil from the Yorba-Kraemer zone, I.P. of 122 barrels of oil per day, with a .03% cut. The well is presently idle with fill in the producing zone. Injection packer will be placed above the liner at approximately 2,000'. Well is directional drilled 430' to the north east. The original hole was straight. It was abandoned after logging and directionally redrilled to the north.

Reeves #3 (API # 059 20333) Drilled July 1969

8 5/8" 32# casing cemented in 15" hole at 218' with 100 saxs. 5 1/2 " 15.5# casing cemented in 7 7/8" hole at 2,110' with 100 saxs. WSO made. 4" slotted liner gravel packed, hung at 2,330' with top at 2,055'. Total depth 2,824'. Produced 28 degree gravity oil from the lower Yorba zone; I.P. 40 barrels of oil per day, 0% cut. This well will be placed on injection test when the Travis wells show response, or when the Amos Travis shows it will not function as an injection test well.

Also included herewith are the well diagrams for both proposed test wells and a recent produced water analysis.

Please advise us through our agent, Mel Wright, if these data are sufficient for to begin the requested test. If more information is required we will transmit it to you as soon as possible. Thank you for your time and consideration.

Sincerely

M.E. Wright-Agent Hillcrest Beverly Oil corp.
Geological and Petroleum Consultant

Attach. Well Diagram; Water Analysis

State of California THE RESOURCES AGENCY OF CALIFORNIA

Memorandum

To: File

Date: December 15, 1999

Subject: Esperanza Injectivity Test

From : John Jepson
Department of Conservation
Division of Oil, Gas, and Geothermal Resources
Long Beach

Spoke to Mel Wright, Agent for Hillcrest, about the above test. Will begin 90 day inj. Test on Amos Travis 3, then inj into Reeves 3. He understands that having the packer below the upper perf is only acceptable for the test phase of the project. If test goes to a full project, the upper perfs in this well will need to be isolated w/ packers or cemented off. Mel suggested cementing as the zone was wet when perf'd in '95.

STATE OF CALIFORNIA – THE RESOURCES AGENCY GRAY DAVIS, *Governor*

DEPARTMENT OF CONSERVATION
5816 Corporate Ave., Suite 200
Cypress, CA 90630
(714) 816-6847
FAX (714) 816-6853

January 20, 2000

Santa Ana Regional Water Quality Control Board
3737 Main Street,
Suite 500
Riverside, CA 92501-3339

Esperanza Oil Field Class II Water Injection Project

The Division of Oil, Gas and Geothermal Resources has received an application from Hillcrest Beverly Oil Corporation to initiate a water injectivity test in the Yorba and Kramer zones of the Esperanza oil field.

The operator proposes to utilize well "Amos-Travis" 3 (API No. 059-20318), located in Section 19, T.3S., R.8W., S. B. B.& M.

The Yorba and Kramer zones have an average depth of 1700' and contain a mixture of oil and water. In the injection well, the oil zones are isolated from the fresh water aquifers by a string of 8 5/8" casing cemented at 2093'. The zone water contains a TDS of less than 3500 ppm. The amount of water to be injected during the test is anticipated to be 500 barrels per day.

Please submit to this office any comments you may have on this project. Your comments are due within 14 calendar days from the date of this letter. If you have any questions, please give me a call at 714/816-6847.

Sincerely,

John Jepson

John Jepson
Enhanced Recovery Engineer

JJ:jj

Cc: project file

To: Kent Carlson
From: Kevin Hodges
Re: Amos Travis 3
Date: February 28, 2003

MEMORANDUM

Kent,

Included please find the requested well history reports on Amos Travis well 3.

Please call if you have any questions.

Sincerely,

Kevin Hodges
SANTA ANA CANYON DEVELOPMENT CORP.
(714) 299-8000

F

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator Santa Ana Canyon Dev. Field Esperanza County Orange
Well AMOSTRAVIS 3 Rd Sec. 19 T 35 R 8W S.B. B&M.
A.P.I. No. 059-20318 Name K. Hodges (Person submitting report) Title Agent (President, Secretary, or Agent)
Date 2-20-2003 (Month, day, year) Signature
Address 27241 Burbank, Foothill Ranch, CA 92610 Telephone Number (949) 598-7300

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Date	
3-28-00	Move in, pull and lay down tbg. PU 5-½" scraper & RIH to 2,015'. Secure well.
3-29-00	RIH with 1-½" tbg, tag fill @ 2,015'. Attempt C.O. 1-½" hydraulicing out of hole. Pull out, run back in with 2-3/8" tbg. CO to 2,214'. Lost circulation, pumped 70 bbls, no circ. Pull up to liner top. Secure well.
3-30-00	Pumped 220 bbls re-established circ. RIH, tagged fill @ 2,225'. C.O. to 2,256'. Cement and metal pieces in returns (liner "windows"), plugged pump, lost circ. Pulling out got stuck at 2,225'. Got circ back. Worked pipe while pumping down csg & tbg. Move tubing 40' up hole. Pulled 65,000# and parted tbg. Secure well.
4-3-00	Bottom of 4th joint parted @ 122.6', RIH with Baker overshot & 3-¼" grapple, bumper sub. Catch collar and pull 40,000# for 15 min. Back off to 10,000#. Leave overnight. Secure well.
4-4-00	Run free point, stuck on going in @ 700', 1,006', 2,110'. Jet cut tbg at 2,010'. RIH to top of fish @ 2,010'. Pumped water until well clean. Pull out, lay down 1-¼" macaroni. Secure well.
6-26-00	RIH with mill and overshot & 4 3-1/8" drill collars. to 1,930'. Mill over fish. Jar on fish. Secure well.
6-27-00	Continue jarring on fish with 90,000#, moved 1-½'. Pulled out. Run back in, engage fish with overshot. Can't pull. RIH with bailer, bail 2,010' to 2,070'. Secure well.
6-28-00	Bailed 60' inside 2-3/8" tbg fish. Mud and sand in returns.

OG103 (6/97/GSR/5M) SUBMIT IN DUPLICATE
Printed on recycled paper. -1-

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

HISTORY OF OIL OR GAS WELL

Operator Santa Ana Canyon Dev
Well AMOSTRAVIS 3 Rd
A.P.I. No. 059-20318
Date 2-20-2003 (Month, day, year)
Field Esperanza County Orange
Sec. 19 T 35 R 8W S.B. B&M.
Name K. Hodges (Person submitting report) Title Agent (President, Secretary, or Agent)
Signature
Address 27241 Burbank, Foothill Ranch, CA 92610 Telephone Number (949) 598-7300

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Date	
6-29-00	Broke down equipment, move out to spot coiled tbg unit.
7-1-00	Site coiled tbg unit. CO & work fish w/80,000# gravel pack. Gravel in returns. Secure well.
7-3-00	Chemically cut tbg @ 2,180'. Circ clean. Pull 5-½ joints 2-3/8" fish. RIH with 3-1/8" overshot and 4 drill collars. Went to 2,190'. No fish. Cleaned out overshot. RIH to 2,190', stopped. Secure well.
7-5-00	Pull out remove grapple. RIH with overshot and collars attempt to wash over fish. Tbg plugged at 2191'. Pulled out 2 jts tbg, 4 drill collars and tools plugged with sand. RIH, set at 2,175', circ tbg, plugged. Pulled out, 4 drill collars & B.H.A. plugged with sand. Picked up 2-1/16" tbg and changed back to 2-7/8" equipment. Secure well.
7-6-00	RIH to fill @ 2142' with 3-1/8". Mill on 2-1/16" tbg & circulated clean. Sanded from 2,142' to 2,155'. Can't make hole. Pulled out. Remove mill. RIH with 45° mule shoe. CO from 2,155' to 2,179'. Recovered 1-½" x 1" liner "window" metal piece. Pulled tbg to 1,600'. Secured well.
7-7-00	RIH to fill @ 2,178'. No overnight fill. Circulated clean. Lay down mule shoe. Picked up 3-1/8" overshot. RIH work over fish. Work jars @ 40,000# and 45,000#. Stuck fishing tool. Pulled free. Overshot in poor condition. Secured well.
7-8-00	Made up 5-½" tension packer. RIH w/2-7/8" tbg set at 1,587' and tail @ 1,620'. Test casing w/525# psi for 20 minutes. Release packer. Secure well.

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
HISTORY OF OIL OR GAS WELL
Operator Santa Ana Canyon Dev
Well AMOSTRAVIS 3 Rd
A.P.I. No. 059-20318
Date 2-20-2003 (Month, day, year)
Field Esperanza County Orange
Sec. 19 T 35 R 8W S.B. B&M.
Name K. Hodges (Person submitting report) Title Agent (President, Secretary, or Agent)
Signature
Address 27241 Burbank, Foothill Ranch, CA 92610 Telephone Number (949) 598-7300
History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment, with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests, and initial production data.

Date	
7-10-00	Set pkr @ 1,587', tested OK. PO. Break down equipment.
7-11-00	With pkr set @ 1,587', tested casing @ 500 psi. (D.O.G. D. Dudak, Witness) Approved. Establish breakdown pressure at 6.33 cu ft/min at 850 psi. Load out equipment. Install fences.
5-11-01	RU. Unlanded tbg & injection pkr. Relanded both. Secured well.
5-14-01	Open well. Unlanded tbg & pkr. RIH, tag fill @ 1,989'. bottom 2,460', top fish @ 2,180'. RIH with 215 ft. of 2-1/6" tbg w/45° on bottom. 2-7/8" tbg on top. Secured well.
5-15-01	RIH, tag fill @ 2,015'. CO 2,015' to top of fish at 2,180', recovered sand & gravel in returns. Secured well.
5-16-01	RIH tag fill @ 2,013'. Pulled & layed down tbg. Shut well in. Rig down, load out. Idled well.

END

WELL RECORDS

AMOS-TRAVIS #4

FORM 105

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS RECEIVED
MAY 28 1969
INGLEWOOD, CALIFORNIA

D

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

Atrominerals Corp. Beverly Hills, Calif. May 21, 1969

059-20334

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. Amos Travis #4, Sec. 19, T. 3S, R. 8W, S B. & M., Esperanza Field, Orange County.

Legal description of mineral-right lease, consisting of 67.70 acres, is as follows: See attached (Attach map or plat to scale)

Do mineral and surface leases coincide? Yes X No ____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: 2210 feet East (Direction) along property section line and 2830 feet South (Direction) property at right angles to said line from the Northwest corner of section 19

Elevation of ground above sea level 748 feet Sea Level datum.

All depth measurements taken from top of K.B. (Derrick Floor, Rotary Table or Kelly Bushing) which is 10.5 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
8-5/8"	24#	J-55	Surface	200'	200' to surface
5-1/2"	14#	J-55	Surface	2500'+	2500' 100 sx.
4"	9.5#	H-40	2500	2800'	Gravel Pack Liner

Intended zone(s) of completion: Kreamer (Name) (Depth, top and bottom) Estimated total depth 2800'

	BOOK	CARD	BOND	FORMS 114	FORMS 121
WI-4 MAP B	5-224 ARG CL	B		ARG	ARG

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address Ste.515, 9460 Wilshire Blvd. Beverly Hills, California

California-Time Petroleum (Inc) Co. (Name of Operator)

By John H. Farnum

Telephone Number (213) 278-1181

Type of Organization Corporation

SUBMIT IN DUPLICATE

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

History of Oil or Gas Well

Operator Hillcrest Beverly Oil Corp. **Field** Esperanza **County** Orange
Well "Amos Travis" # 4 , **Sec.** 19 , **T** 3S , **R** 8W S.B. **B. & M.**
A.P.I. No. 059-20334 **Name** Herman E. Schaller (Person submitting report) **Title** Agent (President, Secretary or Agent)
Date September 6 , **19** 94. **Signature** H E Schaller

14711 Bentley Circle, Tustin, Ca. 92680 (Address) 714 665-6860 (Telephone Number)

History must be complete in all detail. Use this form to report all operations during drilling and testing of the well or during redrilling or altering the casing, plugging, or abandonment with the dates thereof. Include such items as hole size, formation test details, amounts of cement used, top and bottom of plugs, perforation details, sidetracked junk, bailing tests and initial production data.

Date	
-31-94	BOP equipment inspected and approved by DOG
	Cleaned out to 2,139'-could not get deeper. Approved DOG.
	Placed cement plug 2,139' to 1,939' w/ class G cement.
	Plugged 5-1/2" casing w/ class G cement 1,939' to surface. Witnessed and approved by DOG Cut 5-1/2" and 8-5/8" casings 5' below ground level.
	Could not get below 43' in 5-1/2" x 8-5/8" annulus w/ tubing stinger. Cemented 5-1/2 x 8-5/8" annulus w/ cement 43' to surface. Witnessed and approved by DOG.
-1-94	Location and hardness of surface plugs witnessed and approved by DOG.
	Welded cap on 8-5/8" casing stub. Abandonment completed.

OG103 (6/91/GSR1/5M)

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES

REPORT OF WELL PLUGGING AND ABANDONMENT

Long Beach, California

June 7, 1995

Herman E. Schaller, Agent
HILLCREST BEVERLY OIL CORP.
3320 Law Behm Terrace
FULLERTON CA 92635

Your report of the plugging and abandonment of well "Amos Travis" 4, A.P.I. No. 059-20334, Section 19, T. 3S, R. 8W, S.B. B.& M., Esperanza Field, Orange County, dated 9-6-94, received 9-8-94, has been examined in conjunction with operations witnessed and records filed in this office. We have determined that all of the requirements of this Division have been fulfilled relative to plugging and abandonment of the well, removal of well equipment and junk, and the filing of well records.

NOTES:
1. Surface plugging completed on 9-1-94.
2. Site inspection made and approved 11-2-94.

William F. Guerard, Jr.
State Oil and Gas Supervisor

By R C Maxwell
For R. K. Baker, *Deputy Supervisor*

KMC:df

NO BOND REQUIRED

cc: Update
Orange County Assessor
EMA-Manager, Land Use Division

OG159

WELL RECORDS

REEVES #1

Form 105

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

RECEIVED
SEP 21 1965
INGLEWOOD, CALIFORNIA

059-05531

Beverly Hills, Calif. Aug., 20, 1965

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. Reeves #1, Sec. 19, T. 3 S, R. 8 W, S.B. & M., Esperanza Field, Orange County.

Legal description of mineral-right lease, consisting of 98 acres, is as follows: Carrillo Ranch (Attach map or plat to scale)

See attached description

Do mineral and surface leases coincide? Yes x No ____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: 2435 feet East (Direction) along ~~property~~ section line and 2785 feet South (Direction) at right angles to said line from the Northwest property corner of section 19

Elevation of ground above sea level 691 feet sea level datum.

All depth measurements taken from top of Kelly Bushing (Derrick Floor, Rotary Table or Kelly Bushing) which is 4 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
8 5/8"	20#	J 55 R 2	Surface	200'	200'
5 ½"	14#	J 55 R 2	"	2600 + -	2600'

Intended zone(s) of completion: Kramer Zone (Name) 2400'-2600' (Depth, top and bottom) Estimated total depth 2600'

FORMS 114 121

9-21-65 Copy

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address 9460 Wilshire Blvd., Beverly Hills, Calif.

Telephone Number Cr. 8-1181

California-Time Petroleum Co., (Name of Operator)

By (Grant W. Corby-Engineer)

Type of Organization R. R. Greenbaum dba California Time Petroleum Co.

WELL RECORDS

REEVES #2

Form 105

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS RECEIVED
JAN 7 1966
05905532
INGLEWOOD, CALIFORNIA

D

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

Beverly Hills Calif. January 6 19 66

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. "Reeves" #2, Sec. 19, T. 3 S, R. 8 W, S B. & M., Esperanza Field, Orange County.

Legal description of mineral-right lease, consisting of 100 approx. acres, is as follows: See attached description. (Attach map or plat to scale)

Do mineral and surface leases coincide? Yes Yes No ____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: 2520 feet East (Direction) along property section line and 2430 feet South (Direction) at right angles to said line from the Northwest corner of ~~section~~ property 19

Elevation of ground above sea level 740 feet ____ datum.

All depth measurements taken from top of KB (Derrick Floor, Rotary Table or Kelly Bushing) which is 10.5 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
8 5/8	20#	J55 R2	Surface	200'	200' to surface 50 sacks
5 1/2	14#	J55 R2	Surface	2600 ±	2600 w/100 sacks 2% C. Cl.

Intended zone(s) of completion: Kreamer (Name) 2600 - 2900 (Depth, top and bottom) Estimated total depth 2900

MAP	BOOK	CARD	BOND	FORMS 114	121
W1-4	1-10	GB	33 64 4 Held 1-5-66	GB	GB

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address 9460 Wilshire Blvd., st.729
Beverly Hills, California
Telephone Number CR 8-1181

R. R. Greenbaum dba
CALIFORNIA-TIME PETROLEUM CO.
(Name of Operator)

By (Grant W. Corby)

Type of Organization Sole ownership
(Corporation, Partnership, Individual, etc.)

WELL RECORDS

REEVES #3

FORM 105

RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION

DIVISION OF OIL AND GAS RECEIVED
MAY 22 1969
INGLEWOOD, CALIFORNIA

D

DIVISION OF OIL AND GAS

Notice of Intention to Drill New Well

This notice and surety bond must be filed before drilling begins

059-20333

Beverly Hills, Calif. May 21, 19 69

DIVISION OF OIL AND GAS

In compliance with Section 3203, Division III, Article 4, Public Resources Code, notice is hereby given that it is our intention to commence drilling well No. Reeves #3 (059-20333), Sec. 19, T. 3S, R. 8W, S B. & M., Esperanza Field, Orange County.

Legal description of mineral-right lease, consisting of 67.70 acres, is as follows: See attached
(Attach map or plat to scale)

Do mineral and surface leases coincide? Yes X No ____ If answer is no, attach legal description of both surface and mineral leases, and map or plat to scale.

Location of Well: 2500 feet East (Direction) property along section line and 2760 feet South (Direction)

at right angles to said line from the Northwest corner of section 19

Elevation of ground above sea level 695 feet Sea level datum.

All depth measurements taken from top of K.B. (Derrick Floor, Rotary Table or Kelly Bushing) which is 10.5 feet above ground.

PROPOSED CASING PROGRAM

SIZE OF CASING INCHES A.P.I.	WEIGHT	GRADE AND TYPE	TOP	BOTTOM	CEMENTING DEPTHS
8-5/8"	24#	J-55	Surface	200'	200' to surface
5-1/2"	14#	J-55	Surface	2500'+	2500' 100 sx
4"	9.5#	H-40	2500	2800'	Gravel Pack Liner

Intended zone(s) of completion: Kreamer (Name) (Depth, top and bottom) Estimated total depth 2800'

MAP	BOOK	CARDS	BOND	FORMS 114	FORMS 121
W1-4 MAP B	5-22-69 Cgk	ARG		ARG	ARG

It is understood that if changes in this plan become necessary we are to notify you immediately.

Address Ste. 515, 9460 Wilshire Blvd.
Beverly Hills, California

Telephone Number (213) 278-1181

California-Time Petroleum Co. (Inc.)
(Name of Operator)

By John H. Hamm

Type of Organization Corporation
(Corporation, Partnership, Individual, etc.)

H_RMAN E. SCHALL_R

Petroleum Engineering Counsultant
California Professional Engineer P-622

Mr. R. K. Baker, District Deputy
State of California
Division of Oil & Gas
245 West Broadway, Suite 475
Long Beach, Ca. 90802-4455

October 31, 1996

Re: Hillcrest Beverly Oil Corporation Esperanza Properties

Dear Mr. Baker:

In a recent telephone conversation with your Mr. Robert Samuelian, I outlined some of the problems Hillcrest Beverly Oil Corporation is having in trying to maintain a break-even financial status on its Amos Travis and Reeves Carillo leases at Esperanza. With the marginal oil production, any means of reducing operating costs would help in the effort to recover the optimum amount of oil reserves under the two leases involved.

One approach to improve the income/cost ratio would be to dispose of the produced water and gas in one of the non-commercial wells on the properties. This was the subject of my discussion with Mr. Samuelian I referred to. Mr. Samuelian advised that to conduct the disposal of less than 150 barrels of water per month, along with a minimal amount of gas, would require a formal " Water Disposal Project " application.

Before going to the considerable expense to prepare such an application, Hillcrest Beverly Oil Corporation respectfully requests permission to conduct a 90 day test to see if the desired results are feasible. At the present time, the Reeves Carillo #3 well, which has the Kraemer zone exposed, appears to be the most likely candidate for such a test.

We trust that you will be able to act favorably on this request.

Sincerely,

H E Schaller

Herman E. Schaller, Agent

cc: Morris V. Hodges

Reeves #3
059-20333

4146 PERIWINKLE WAY, OCEANSIDE, CALIFORNIA,92057 Telephone & Fax (619) 721-8033

STATE OF CALIFORNIA--THE RESOURCES AGENCY PETE WILSON, Governor

DEPARTMENT OF CONSERVATION
DIVISION OF OIL, GAS, AND GEOTHERMAL RESOURCES
245 WEST BROADWAY, SUITE 475
LONG BEACH, CA 90802-4455
(310) 590-5311
TELEFAX (310) 590-5301

H.E. Schaller, Agent
HILLCREST BEVERLY OIL CORPORATION
4146 Periwinkle Way
Oceanside, CA 92057

July 18, 1997

RE: Injectivity Test
Esperanza oil field

Dear Mr. Schaller:

As we discussed on July 18, 1997, your permit to conduct an injectivity test on well "Reeves" 3 has expired. Should plans for this well change, we will need a new application letter prior to injection.

If you have any question please give me a call

Sincerely,

John Jepson

John Jepson
Enhanced Recovery Engineer

JDJ:jj

cc: Well File
project file

Office of the State Fire Marshal

Pipeline Safety Division
P.O. Box 944246
Sacramento, CA 94244-2460

Request ID: 06022006SFM006

TO: PHASE ONE, INC
KATIE FLASHNER
2680 WALNUT AVENUE #B
TUSTIN, CA 92780

Phone: 714 669 8055
Fax: 714 669 8025

FROM: Lisa Dowdy
Phone: (916) 445-8477
Fax: (916) 445-8526

PIPELINE LOCATION REQUEST FOR:

6482
YORBA LINDA, CA

ORANGE Thomas Brothers Book
Page 740, Grid H2-3 & J2-3

THERE ARE NO PIPELINES JURISDICTIONAL TO THE STATE FIRE MARSHAL IN THE AREA FOR WHICH YOU HAVE INQUIRED.

- FOR NATURAL GAS PIPELINES PLEASE CONTACT YOUR LOCAL GAS COMPANY

- FOR OTHER TYPES OF PIPELINE PLEASE CONTACT THE DIVISION OF OIL AND GAS AT (714) 816-6847

- FOR PUBLIC UTILITIES PLEASE CONTACT THE PUBLIC UTILITIES COMMISSION AT (415) 703-2782

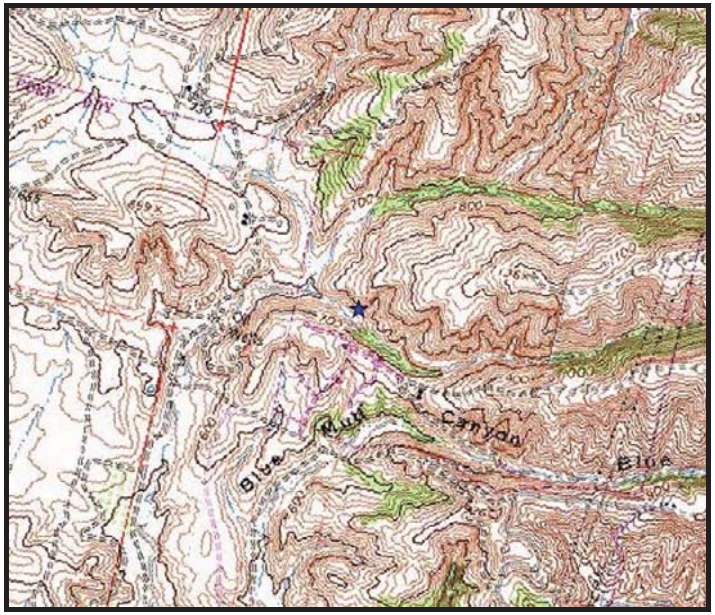
Lisa Dowdy
Research Analyst I
Office fo the State Fire Marshal

APPENDIX D

ONE-MILE RADIUS REGULATORY DATABASE REPORT

First American
Commercial Real Estate Services, Inc.

COMMERCIAL ENVIRONMENTAL SERVICES



Site Location:
APNs 351-031-04, -05, and -17
Yorba Linda, CA 92887
(N 33-53-53, W 117-45-32) NAD83

Rec-Check√

The New Standard for ASTM Radius Searches
(One Mile Environmental Records Search, Exceeds ASTM 1527/1528)

CONTENTS

EXECUTIVE SUMMARY

INFORMATION ON THE REQUESTED LOCATION

Site Address:	APNs 351-031-04, -05, and -17 Yorba Linda, CA 92887
Client Project Number:	6482
Coordinates:	N 33-53-53, W 117-45-32 (NAD 83)
FACRES Project Number:	31420105
Subject Site Listed on the following lists:	Not Listed
Subject Site Listed as Map ID#:	N/A
USGS 7.5 Minute Quad Map:	Yorba Linda
Township, Section and Range:	Township: 03S Range: 08W Section: 19 Baseline: San Bernardino
Flood Zone: **(FEMA Q3 Digital Data)**	Panel: 06059C0009E Zone X - Areas of minimal flooding (outside the 100-year floodplain)
Fire Insurance Map Coverage:	No
Date of Report	June 1, 2006

Soil Type: (USGS STATSGO Data)	
ALO 15% to 30% slopes, 5% of total	ANAHEIM 15% to 30% slopes, 5% of total
ANAHEIM 30% to 50% slopes, 12% of total	ANAHEIM 50% to 75% slopes, 6% of total
BALCOM 15% to 30% slopes, 5% of total	BALCOM 30% to 50% slopes, 6% of total
CALLEGUAS 50% to 75% slopes, 12% of total	CIENEBA 15% to 30% slopes, 3% of total
CHUALAR 9% to 15% slopes, 2% of total	FONTANA 15% to 30% slopes, 4% of total
FONTANA 30% to 50% slopes, 10% of total	GAVIOTA 30% to 50% slopes, 2% of total
GREENFIELD 9% to 15% slopes, 2% of total	NACIMIENTO 30% to 50% slopes, 2% of total
RAMONA 2% to 9% slopes, 2% of total	SOPER 15% to 30% slopes, 3% of total
SOPER 30% to 50% slopes, 11% of total	SOPER 15% to 50% slopes, 2% of total
ROCK OUTCROP 15% to 75% slopes, 2% of total	SORRENTO 0% to 2% slopes, 2% of total
SAN TIMOTEO 30% to 50% slopes, 2% of total	

In-House Aerial Photos or Historical Topo Maps	
1994 Aerial File:FSXL3124 Rank: 4	1932 USGS Map File:30D0132_AJB Rank: 1
1963 Aerial File:28D63AFD024 Rank: 2	1963 Aerial File:28D63AFD024 Rank: 1
1980 Aerial File:15D807cb088 Rank: 1	1980 Aerial File:15D807cb089 Rank: 3
1980 Aerial File:15D807cb090 Rank: 1	1980 Aerial File:10D80AFD090 Rank: 3
1980 Aerial File:10D80AFD091 Rank: 1	1980 Aerial File:10D80AFD091 Rank: 4
5/30/38 Aerial File:25D38OC1056 Rank: 2	5/30/38 Aerial File:27D38OC1113 Rank: 4

KEY TO AERIAL RANK OR HISTORICAL TOPO MAPS

Rank:	Description:
4	The subject site located near center of Aerial or Topographical map.
3	The subject site located towards edge of Aerial or Topographical map.
2	The subject site is likely covered and located near outer edge of Aerial or Topographical map.
1	The subject site is likely covered and located near outer corner of Aerial or Topographical map.

Radon
For County: 0.5% of homes predicted to be over 4 Pico Curies/Liter
For zip code 92887
Number of tests per zip code: 1
Number of tests where radon is > 4 pCi/L: 0
Percentage of test where radon is > 4 pCi/L: 0.00%

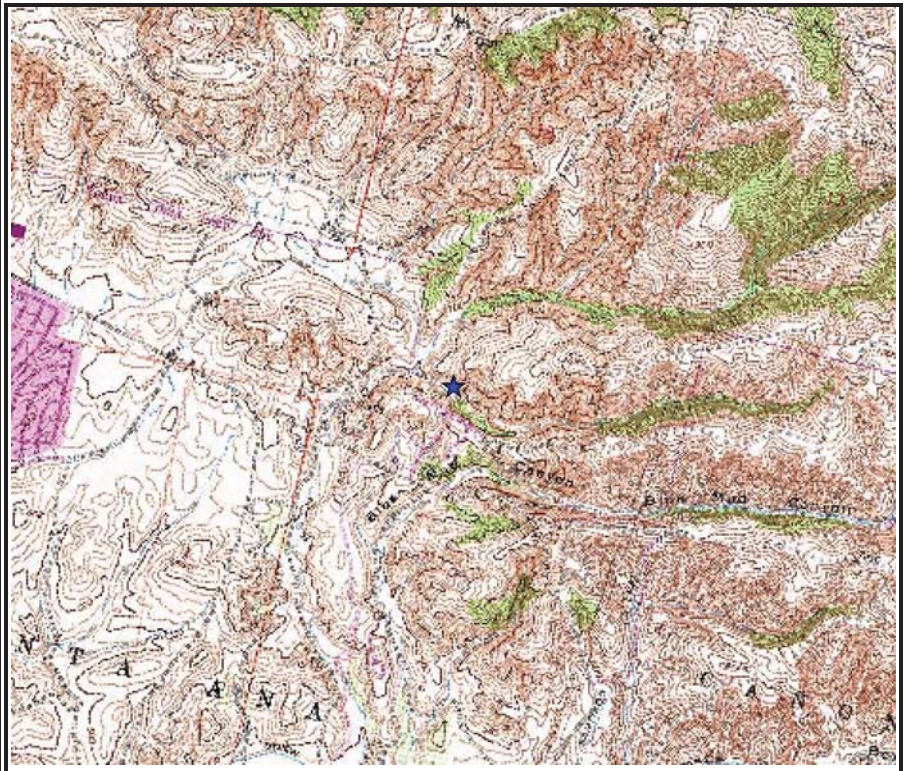
HIGH RISK* OCCURRENCES FOUND IN REQUESTED SEARCH RADIUS

LIST SEARCHED	DISTANCE SEARCHED (IN MILES)	OCCURRENCES FOUND
NPL	1	0
CERCLIS	0.5	0
CalSites	1	0
LUST-Open	0.5	0
CalSites-VCP	0.5	0
SLIC-Open	0.5	0

* For the purposes of this report, "high risk" occurrences are those that have known contamination and have not received a "case closed" or "no further action" status from the agency that maintains the records.

LISTED OCCURRENCE SUMMARY

LIST SEARCHED	DISTANCE SEARCHED	0.125	0.25	0.5	1.0	TOTAL
NPL	1	0	0	0	0	0
CERCLIS	0.5	0	0	0	-	0
CalSites	1	0	0	0	0	0
LUST-Open	0.5	0	0	0	-	0
CalSites-VCP	0.5	0	0	0	-	0
SLIC-Open	0.5	0	0	0	-	0
CalSites-REF	0.5	0	0	0	-	0
CalSites-NFE	0.5	0	0	0	-	0
CalSites-SCH	0.5	0	0	0	-	0
SWIS	0.5	0	0	0	-	0
RCRA-COR	1	0	0	0	0	0
RCRA-TSD	0.5	0	0	0	-	0
Controls-CA	0.5	0	0	0	-	0
Tribal-UST_&_or_LUST	0.5	0	0	0	-	0
OGW	0.25	2	9	-	-	23
ERNS	0.125	0	-	-	-	0
CERCLIS-Archived	0.5	0	0	0	-	0
CalSites-NFA	0.5	0	0	0	-	0
LUST-Closed	0.5	0	0	0	-	1
SLIC-Closed	0.5	0	0	0	-	0
UST	0.125	0	-	-	-	0
Hist-UST	0.125	0	-	-	-	0
RCRA	0.125	0	-	-	-	0
HWIS-CA	0.125	0	-	-	-	0
Water_Wells	0.5	0	0	0	-	0

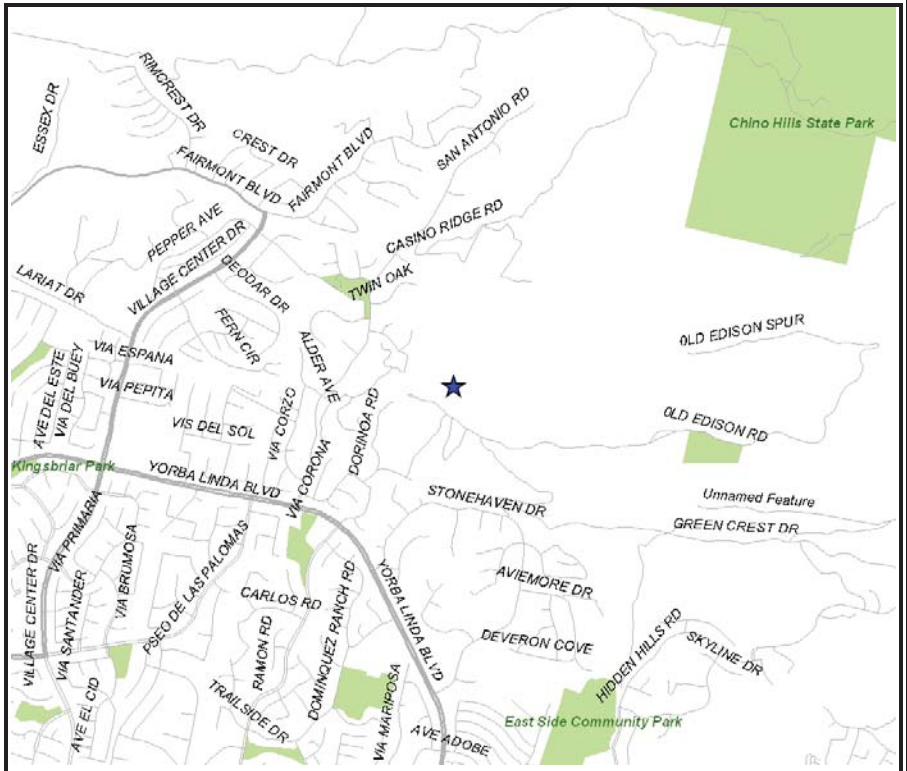


SITE LOCATION TOPOGRAPHIC MAP

U.S. Geological Survey. Yorba Linda Quadrangle
7.5 Minute Series, Approximate Scale: 1: 33000

N

PHASE ONE INC.	APNs 351-031-04, -05, and -17 Yorba Linda, CA 92887	FIGURE : JOB: DATE:
		1 6482 6/19/2006



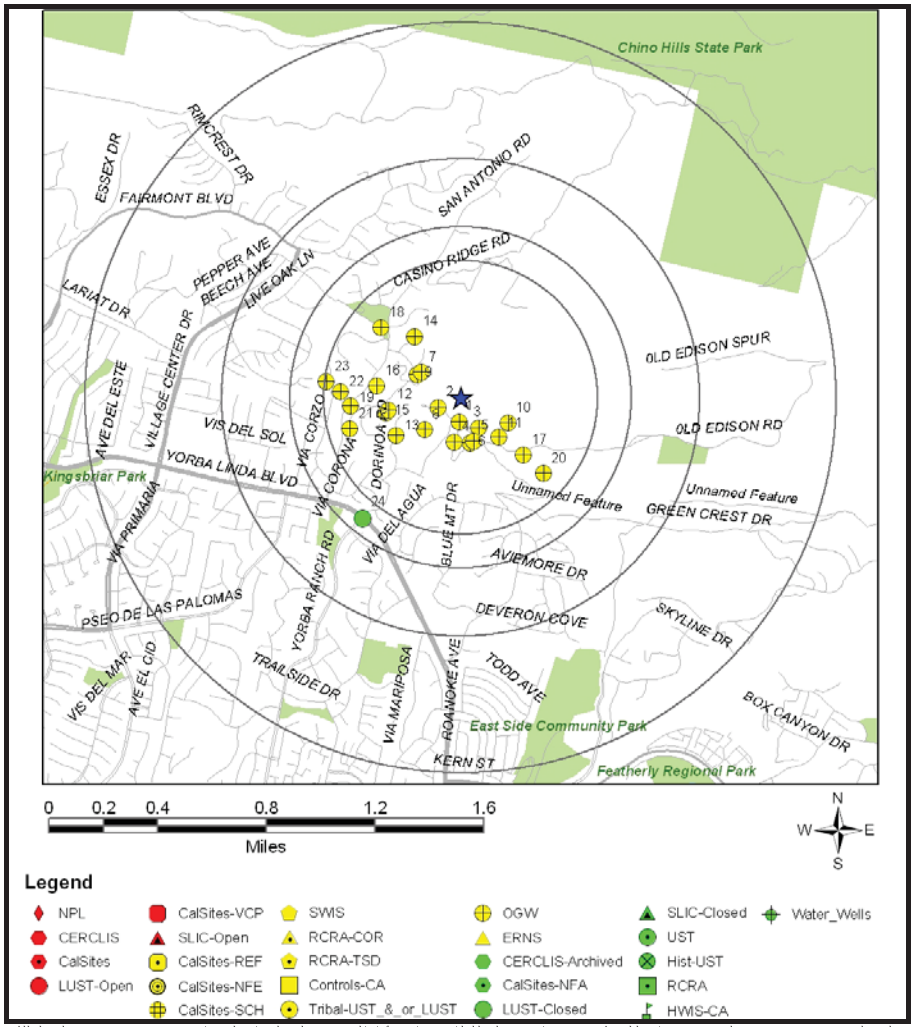
SITE LOCATION STREET MAP

Approximate Scale: 1: 33000

N

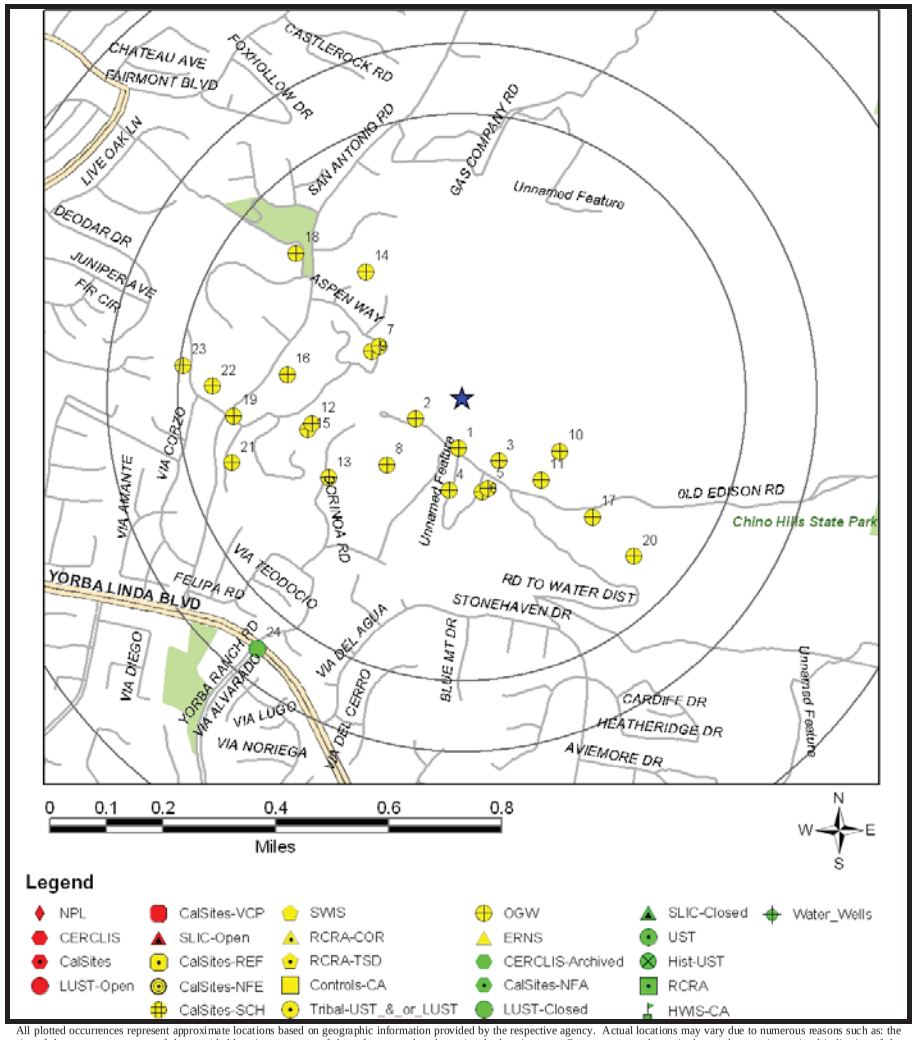
PHASE ONE INC.	APNs 351-031-04, -05, and -17 Yorba Linda, CA 92887	FIGURE : JOB: 6482 DATE: 6/19/2006

1-MILE RADIUS STREET MAP W/OCCURENCES



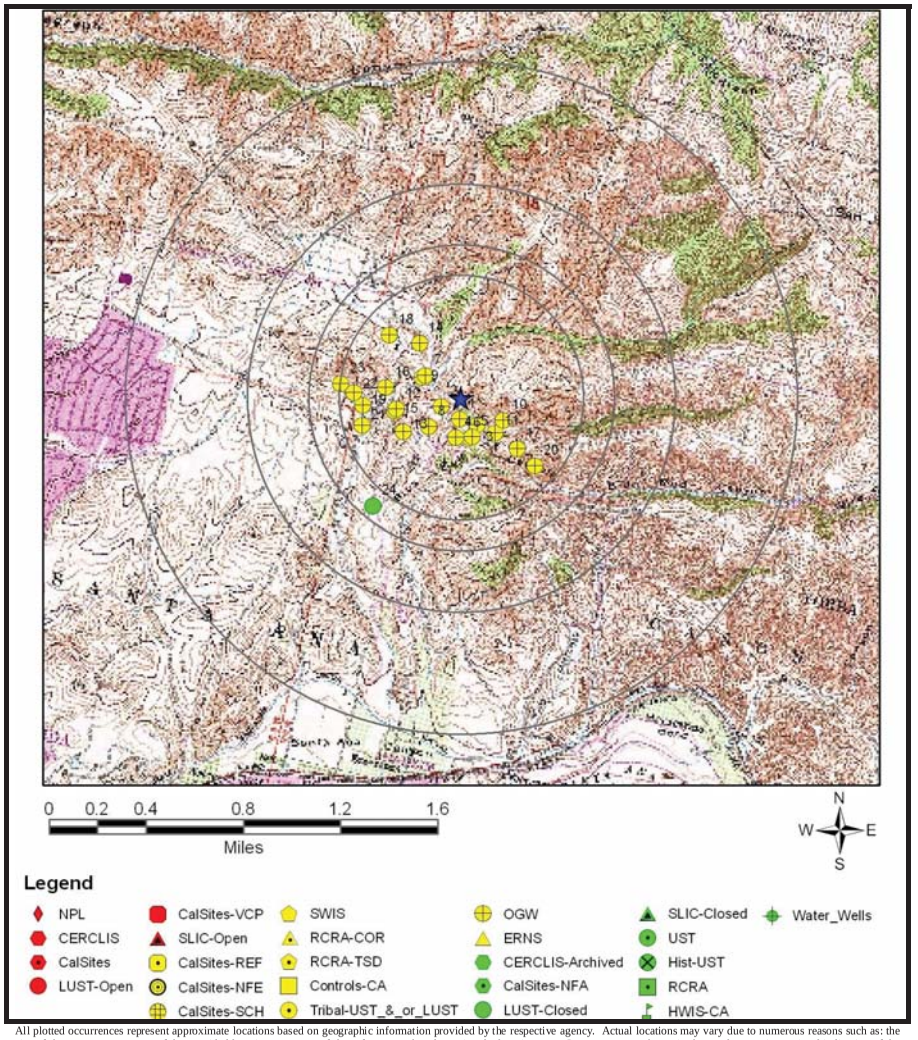
All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. Occurrences are shown in three colors to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in RED are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in YELLOW have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the list should be reviewed for further information. Occurrences shown in GREEN are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore do not likely present an environmental risk.

1/4-MILE RADIUS STREET MAP W/OCCURRENCES

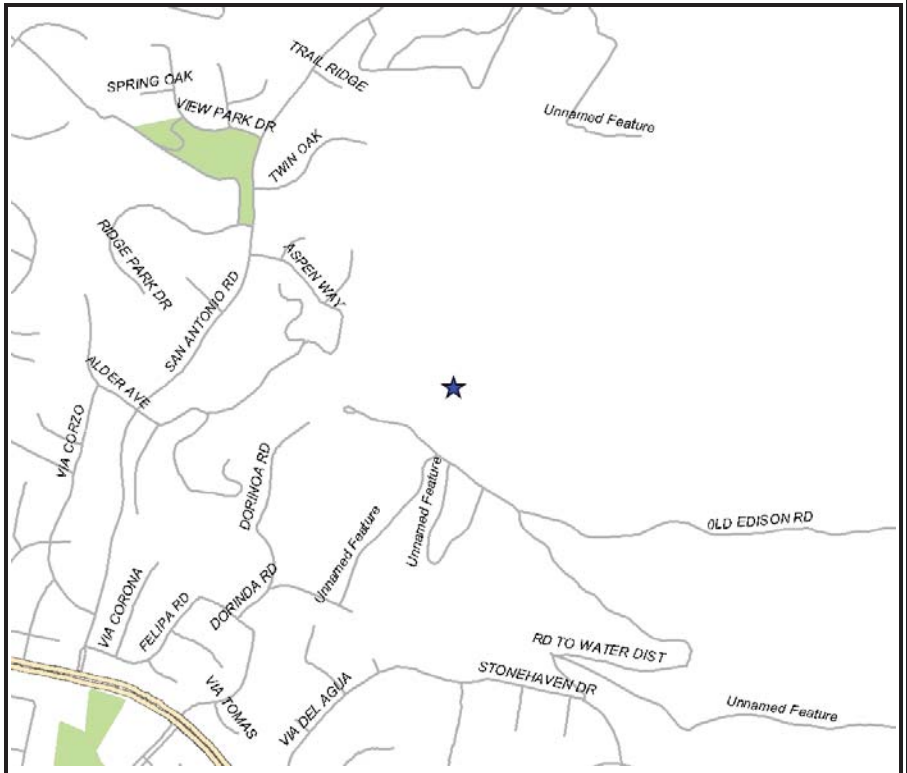


All plotted occurrences represent approximate locations based on geographic information provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. Occurrences are shown in three colors to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in RED are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in YELLOW have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the list should be reviewed for further information. Occurrences shown in GREEN are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore do not likely present an environmental risk.

1-MILE TOPOGRAPHIC MAP W/OCCURRENCES



All plotted occurrences represent approximate locations based on geographic infomation provided by the respective agency. Actual locations may vary due to numerous reasons such as: the size of the property, accuracy of the provided location, accuracy of the software used to determine the location, etc. Occurrences are shown in three colors to give a visual indication of the potential risk of the listed occurrence based on the type of list and the current status of the occurrence. Occurrences shown in RED are locations with known contamination that have not received a "case closed" or "no further action" status. Occurrences shown in YELLOW have been listed by the respective agency, but do not always represent an environmental risk. The detailed status information and description of the list should be reviewed for further information. Occurrences shown in GREEN are occurrences that have active permits or have had contamination in the past but have received a "case closed" or "no further action" status and therefore do not likely present an environmental risk.



1/2-MILE RADIUS STREET MAP

N

Showing all Street Names
Within a ½-mile Radius
Approximate Scale: 1: 16000

PHASE ONE INC.	APNs 351-031-04, -05, and -17 Yorba Linda, CA 92887	FIGURE : JOB: 6482 DATE: 6/19/2006

LISTED OCCURRENCE DETAILS

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.09 miles	SE	1
SITE NAME				**AGENCY ID#**
Santa Ana Canyon Dev Corp				28432
ADDRESS			**CITY**	**ZIP**
DETAILS				
API Number: 05905528 Well Number: 1 Feild: ESPERANZA Map: W1-4 Status Description: completed oil Comments: A District: 1				

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.09 miles	SW	2
SITE NAME				**AGENCY ID#**
Santa Ana Canyon Dev Corp				28437
ADDRESS			**CITY**	**ZIP**
DETAILS				
API Number: 05905529 Well Number: 2 Feild: ESPERANZA Map: W1-4 Status Description: completed oil District: 1				

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.13 miles	SE	3

SITE NAME	AGENCY ID#
Santa Ana Canyon Dev Corp	28433

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905532
Well Number: 2
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.17 miles	S	4

SITE NAME	AGENCY ID#
Santa Ana Canyon Dev Corp	28443

ADDRESS	CITY	ZIP

DETAILS

API Number: 05920334
Well Number: 4
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.17 miles	SE	5

SITE NAME	AGENCY ID#
Santa Ana Canyon Dev Corp	28438

ADDRESS	CITY	ZIP

DETAILS

API Number: 05920333
Well Number: 3
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.17 miles	SE	6

SITE NAME	AGENCY ID#
Santa Ana Canyon Dev Corp	28426

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905531
Well Number: 1
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.17 miles	NW	7

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28446

ADDRESS	CITY	ZIP

DETAILS

API Number: 05921114
Well Number: 7
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil, directionally drilled
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.18 miles	SW	8

SITE NAME	AGENCY ID#
Santa Ana Canyon Dev Corp	28441

ADDRESS	CITY	ZIP

DETAILS

API Number: 05920318
Well Number: 3
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.18 miles	NW	9

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28445

ADDRESS	CITY	ZIP

DETAILS

API Number: 05920931
Well Number: 6
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil, directionally drilled
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.2 miles	SE	10

SITE NAME	AGENCY ID#
Terra Resources, Inc.	28435

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905527
Well Number: 2
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned dry hole
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.2 miles	SE	11

SITE NAME	AGENCY ID#
Gary A. Darnell Trust c/o Darco Inc.	28431

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905526
Well Number: 1
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.27 miles	SW	12

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28447

ADDRESS	CITY	ZIP

DETAILS

API Number: 05921324
Well Number: 8
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.28 miles	SW	13

SITE NAME	AGENCY ID#
Lyle E. Kesselman	28427

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905533
Well Number: 1
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned dry hole
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.28 miles	NW	14

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28440

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905536
Well Number: 3
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.28 miles	SW	15

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28436

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905535
Well Number: 2
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.31 miles	W	16

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28430

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905534
Well Number: 1
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.32 miles	SE	17

SITE NAME	AGENCY ID#
Petrominerals Corp.	28434

ADDRESS	CITY	ZIP

DETAILS

API Number: 05900069
Well Number: 2
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.39 miles	NW	18

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28442

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905537
Well Number: 4
Feild: ESPERANZA
Map: W1-4
Status Description: completed oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.41 miles	SW	19

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28444

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905538
Well Number: 5
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.42 miles	SE	20

SITE NAME	AGENCY ID#
Petrominerals Corp.	28439

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905530
Well Number: 3
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.42 miles	SW	21

SITE NAME	AGENCY ID#
ChevronTexaco	28428

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905541
Well Number: 1
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned dry hole
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.45 miles	W	22

SITE NAME	AGENCY ID#
Columbine Assoc., S. D. Yoelin, Operator	28469

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905539
Well Number: 1
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned oil
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
OGW	Listed	0.5 miles	W	23

SITE NAME	AGENCY ID#
York Petroleum Co.	28470

ADDRESS	CITY	ZIP

DETAILS

API Number: 05905540
Well Number: 2
Feild: ESPERANZA
Map: W1-4
Status Description: plugged and abandoned dry hole
District: 1

LIST	STATUS	DISTANCE	DIRECTION	MAP ID
LUST-Closed	Case Closed	0.57 miles	SW	24

SITE NAME	AGENCY ID#
O C FIRE DEPT STATION #32	T0605901720

ADDRESS	CITY	ZIP
20990 YORBA LINDA	YORBA LINDA	92686

DETAILS

Case Number: 083002399T
Lead Agency: LOCAL AGENCY
Local Case Number: 93UT065
Discovered: 1993-07-19
Stop Date: 9999-09-09
Case Closed: 1994-03-17
Case Type: Soil only affected

RECORD SOURCES SEARCHED

NPL

National Priorities List

Description: The National Priorities List is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.
Agency: United States Environmental Protection Agency
Phone Number: 8004249346
Date of data: 2/2/2006
Date last checked: 4/12/2006
Distance searched: 1 mile
Sites:
None Found

CERCLIS

Comprehensive Environmental Response, Compensation, and Liability Information System

Description: CERCLIS is the Comprehensive Environmental Response, Compensation, and Liability Information System. CERCLIS contains information on hazardous waste sites, potential hazardous waste sites, and remedial activities across the nation, including sites that are on the National Priorities List (NPL) or being considered for the NPL.
Agency: United States Environmental Protection Agency
Phone Number: 8004249346
Date of data: 2/2/2006
Date last checked: 4/12/2006
Distance searched: 0.5 miles
Sites:
None Found

CalSites

CalSites Database or Site Mitigation and Brownfields Reuse Program Database (SMBRPD) or State (NPL and CERCLIS)

Description: The Department of Toxic Substances Control (DTSC) maintains an automated database that contains information on properties in California where hazardous substances have been released, or where the potential for a release exists. This database is known as "CalSites." For over a decade, CalSites has assisted DTSC staff, the public, the Legislature, federal, state and local agencies by providing a brief history of cleanup activities, contaminants of concern, and scheduled future cleanup activities. This category contains properties where hazardous substance releases have been confirmed. These sites are considered to pose the greatest threat to the public and the environment. These confirmed sites are generally high priority, high potential risk, and include military

facilities, state "funded" or Responsible Party (RP) lead, and National Priorities List (NPL) sites.
Agency: CA Environmental Protection Agency, Department of Toxic Substances Control
Phone Number: 9163233400
Date of data: 7/31/2005
Date last checked: 4/17/2006
Distance searched: 1 mile
Sites:
None Found

LUST-Open
Leaking Underground Storage Tanks, Open Cases
Description: The California State Water Resources Control Board's Underground Storage Tank Program keeps a list of all underground storage tanks which have been reported as having had a release. This subset of sites is those that have not yet been updated as having been closed and now have a status of Case Open.
Agency: CA State Water Resources Control Board, Underground Storage Tank Program
Phone Number: 9163415808
Date of data: 4/17/2006
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

CalSites-VCP
Voluntary Cleanup Program Sites
Description: The Department of Toxic Substances Control (DTSC) maintains an automated database that contains information on properties in California where hazardous substances have been released, or where the potential for a release exists. This database is known as “CalSites.” For over a decade, CalSites has assisted DTSC staff, the public, the Legislature, federal, state and local agencies by providing a brief history of cleanup activities, contaminants of concern, and scheduled future cleanup activities. This category contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have requested that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.
Agency: CA Environmental Protection Agency, Department of Toxic Substances Control
Phone Number: 9163233400
Date of data: 7/31/2005
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

SLIC-Open
The Spills, Leaks, Investigation & Cleanup, Open Cases

Description: The Spills, Leaks, Investigation & cleanup (SLIC) Program deals with site investigation and corrective action involving sites not overseen by the Underground Tank Program and the Well Investigation Program. This program is not restricted to particular pollutants or environments; rather, the program covers all types of pollutants (such as solvents, petroleum fuels, and heavy metals) and all environments (including surface and water, groundwater, and the vadose zone). Upon confirming that an unauthorized discharge is polluting or threatens to pollute regional water bodies, the Regional Board oversees site investigation and corrective action. Statutory authority for the program is derived from the California Water Code, Division 7, Section 13304. Guidelines for site investigation and remediation are promulgated in State Board Resolution No. 92-49 entitled Policies and Procedures For Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304.
Agency: CA State Water Resources Control Board (Spills, Leaks, Investigation & cleanup Program)
Phone Number: 2135766717
Date of data: 4/17/2006
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

CalSites-REF
Unconfirmed Properties Referred to Another Local or State Agency
Description: The Department of Toxic Substances Control (DTSC) maintains an automated database that contains information on properties in California where hazardous substances have been released, or where the potential for a release exists. This database is known as "CalSites." For over a decade, CalSites has assisted DTSC staff, the public, the Legislature, federal, state and local agencies by providing a brief history of cleanup activities, contaminants of concern, and scheduled future cleanup activities. This category contains properties that are suspected of being contaminated. These are unconfirmed contaminated properties that need to be assessed using the PEA process.
Agency: CA Environmental Protection Agency, Department of Toxic Substances Control
Phone Number: 9163233400
Date of data: 7/31/2005
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

CalSites-NFE
Unconfirmed Properties Needing Further Evaluation
Description: The Department of Toxic Substances Control (DTSC) maintains an automated database that contains information on properties in California where hazardous substances have been released, or where the potential for a release exists. This database is known as "CalSites." For over a decade, CalSites has assisted DTSC staff, the public, the Legislature, federal, state and local agencies by providing a brief history of cleanup

activities, contaminants of concern, and scheduled future cleanup activities. This category contains properties where contamination has not been confirmed and which were determined as not requiring direct DTSC Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency.
Agency: CA Environmental Protection Agency, Department of Toxic Substances Control
Phone Number: 9163233400
Date of data: 7/31/2005
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

CalSites-SCH
School Property Evaluation Program Properties
Description: The Department of Toxic Substances Control (DTSC) maintains an automated database that contains information on properties in California where hazardous substances have been released, or where the potential for a release exists. This database is known as "CalSites." For over a decade, CalSites has assisted DTSC staff, the public, the Legislature, federal, state and local agencies by providing a brief history of cleanup activities, contaminants of concern, and scheduled future cleanup activities. This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety on the environment they pose.
Agency: CA Environmental Protection Agency, Department of Toxic Substances Control
Phone Number: 9163233400
Date of data: 7/31/2005
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

SWIS
Solid Waste Information System
Description: The Solid Waste Information System (SWIS) database contains information on solid waste facilities, operations, and disposal sites throughout the State of California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.
Agency: CA Integrated Waste Management Board
Phone Number: 9163416320
Date of data: 4/17/2006
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

RCRA-COR

Resource Conservation and Recovery Act - Corrective Actions (CORRACTS)

Description: In 1965, to encourage environmentally sound methods for disposal of household, municipal, commercial, and industrial refuse, Congress passed the first federal law to require safeguards on these activities, the Solid Waste Disposal Act. Congress amended this law in 1976 by passing the Resource Conservation and Recovery Act (RCRA) (pronounced "Ric-ra"). The primary goals of RCRA are to: Protect human health and the environment from the potential hazards of waste disposal. Conserve energy and natural resources. Reduce the amount of waste generated. Ensure that wastes are managed in an environmentally sound manner.

EPA estimates that between 50 and 70 percent of all TSDFs have some degree of environmental contamination requiring detailed investigation and perhaps cleanup. Under a program entitled Corrective Action, EPA has the statutory authority to require permitted and interim status TSDFs to clean up hazardous waste contamination.

Agency: United States Environmental Protection Agency
Phone Number: 8004249346
Date of data: 3/8/2006
Date last checked: 4/12/2006
Distance searched: 1 mile
Sites:
None Found

RCRA-TSD

Resource Conservation and Recovery Act - Treatment, Storage, and Disposal sites

Description: In 1965, to encourage environmentally sound methods for disposal of household, municipal, commercial, and industrial refuse, Congress passed the first federal law to require safeguards on these activities, the Solid Waste Disposal Act. Congress amended this law in 1976 by passing the Resource Conservation and Recovery Act (RCRA) (pronounced "Ric-ra"). The primary goals of RCRA are to: Protect human health and the environment from the potential hazards of waste disposal. Conserve energy and natural resources. Reduce the amount of waste generated. Ensure that wastes are managed in an environmentally sound manner.

Treatment, Storage and Disposal Facility - Facilities that receive hazardous waste from generators or other facilities for treatment, storage or disposal of waste are known as TSDFs.

Agency: United States Environmental Protection Agency
Phone Number: 8004249346
Date of data: 3/8/2006
Date last checked: 4/12/2006
Distance searched: 0.5 miles
Sites:
None Found

Controls-CA

Calsites with Deed Restrictions or other Controls
Description: A deed restricted site is a property where DTSC has placed limits or requirements on future use of the property due to varying levels of cleanup possible, practical, or necessary at the site. The DTSC Site Mitigation and Brownfield's Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. Not all deed restrictions are available at this time.
Agency: CA Environmental Protection Agency, Department of Toxic Substances Control
Phone Number: 9162553745
Date of data: 3/14/2006
Date last checked: 3/14/2006
Distance searched: 0.5 miles
Sites:
None Found

Tribal-UST_&_or_LUST
Tribal Underground Storage Tanks and/or Leaking Underground Storage Tanks
Description: Underground Storage Tanks and/or Leaking Underground Storage Tanks on Native American Land identified by the United States Environmental Protection Agency.
Agency: United States Environmental Protection Agency
Phone Number: 8004249346
Date of data: 3/31/2006
Date last checked: 3/31/2006
Distance searched: 0.5 miles
Sites:
None Found

OGW
California Oil and Gas Wells
Description: The Division of Oil, Gas, and Geothermal Resources (DOGGR) was formed in 1915 to address the needs of the state, local governments, and industry by regulating statewide oil and gas activities with uniform laws and regulations. The Division supervises the drilling, operation, maintenance, and plugging and abandonment of onshore and offshore oil, gas, and geothermal wells, preventing damage to: (1) life, health, property, and natural resources; (2) underground and surface waters suitable for irrigation or domestic use; and (3) oil, gas, and geothermal reservoirs.
Agency: California Department of Conservation, Division of Oil, Gas & Geothermal Resources
Phone Number: 9163231779
Date of data: 1/11/2006
Date last checked: 3/7/2006
Distance searched: 0.25 miles
Sites:
Santa Ana Canyon Dev Corp MapID: 1 Listed

Santa Ana Canyon Dev Corp	MapID: 2	Listed
Santa Ana Canyon Dev Corp	MapID: 3	Listed
Santa Ana Canyon Dev Corp	MapID: 4	Listed
Santa Ana Canyon Dev Corp	MapID: 5	Listed
Santa Ana Canyon Dev Corp	MapID: 6	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 7	Listed
Santa Ana Canyon Dev Corp	MapID: 8	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 9	Listed
Terra Resources, Inc.	MapID: 10	Listed
Gary A. Darnell Trust c/o Darco Inc.	MapID: 11	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 12	Listed
Lyle E. Kesselman	MapID: 13	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 14	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 15	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 16	Listed
Petrominerals Corp.	MapID: 17	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 18	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 19	Listed
Petrominerals Corp.	MapID: 20	Listed
ChevronTexaco	MapID: 21	Listed
Columbine Assoc., S. D. Yoelin, Operator	MapID: 22	Listed
York Petroleum Co.	MapID: 23	Listed

ERNS

Emergency Response Notification System

Description: The primary function of the National Response Center is to serve as the sole national point of contact for reporting all oil, chemical, radiological, biological, and etiological discharges into the environment anywhere in the United States and its territories. In addition to gathering and distributing spill data for Federal On-Scene Coordinators and serving as the communications and operations center for the National Response Team, the NRC maintains agreements with a variety of federal entities to make additional notifications regarding incidents meeting established trigger criteria.
Agency: National Response Center
Phone Number: 8004248802
Date of data: 12/31/2005
Date last checked: 4/12/2006
Distance searched: 0.125 miles
Sites:
None Found

CERCLIS-Archived

CERCLIS sites that have been archived (NFRAP)

Description: The Archive designation means that assessment at a site has been completed and EPA has determined no steps will be taken to designate the site as a

priority by listing it on the National Priorities List (NPL). No further remedial action is planned for these sites under the Superfund Program.
Agency: United States Environmental Protection Agency
Phone Number: 8004249346
Date of data: 2/1/2006
Date last checked: 4/12/2006
Distance searched: 0.5 miles
Sites:
None Found

CalSites-NFA
Properties with No Further Action Determination
Description: The Department of Toxic Substances Control (DTSC) maintains an automated database that contains information on properties in California where hazardous substances have been released, or where the potential for a release exists. This database is known as "CalSites." For over a decade, CalSites has assisted DTSC staff, the public, the Legislature, federal, state and local agencies by providing a brief history of cleanup activities, contaminants of concern, and scheduled future cleanup activities. This category contains properties at which DTSC has made a clear determination that the property does not pose a problem to the environment or to public health. This determination is typically based on findings of a PEA.
Agency: CA Environmental Protection Agency, Department of Toxic Substances Control
Phone Number: 9163233400
Date of data: 7/31/2005
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

LUST-Closed
Leaking Underground Storage Tanks, Closed Cases
Description: The California State Water Resources Control Board's Underground Storage Tank Program keeps a list of all underground storage tanks which have been reported as having had a release. This subset of sites is those that have received closure and now have a status of Case Closed.
Agency: CA State Water Resources Control Board, Underground Storage Tank Program
Phone Number: 9163415808
Date of data: 4/17/2006
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
O C FIRE DEPT STATION #32 MapID: 24 Case Closed

SLIC-Closed

The Spills, Leaks, Investigation & Cleanup, Closed Cases
Description: The Spills, Leaks, Investigation & cleanup (SLIC) Program deals with site investigation and corrective action involving sites not overseen by the Underground Tank Program and the Well Investigation Program. This program is not restricted to particular pollutants or environments; rather, the program covers all types of pollutants (such as solvents, petroleum fuels, and heavy metals) and all environments (including surface and water, groundwater, and the vadose zone). Upon confirming that an unauthorized discharge is polluting or threatens to pollute regional water bodies, the Regional Board oversees site investigation and corrective action. Statutory authority for the program is derived from the California Water Code, Division 7, Section 13304. Guidelines for site investigation and remediation are promulgated in State Board Resolution No. 92-49 entitled Policies and Procedures For Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304.
Agency: CA State Water Resources Control Board (Spills, Leaks, Investigation & cleanup Program)
Phone Number: 2135766717
Date of data: 4/17/2006
Date last checked: 4/17/2006
Distance searched: 0.5 miles
Sites:
None Found

UST
Underground Storage Tanks
Description: The California State Water Resources Control Board keeps this list of registered underground storage tanks.
Agency: CA State Water Resources Control Board, Underground Storage Tank Program
Phone Number: 9163415808
Date of data: 4/17/2006
Date last checked: 4/17/2006
Distance searched: 0.125 miles
Sites:
None Found

Hist-UST
Historical Underground Storage Tanks
Description: The California State Water Resources Control Board keeps the Hazardous Substances Storage Container Information on file. This is a database of historical underground storage tanks that was kept until the late 1980's, but has been discontinued and is no longer updated.
Agency: California State Water Resources Control Board
Phone Number: 9163415851
Date of data: 12/31/1989
Date last checked: 4/17/2006
Distance searched: 0.125 miles
Sites:

None Found

RCRA

Resource Conservation and Recovery Act

Description: In 1965, to encourage environmentally sound methods for disposal of household, municipal, commercial, and industrial refuse, Congress passed the first federal law to require safeguards on these activities, the Solid Waste Disposal Act. Congress amended this law in 1976 by passing the Resource Conservation and Recovery Act (RCRA) (pronounced "Ric-ra"). The primary goals of RCRA are to: Protect human health and the environment from the potential hazards of waste disposal. Conserve energy and natural resources. Reduce the amount of waste generated. Ensure that wastes are managed in an environmentally sound manner.
Agency: United States Environmental Protection Agency
Phone Number: 8004249346
Date of data: 3/8/2006
Date last checked: 4/12/2006
Distance searched: 0.125 miles
Sites:
None Found

HWIS-CA

Hazardous Waste Information Summary

Description: The Hazardous Waste Summary Report (formerly the Tanner Report) is prepared from data extracted from the copies of hazardous waste manifests received each year by DTSC. The volume of manifests is typically 900,000 - 1,000,000 annually, representing approximately 450,000 - 500,000 shipments.
Agency: CA Environmental Protection Agency, Department of Toxic Substances Control
Phone Number: 9162553745
Date of data: 12/31/2002
Date last checked: 4/17/2006
Distance searched: 0.125 miles
Sites:
None Found

Water_Wells

Ground Water Site Inventory for California

Description: The ground-water site inventory consists of records of wells, springs, test holes, tunnels, drains, and excavations in California. Available site descriptive information includes well location information such as latitude and longitude, well depth, aquifer and water levels.
Agency: United States Geological Survey, Water Resources Program
Phone Number: 9162783000
Date of data: 3/20/2006
Date last checked: 3/20/2006
Distance searched: 0.5 miles

Sites:
None Found

OCCURRENCES NOT MAPPED

The following occurrences were not mapped due to various reasons mostly resulting from incomplete or inaccurate address information. All of the following occurrences were determined to share the same zip code as the subject site. General status information is given with each occurrence along with any address information entered by the agency responsible for the list.

No unplottable sites requested.

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APPENDIX E

LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT (ESA)

PREPARED FOR:

SAGE MSREF LAND FUND I, LLC

PROPERTY LOCATION:
APNS 351-031-04, -05, AND -17
YORBA LINDA, CALIFORNIA

PROJECT NO. 6483

LIMITED PHASE II
ENVIRONMENTAL SITE ASSESSMENT (ESA)

PREPARED FOR:

SAGE MSREF LAND FUND I, LLC

PROPERTY LOCATION:

YORBA LINDA TRAVIS PROJECT
APNS 351-031-04, -05, AND -17
YORBA LINDA, CALIFORNIA

JUNE 2006

PHASE ONE INC.

THE NATIONWIDE ENVIRONMENTAL SPECIALISTS

"Setting the Due Diligence Industry Standard"

PHASE ONE INC.

NATIONWIDE ENVIRONMENTAL SPECIALISTS

June 12, 2006

Karin Thompson
Sage MSREF Land Fund I, LLC
3 Corporate Plaza, Suite 102
Newport Beach, CA 92660

RE: ***PHASE ONE* INC. Project No. 6483**
Limited Phase II Environmental Site Assessment (ESA)
Subject Site Location: Yorba Linda Travis Project
APNs 351-031-04, -05, and -17, Yorba Linda, California

Dear Ms. Thompson:

Enclosed is the Limited Phase II Environmental Site Assessment (ESA) Report completed by ***PHASE ONE* INC.** for the site referenced above (See Figure 1, ***Site Location Map)***. The Limited Phase II ESA was undertaken at your request, in accordance with ***PHASE ONE* INC.'s *Standard Terms and Conditions*** and as outlined in ***PHASE ONE* INC.'s *Letters of Intent/Authorization*** for Project No. 6483.

The findings and conclusions of this investigation are based upon the observations of ***PHASE ONE* INC.**'s field personnel and the soil sampling analytical results reported by the contracted analytical laboratory. Our conclusions regarding the environmental condition of the site are summarized in the final section of this report, ***Section 6.0 Conclusions and Recommendations.***

Please do not hesitate to contact us should you have any questions regarding the Limited Phase II Environmental Site Assessment (ESA) Report, or if we can be of additional assistance.

Sincerely,

Eric Exton
Operations Manager

Enclosures

2680 Walnut Avenue, Suite B, Tustin, CA 92780 Tel: (800) 524-8877 • Fax: (714) 669-8025
http://www.phase1.com

LIMITED PHASE II
ENVIRONMENTAL SITE ASSESSMENT (ESA)

PREPARED FOR:

SAGE MSREF LAND FUND I, LLC

PROPERTY LOCATION:
APNS 351-031-04, -05, AND -17
YORBA LINDA, CALIFORNIA

PROJECT NO. 6483

BY

***PHASE ONE* INC.**
2680 Walnut Avenue, Suite B
Tustin, California 92780
(800) 524-8877

TABLE OF CONTENTS

1.0 BACKGROUND INFORMATION

This report presents the results of the Limited Phase II Environmental Site Assessment (ESA) conducted by ***PHASE ONE* INC.** at APNS 351-031-04, -05, and -17, Yorba Linda, California (See Figure 1, ***Site Location Map***). The Limited Phase II Environmental Site Assessment was undertaken at the request of Karin Thompson of Sage MSREF Land Fund, LLC, in accordance with ***PHASE ONE* INC.**'s ***Standard Terms and Conditions***, as outlined in ***PHASE ONE* INC.**'s ***Letter of Intent/Authorization*** for Project N^{o} 6483

At the time of this assessment, the site consisted primarily of vacant land with oil exploration and production facilities located on the southern portion of the property. Structures associated with the facility include eight above ground storage tanks (ASTs), six oil wells, and one abandoned oil well.

This Limited Phase II Environmental Site Assessment work, the soil boring locations and the soil gas sample locations, were based on field observations, oil and gas maps, and client-supplied documents.

2.0 FIELD INVESTIGATION

On May 25, 2006, ***PHASE ONE* INC.** completed ten (10) hand-auger soil borings and a soil gas survey at the subject site. The soil borings were identified as HA1 through HA10. The soil borings were advanced to a maximum depth of two (2) feet below ground surface (bgs). The soil samples collected from HA1 through HA10 were collected at a depth of two feet bgs. In addition, nineteen (19) soil gas samples were taken at a depth of five feet bgs. The soil gas sample locations were identified as SG-1 through SG-18. Two samples were taken at SG-16, resulting in a sample identified as SG-16 Dup.

A total of twenty-nine (29) samples were collected from the ten (10) borings and nineteen (19) soil gas samples. The collected soil samples were submitted to a State-certified analytical laboratory for analysis. All ten (10) soil samples were analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) (USEPA Method 418.1). Two (2) of the ten (10) soil samples were analyzed for Volatile Organic Compounds (VOCs) (USEPA Method 8260B) and SVOCs (USEPA Method 8270C). All nineteen (19) soil gas samples were analyzed onsite for methane gas using a gas chromatograph equipped with a Flame Ionization Detector and an Electron Capture Detector.

Site photographs are presented in **Appendix D**. For the investigation area and the soil boring locations, see **Figure 2**, ***Site Plan***. Upon the completion of the sampling, the boring locations were backfilled with native soil and compacted. The soil gas probe locations were backfilled with hydrated bentonite chips. Soil samples were collected following the sampling protocol included in **Appendix A, *Sampling Protocol.*** The sampling methodology for the soil gas samples is included in **Appendix C, *Analytical Laboratory Reports***.

3.0 SUBSURFACE CONDITIONS ENCOUNTERED

The soils encountered at the subject site within the maximum explored depth of two feet below ground surface (bgs) consisted of light to dark brown clay. Groundwater was not encountered in any of the soil borings. The Soil Boring Logs are on file at ***PHASE ONE* INC.** The field personnel noticed soil discoloration and hydrocarbon odors emanating from the soil samples collected at HA-2 and HA-8. No other unusual conditions were noted during the field work.

4.0 REQUESTED SAMPLE ANALYSES

***PHASE ONE* INC.** requested that each of the ten (10) selected soil samples be analyzed in accordance with at least one of the following United States Environmental Protection Agency (USEPA) Methods:

- USEPA Method 418.1 for TRPH,
- USEPA Method 8260B for VOCs; and
- USEPA Method 8270C for SVOCs.

The nineteen (19) soil gas samples were analyzed for methane on site using a gas chromatograph equipped with a Flame Ionization Detector and an Electron Capture Detector.

5.0 FINDINGS OF ASSESSMENT WORK

The principal findings of ***PHASE ONE* INC.**'s Limited Phase II ESA for all the areas sampled are as follows:

- No levels of VOCs (USEPA Method 8260B), which exceed their respective reporting limit, were detected in the soil samples analyzed.
- No levels of SVOCs (USEPA Method 8270C), which exceed their respective reporting limit, were detected in the soil samples analyzed.
- Levels of Total Recoverable Petroleum Hydrocarbons (TRPH) (USEPA Method 418.1) were detected in two of the soil samples. (68.0 mg/Kg (ppm) in HA2-2 and 280 mg/Kg (ppm) in HA8-2).
- Seventeen of the soil gas samples analyzed contained detectable levels of methane ranging from 1.0 µg/L (ppb) to 11.1 µg/L (ppb).

The following table on the next page presents the summarized results of the laboratory analyses of the soil samples and the soil gas samples collected during this investigation. Copies of the final analytical reports are included in Appendix C, ***Analytical Laboratory Reports***.

SUMMARY OF ANALYTICAL RESULTS

Sample ID and Depth (ft)	USEPA 418.1 TRPH (mg/Kg)	USEPA 8260B VOCs (mg/Kg)	USEPA 8270C SVOCs (µg/Kg)	Methane (µg/L)
HA1-2	ND	N/A	N/A	N/A
HA2-2	68.0	ND	ND	N/A
HA3-2	ND	N/A	N/A	N/A
HA4-2	ND	N/A	N/A	N/A
HA5-2	ND	N/A	N/A	N/A
HA6-2	ND	N/A	N/A	N/A
HA7-2	ND	N/A	N/A	N/A
HA8-2	280	ND	ND	N/A
HA9-2	ND	N/A	N/A	N/A
HA10-2	ND	N/A	N/A	N/A
SG-1	N/A	N/A	N/A	1.0
SG-2	N/A	N/A	N/A	11.1
SG-3	N/A	N/A	N/A	1.3
SG-4	N/A	N/A	N/A	2.2
SG-5	N/A	N/A	N/A	1.4
SG-6	N/A	N/A	N/A	1.5
SG-7	N/A	N/A	N/A	1.2
SG-8	N/A	N/A	N/A	ND
SG-9	N/A	N/A	N/A	2.8
SG-10	N/A	N/A	N/A	1.9
SG-11	N/A	N/A	N/A	ND
SG-12	N/A	N/A	N/A	2.1
SG-13	N/A	N/A	N/A	1.6
SG-14	N/A	N/A	N/A	1.7
SG-15	N/A	N/A	N/A	2.4
SG-16	N/A	N/A	N/A	1.7
SG-16 Dup	N/A	N/A	N/A	1.8
SG-17	N/A	N/A	N/A	2.0
SG-18	N/A	N/A	N/A	2.9

Notes: **ND**: Non-detect (not detected above laboratory detection limits)
N/A Not Analyzed
µg/Kg: micrograms per kilogram or **parts per billion (ppb)**
mg/Kg: milligrams per kilograms or **parts per million (ppm)**
µg/L: micrograms per liter or **parts per billion (ppb)**
Soil and soil gas samples were collected on May 25, 2006.

6.0 CONCLUSIONS AND RECOMMENDATIONS

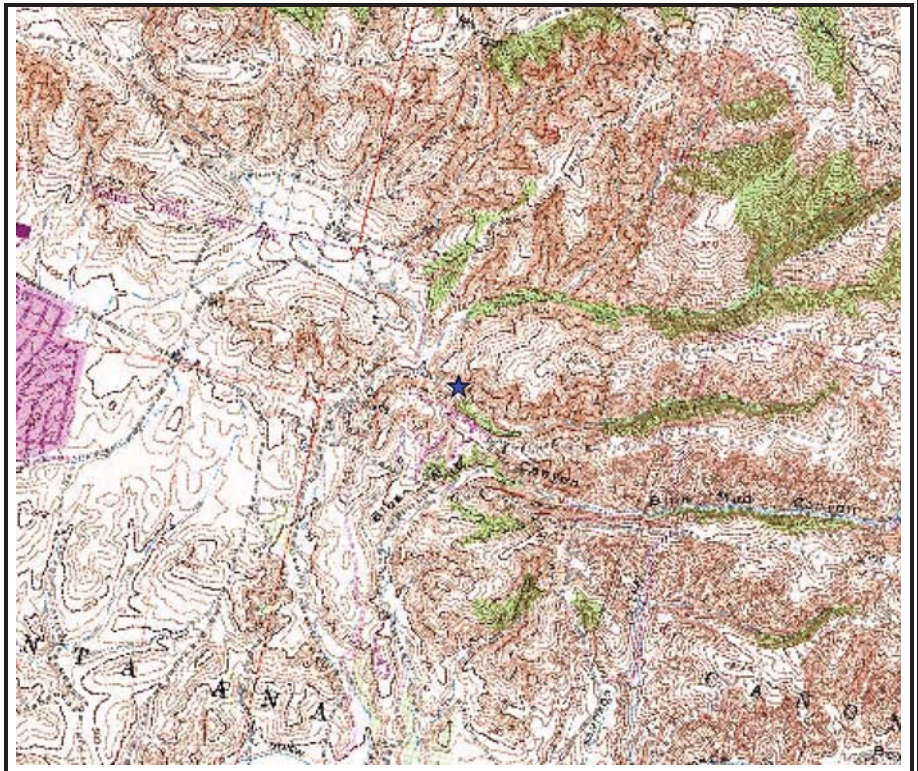
Crude oil-impacted soil exists on site based on visual observations and laboratory analysis. This type of contamination is common at oil exploration and production sites. Prior to the residential redevelopment of the subject site, all the active oil wells, together with ASTs and piping associated with the wells, should be abandoned in accordance with regulatory agency guidelines. All other containers associated with oil production should also be disposed of in accordance with the appropriate applicable permits. Further, any stained soil and soil identified as having elevated levels of TRPH should also be profiled and disposed of in accordance with regulatory agency guidelines. After decommissioning of the oil field on the subject site, contact ***PHASE ONE* INC.** or another consultant to inspect the abandoned wells and perform a review of well decommission documentation. Also, contact the California Division of Oil and Gas to perform a "Construction Site Review" of all seven oil wells on the subject property to determine whether the wells have been abandoned to current standards.

Since low levels of methane were detected in 16 of the 18 locations sampled, methane is likely present throughout the southern portion of the subject site. Methane gas is commonly associated with oil fields and oil production activities. Once the site is graded, any housing pads in the southern portion of the site should be sampled for methane. In addition a random selection of pads on the northern portion of the site should be sampled for methane as well. If methane is present in the northern portion of the site, all of the pads should be sampled. Based on the results of the future methane sampling, methane mitigation measures, by means of the use of moisture barriers and/or sealed utility conduits, and other mitigation measures may have to be implemented.

***PHASE ONE* INC.** attempted to assess the most likely potential sources of contamination; however, it is not possible or feasible to sample all the possible locations where impact from the previous land and/or site use may have occurred. Specific areas of impact may have escaped detection due to

1) Unknown areas where releases or spills may have occurred,
2) Unknown areas of chemicals storage and handling,
3) Difficulty in accessing suspect locations, or
4) The limited extent of the assessments performed.

FIGURES

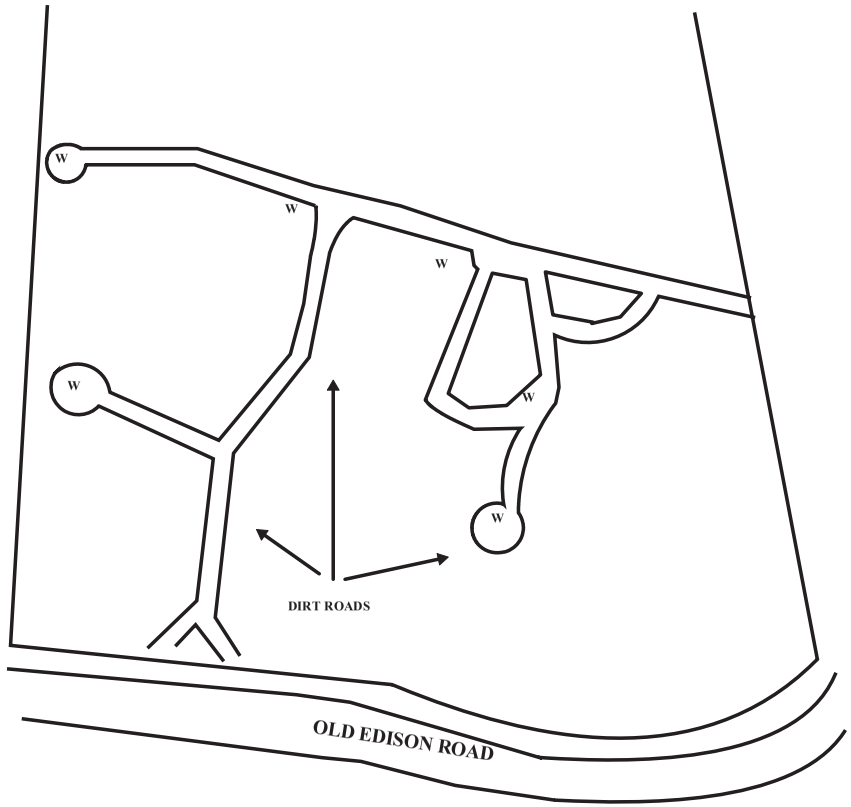


SITE LOCATION MAP

U.S. Geological Survey. Yorba Linda Quadrangle
7.5 Minute Series, Approximate Scale: 1: 33000

N

PHASE ONE INC.	**APNS 351-031-04, -05, AND -17** **YORBA LINDA, CA 92887**	FIGURE: 1 JOB: 6483 DATE: 6/14/2006



KEY
= SUBJECT SITE
W= OIL WELL

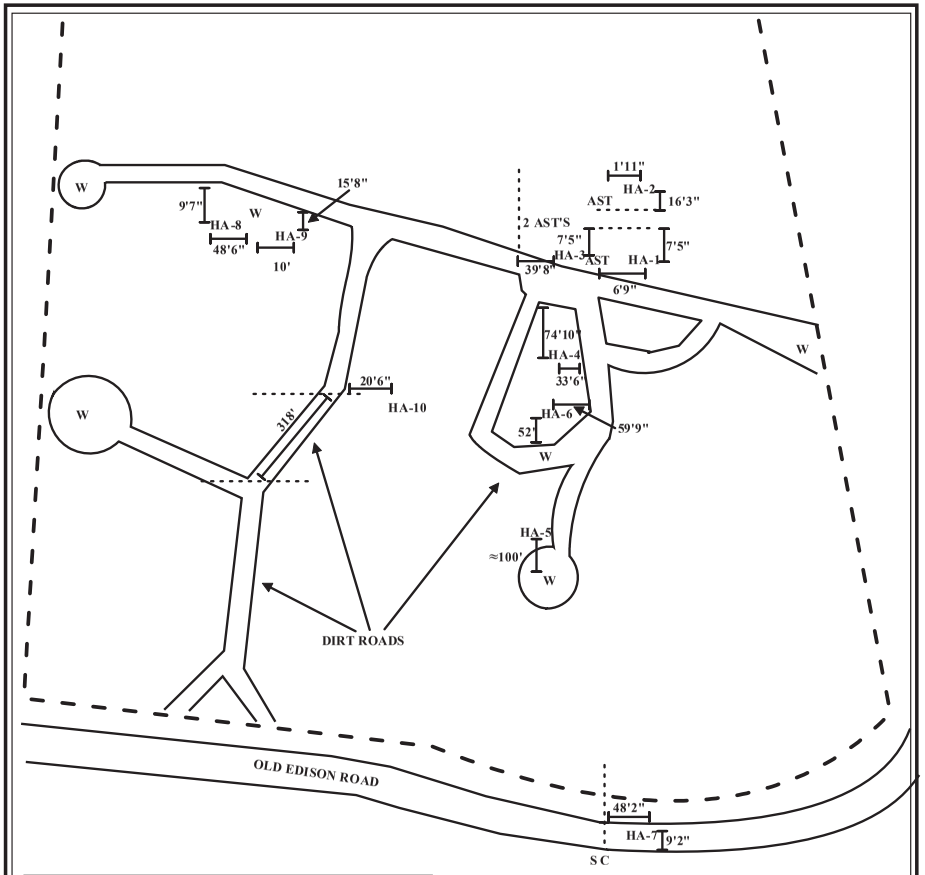
N

PHASE ONE INC.
ENVIRONMENTAL ASSESSMENT SPECIALISTS

APN 351-031-04, -05, AND -17
YORBA LINDA, CA 92886

DRAWN: ML | APPRVD: | DATE: 05/30/06

SITE PLAN	
FIGURE:	2
JOB:	6482
DATE:	05/30/06



KEY
= SUBJECT SITE
= IMAGINARY LINE
W = OIL WELL
AST = ABOVE GROUND STORAGE TANK
HA-# = HAND AUGER LOCATION
SC = SEWAGE COVER

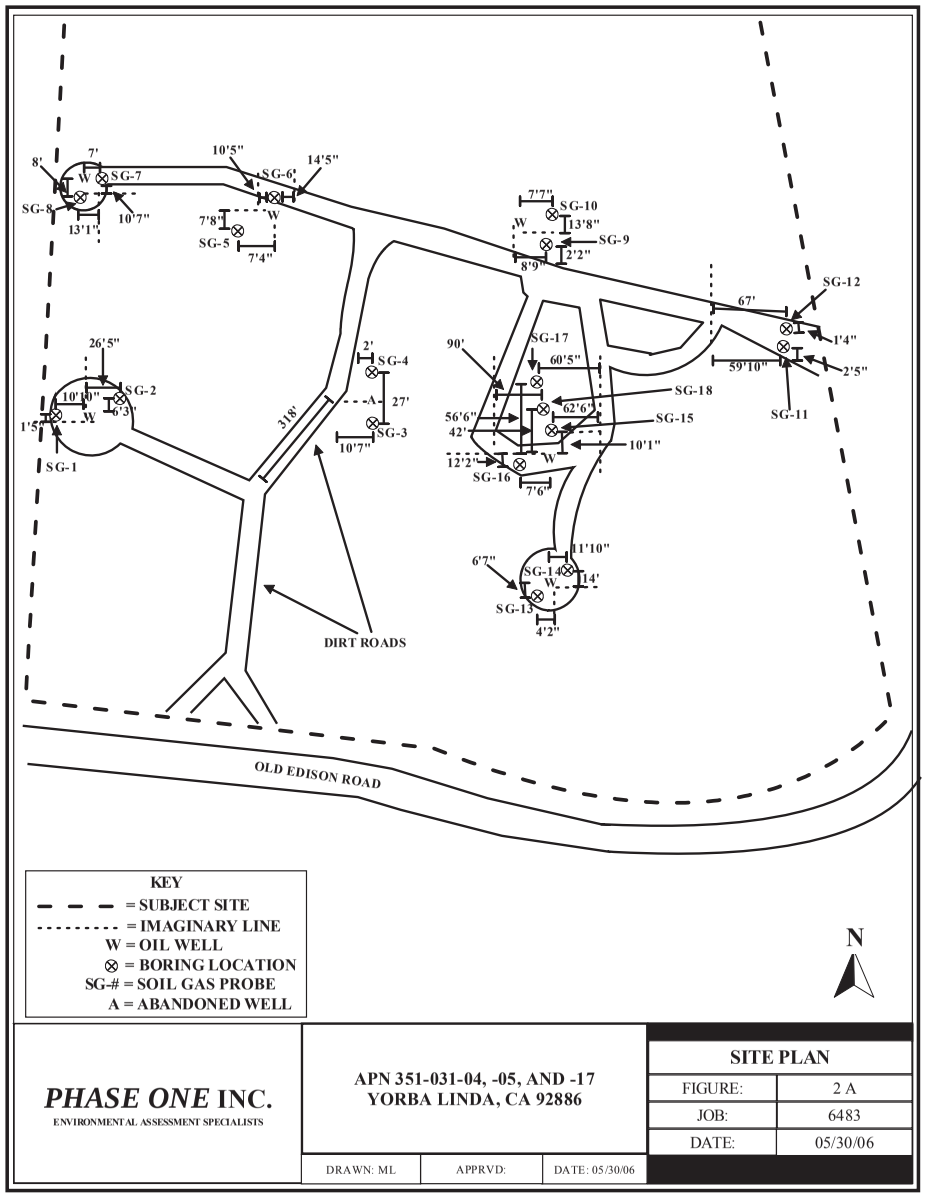
N

PHASE ONE INC.
ENVIRONMENTAL ASSESSMENT SPECIALISTS

APN 351-031-04, -05, AND -17
YORBA LINDA, CA 92886

DRAWN: ML | APPRVD: | DATE: 05/31/06

SITE PLAN	
FIGURE:	2 B
JOB:	6483
DATE:	05/31/06



***PHASE ONE* INC.** ENVIRONMENTAL ASSESSMENT SPECIALISTS	APN 351-031-04, -05, AND -17 YORBA LINDA, CA 92886	SITE PLAN
		FIGURE: 2 A
		JOB: 6483
	DRAWN: ML / APPRVD: / DATE: 05/30/06	DATE: 05/30/06

APPENDICES

APPENDIX A

SAMPLING PROTOCOL

SAMPLING PROTOCOL
APNS 351-031-04, -05, AND -17
YORBA LINDA, CA

INTRODUCTION

This protocol outlines the field procedures utilized for the collection of soil samples as part of ***PHASE ONE* INC.**'s project number 6483.

PRE-FIELD CONDITIONS AND ACTIVITIES

The following activities or procedures were observed as part of the sampling project:

1. Sampling intervals were approved by ***PHASE ONE* INC.** prior to field operations. An environmental professional observed the work, and collected samples at approved intervals.

FIELD PROCEDURES: SUBSURFACE SOIL SAMPLING – GEOPROBE

The following procedures were observed during soil sampling operations:

1. The sampler on the direct-push rig was advanced with a hydraulic mechanism to the target depth. Upon reaching the target depth, the sampler was opened with special tool. The sampler was then driven down two feet and retrieved from the hole.

2. Soil samples from the direct-push rig were collected in a one-inch diameter, two-foot long sleeve. The sample to be submitted for laboratory analysis was cut from the lower portion of the sleeve and capped with Teflon and end caps.

3. After the soil samples were removed, the sampler was disassembled and scrubbed in a water bath with Liquinox®; rinsed in two separate water baths, the last of which contained double-distilled water; and re-assembled with a new sample sleeve.

SAMPLE COLLECTION AND LABORATORY PROTOCOL

After soil sample collection, protocol required that the following guidelines and sample tracking be followed to maintain sample integrity:

1. After retrieval, each soil sample container was sealed, labeled, and chilled. Clean ice chests were used to keep the soil samples at approximately four degrees Celsius until they were delivered to the state-certified analytical chemical laboratory.

2. The samples were delivered directly to the laboratory.

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3. Sample control was maintained by a Chain-Of-Custody (COC) record, which accompanies the samples. The form documented the time, date, and person responsible during each step in the transportation process.

SAMPLE CODING—SOIL SAMPLING

The coded sample numbering system does not reveal the client to the laboratory or other interested parties:

1. A non-water soluble marking pen is used to mark the labels, which are then applied to the sample tubes.

2. **Project Number:** The project number allows ***PHASE ONE* INC.** to access file and client information. Use of the project number maintains the client's confidentiality to subcontractors, while maintaining ***PHASE ONE* INC.**'s ability to identify necessary data:

Example: ***PHASE ONE* INC.** Project Number: 6483
Client Name: Sage MSREF Land Fund, LLC

The soil sample tubes have the project number written on the label as follows:

6483

3. **Sample Number:** ***PHASE ONE* INC.** numbers its soil samples in the following manner:

T-XX-YY

Where:	T	Indicates type of sample symbol (see below)
	X	Indicates boring number
	Y	Indicates depth of sample in feet below ground surface (BGS)

Types of sample symbols (T) include:

SYMBOL		TYPE OF SAMPLE
HA or B	=	Geoprobe soil boring

For example, if a subsurface soil sample (T=HA) was collected from the first soil boring (X=**1**) at the three-foot sampling depth (Y=**3**), the soil sample would be logged as follows:

HA1-3

In review, the number indicates a soil sample from soil boring number one, from a depth of three feet BGS.

4. **Sample Date:** Due to holding time limits for most analyses, it is important to include the date the sample was collected.

Sample Date: May 25, 2006
Sample Labeled: 05/25/06

5. The complete labeling of the soil sample tube includes:

Job Number with appropriate number (i.e. 6483)
Sample Number as described in point three.
Sample Date as labeled on the tube.

The sample identification information, as required by ***PHASE ONE* INC.** for the three-foot soil sample collected from boring SB-1 would be as follows:

6483
HA1-3
05/25/06

APPENDIX B

SOIL BORING LOGS

(Not Included, On File at ***PHASE ONE* INC.)**

APPENDIX C

ANALYTICAL LABORATORY REPORT

OPTIMAL TECHNOLOGY
Specializing in Environmental Field Services

May 26, 2006

Mr. Eric Exton
Phase One, Inc.
2680 Walnut Avenue, Suite B
Tustin, CA 92780

Dear Mr. Exton:

This letter presents the results of the soil vapor investigation conducted by Optimal Technology (Optimal), for Phase One, Inc. on May 25, 2006. The study was performed in a hilly area near Dorinda Road in Yorba Linda, California.

Optimal was contracted to perform a soil vapor survey at this site to screen for possible Methane. The primary objective of this soil vapor investigation was to determine if soil vapor contamination is present in the subsurface soil, and if possible determine potential source area(s).

Sampling Method

Sampling was performed by hydraulically pushing 1/2" steel soil gas probes to a depth of 5.0 feet bgs. An electric rotary hammer drill was used to drill a 1.0-inch hole through the overlying surface to allow probe placement when required. The same electric hammer drill was used to push probes in areas of resistance during placement.

At each sampling location an electric vacuum pump (set to draw 0.2-2.0 liters/min of soil vapor at a maximum vacuum of 100" of water) was attached to the probe and purged prior to sample collection. Vapor samples were obtained in Hamilton gas-tight syringes by puncturing silicone tubing which connects the sampling probe and the vacuum pump. New silicone tubing was used at each sampling point to prevent cross contamination. Samples were immediately injected into the gas chromatograph after collection. New sampling probes were used after each sample with positive results. Equipment blanks using ambient air were collected throughout the day. If significant contamination is detected in these blanks, corrective actions would be taken to identify and eliminate the source, if possible.

All analyses were performed on a laboratory grade Hewlett Packard model 5890 Series II gas chromatograph equipped with a Flame Ionization Detector (FID) and an Electron Capture Detector (ECD). Restec wide bore capillary columns using hydrogen as the carrier gases were used to perform all analysis. All results were collected on a personal computer utilizing Hewlett Packard's PC based chromatographic data collection and handling system.

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Quality Assurance

3-Point Calibration

An initial 3-point calibration was performed on May 25, 2006 by preparing a calibration solution from a pre-mixed standard supplied by Envirosupply, Inc.

The initial three point calibrations consisted of 20, 100 and 500 ul injections of the calibration solution. A calibration factor was generated using a best fit line method using the HP data system. If the r^2 factor generated from this line was not greater than 0.990, an additional three point calibration would have been performed. Method detection limits were calculated to be 1.0 ug/L.

Sample Replicates

A replicate analysis (duplicate) is run when concentrations exceed the calibrated range of the instrument/detector being used. The duplicate sample is diluted using a smaller injection volume to assure that the instrument response falls within 50% of the calibrated range. In addition, a duplicate analysis is run a minimum of once each day to evaluate the reproducibility of the sampling system and instrument. If the difference between samples varies more than 20%, the entire system is evaluated and the inconsistency is determined and corrected, if possible.

Equipment Blanks

Blanks are run at the beginning of each workday, after calibrations and whenever sampling conditions appear to change. New vapor probes are used following each sample with positive results or when probes were damaged during installation. The blanks are collected using an ambient air sample. These blanks checked the septum, syringe, GC column, GC detector and the ambient air. Contamination was not found in any of the blanks analyzed during this investigation. Blank results are given along with the sample results.

Subsurface Conditions

Subsurface soil conditions at this site were predominantly silty-sand from ground surface to 5.0 feet bgs. These soil conditions offered sampling flows at 0-20" water vacuum. Depth to groundwater was unknown at the time of the investigation.

Scope of Work

To achieve the objective of this investigation a total of 18 vapor samples were collected from 18 locations throughout the site. Sampling depths, vacuum readings, purge volume and sampling volumes are given on the analytical results page. All the collected vapor samples were analyzed on-site using Optimal's mobile laboratory.

Results

During this vapor investigation sixteen of the eighteen samples contained levels of Methane. Methane levels ranged from 1.0 ug/L at SG-1 to 11.1 ug/L at SG-2. A complete table of analytical results is included with this report.

Disclaimer

All conclusions presented in this letter are based solely on the information collected by the soil vapor survey conducted by Optimal Technology. Soil vapor testing is only a subsurface screening tool and does not represent actual contaminant concentrations in either the soil and/or groundwater. We enjoyed working with you on this project and look forward to future projects. If you have any questions please contact me at (877) 764-5427.

Sincerely,

Adam Brockman
Project Manager

OPTIMAL TECHNOLOGY
Specializing in Environmental Field Services

SOIL VAPOR RESULTS

Site Name: Dorinda Road, Yorba Linda, CA
Analyst A.B.
Collector: A.B.

Lab Name: Optimal Technology
Inst. ID: HP-5890 Series II
Detectors: FID and ECD

Date: 5/25/06

SAMPLE ID	N/A	BLANK-1	SG-1	SG-2	SG-3	SG-4	SG-5	SG-6	SG-7
Sampling Depth (Ft.)	N/A	N/A	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Purge Volume (ml)	N/A	N/A	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Vacuum (in. of Water)	N/A	N/A	0	0	0	0	0	0	0
Injection Volume (ul)	500/500	500/500	500/500	500/500	500/500	500/500	500/500	500/500	500/500
Dilution Factor (ECD/FID)	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

COMPOUND	DET. LIMIT	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)
Methane	1.0	ND	1.0	11.1	1.3	2.2	1.4	1.5	1.2

Note: ND = Below Listed Detection Limit

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SOIL VAPOR RESULTS

Site Name: Dorinda Road, Yorba Linda, CA
Analyst A.B.
Collector: A.B.

Lab Name: Optimal Technology
Inst. ID: HP-5890 Series II
Detectors: FID and ECD

Date: 5/25/06
Page: 2 of 3

SAMPLE ID	N/A	SG-8	SG-9	SG-10	SG-11	SG-12	SG-13	SG-14	SG-15
Sampling Depth (Ft.)	N/A	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Purge Volume (ml)	N/A	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Vacuum (in. of Water)	N/A	10	0	0	0	10	0	0	20
Injection Volume (ul)	500/500	500/500	500/500	500/500	500/500	500/500	500/500	500/500	500/500
Dilution Factor (ECD/FID)	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

COMPOUND	DET. LIMIT	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)
Methane	1.0	ND	2.8	1.9	ND	2.1	1.6	1.7	2.4

Note: ND = Below Listed Detection Limit

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OPTIMAL TECHNOLOGY
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SOIL VAPOR RESULTS

Site Name: Dorinda Road, Yorba Linda, CA
Analyst A.B.
Collector: A.B.

Lab Name: Optimal Technology
Inst. ID: HP-5890 Series II
Detectors: FID and ECD

Date: 5/25/06
Page: 3 of 3

SAMPLE ID	N/A	SG-16	SG-16 Dup	SG-17	SG-18				
Sampling Depth (Ft.)	N/A	5.0	5.0	5.0	5.0				
Purge Volume (ml)	N/A	1,500	1,500	1,500	1,500				
Vacuum (in. of Water)	N/A	0	0	0	0				
Injection Volume (ul)	500/500	500/500	500/500	500/500	500/500				
Dilution Factor (ECD/FID)	1/1	1/1	1/1	1/1	1/1				

COMPOUND	DET. LIMIT	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)	CONC (ug/L)				
Methane	1.0	1.7	1.8	2.0	2.9				

Note: ND = Below Listed Detection Limit

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ABC Environmental Laboratories, Inc.

Mr. Eric Exton
Phase One, Inc.
2680 Walnut Ave., Suite B
Tustin, CA 92780

5/29/2006

Project: 6483
Project Site: Yorba Linda
Sample Date: 5/25/2006
Lab Job No.: P6E028

Mr. Eric Exton:

Enclosed please find the analytical report for the samples received by ABC Environmental Laboratories on 5/26/06 and analyzed by the following EPA methods:

EPA 8260B (VOCs & Oxygenates)
EPA 418.1 (TRPH)
EPA 8270C (SVOCs)

All analyses have met the QA/QC criteria of this laboratory.

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

ABC Environmental Laboratories is certified by the CA DHS (Certificate No.2584). Thank you for giving us the opportunity to serve you.

Please feel free to call me at (562) 699-7288 if our laboratory can be of further service to you.

Respectfully,

ABC Environmental Laboratories, Inc.

Ken Zheng, M.S.
Laboratory Director Ken

Enclosures

This cover letter is an integral part of this analytical report.

3701 San Gabriel River Parkway
Pico Rivera, CA 90660

Tel/Fax: (562)699-7288
Tel: (562)413-8343

ABC Environmental Laboratories, Inc.

3701 San Gabriel River Pkwy., Pico Rivera, CA 90660
Tel: 562-413-8343
Tel/ Fax: 562-699-7288

CHAIN OF CUSTODY

Page ____ of ____
Lab Job Number P6E028

Client Name: PHASE ONE INC
Address: 2680 WALNUT AVE, STE B, TUSTIN CA 92780
Report Attention: ERIC E.
Phone #: 800 537 6877 Fax: #
Project No./ Name: 6483
Project Site: YORBA LINDA
Sampled By: SB

Client Sample ID	Sample Collection Date	Sample Collection Time	Matrix Type	Sample Preserve	No., type* & size of container
HA1-2	5/25	5010	K	1ST	
HA2-2					
HA3-2					
HA4-2					
HA5-2					
HA6-2					
HA7-2					
HA8-2					
HA9-2					
HA10-2	✓	✓	✓	✓	

Analyses Requested

EPA8260B (VOCs & Oxygenates)	
EPA8260B(BTEX & Oxygenates)	
EPA8021B (BTEX & MTBE)	
EPA8015M / 8015B (Gasoline)	
EPA8015M / 8015B (Diesel)	
EPA8081A (Organochlorine Pesticides)	
EPA 8082 (PCBs)	
EPA418.1 (TRPH)	X
EPA9040/9045 (PH)	
EPA 7000s (Metals)	
CAM 17 Metals	
SVOC 8270C	

Turn Around Time Requested
☐ Rush 8 12 24 Hours
☐ 2-3 days ☐ Normal

Sample Receipt Conditions
☒ Chilled ☒ Intact
☐ Sample Seals

Lab Sample ID	Remarks
P6E028-1	RUN
-2	2
-3	HIGHEST
-4	TRPH
-5	FOR
-6	VOC 8
-7	SVOC
-8	IF NO
-9	DO NOT
-10	RUN
	VOC or
	SVOC

Note: Samples are discarded 30 days after results are reported unless other arrangements are made.

Relinquished By: Company: PHASE ONE Date: 5/26
Relinquished By: Company: ABC Time: 9:00
Received By: Company: ABC Date:

Matrix Code:
DW=Drinking Water
GW=Ground Water
WW=Waste Water
SD=Solid Waste
SL=Sludge
SS=Soil/Sediment
AR=Air
PP=Pure Product

Preservative Code:
IC=Ice
HC=HCl
HN=HNO3
SH=NaOH
ST=Na2S2O3
HS=H2SO4

* Sample Container Types:
T=Tedlar Air Bag
G=Glass Container
ST= Steel Tube
B= Brass Tube
P=Plastic Bottle
V=VOA Vial
E= EnCore

ABC Environmental Laboratories, Inc.

Client:	Phase One, Inc.	Lab Job No.:	P6E028
Project:	6483	Date Sampled:	5/25/2006
Project Site:	Yorba Linda	Date Received:	5/26/2006
Matrix:	Soil	Date Analyzed:	5/26/2006
Batch No.:	CE26-TRPHS	Date Reported:	5/29/2006

EPA 418.1 (TRPH)

Reporting Unit: mg/kg (PPM)

Client Sample ID	Lab ID	DF	TRPH		
Reporting Limit			10.0		
	Method Blank	1	ND		
HA1-2	P6E028-1	1	ND		
HA2-2	P6E028-2	1	68.0		
HA3-2	P6E028-3	1	ND		
HA4-2	P6E028-4	1	ND		
HA5-2	P6E028-5	1	ND		
HA6-2	P6E028-6	1	ND		
HA7-2	P6E028-7	1	ND		
HA8-2	P6E028-8	1	280		
HA9-2	P6E028-9	1	ND		
HA10-2	P6E028-10	1	ND		

ND: Not Detected (at the specified limit)

3701 San Gabriel River Parkway
Pico Rivera, CA 90660

Tel/Fax: (562)699-7288
Tel: (562)413-8343

ABC Environmental Laboratories, Inc.

EPA 418.1 (TRPH)
Batch QA/QC Report

Client:	Phase One, Inc.	Lab Job No.:	P6E028
Project:	6483	Lab Sample ID:	LCS
Matrix:	Soil	Date Analyzed:	5/26/2006
Batch No.:	CE26-TRPHS	Date Reported:	5/29/2006

LCS/LCSD Report

Unit: PPB

Analyte	Spike Conc.	LCS	LCSD	LCS %Rec.	LCSD %Rec.	%RPD	%RPD Accept Limit	%Rec Accept Limit
TRPH	150	150	150	100	100	0	<20	80-120

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ABC Environmental Laboratories, Inc.

Client:	Phase One, Inc.	Lab Job No.:	P6E028
Project:	6483	Date Sampled:	5/25/2006
Project Site:	Yorba Linda	Date Received:	5/26/2006
Matrix:	Soil	Date Analyzed:	5/27/2006
Batch No.:	0527-VOAS	Date Reported:	5/29/2006

EPA 8260B (VOCs & Oxy. by GC/MS, Page 1 of 2)

Reporting Unit: mg/kg (PPM)

Date Analyzed		05/27/06	05/27/06			
Dilution Factor		1	1			
Lab Sample I.D.		P6E028-2	P6E028-8			
Client Sample I.D.		HA2-2	HA8-2			
Compound	RL					
Dichlorodifluoromethane	0.005	ND	ND			
Chloromethane	0.005	ND	ND			
Vinyl Chloride	0.005	ND	ND			
Bromomethane	0.005	ND	ND			
Chloroethane	0.005	ND	ND			
Trichlorofluoromethane	0.005	ND	ND			
1,1-Dichloroethene	0.005	ND	ND			
Carbon disulfide	0.005	ND	ND			
Methylene chloride	0.005	ND	ND			
Trans-1,2-Dichloroethene	0.005	ND	ND			
1,1-Dichloroethane	0.005	ND	ND			
2,2-Dichloropropane	0.005	ND	ND			
Cis-1,2-Dichloroethene	0.005	ND	ND			
Bromochloromethane	0.005	ND	ND			
Chloroform	0.005	ND	ND			
1,1,1-Trichloroethane	0.005	ND	ND			
Vinyl acetate	0.005	ND	ND			
Carbontetrachloride	0.005	ND	ND			
1,1-Dichloropropene	0.005	ND	ND			
1,2-Dichloroethane	0.005	ND	ND			
Benzene	0.005	ND	ND			
Trichloroethene	0.005	ND	ND			
1,2-Dichlorpropane	0.005	ND	ND			
Methyl methacrylate	0.005	ND	ND			
Dibromomethane	0.005	ND	ND			
Bromodichloromethane	0.005	ND	ND			
2-Chloroethyl Vinyl Ether	0.005	ND	ND			
Cis-1,3-Dichloropropene	0.005	ND	ND			
Toluene	0.005	ND	ND			
Trans-1,3-Dichloropropene	0.005	ND	ND			
Ethylmethacrylate	0.005	ND	ND			
1,1,2-Trichloroethane	0.005	ND	ND			
Dibromochloromethane	0.005	ND	ND			
1,2-Dibromoethane (EDB)	0.005	ND	ND			
Tetrachloroethene	0.005	ND	ND			
1,3-Dichloropropane	0.005	ND	ND			
Chlorobenzene	0.005	ND	ND			

RL=Reporting Limit; MB=Method Blank; ND=Not Detected (Below Dilution Factor x RL)

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Tel: (562)413-8343

ABC Environmental Laboratories, Inc.

Client:	Phase One, Inc.	Lab Job No.:	P6E028
Project:	6483	Date Sampled:	5/25/2006
Project Site:	Yorba Linda	Date Received:	5/26/2006
Matrix:	Soil	Date Analyzed:	5/27/2006
Batch No.:	0527-VOAS	Date Reported:	5/29/2006

EPA 8260B (VOCs & Oxy. by GC/MS, Page 2 of 2)

Reporting Unit: mg/kg (PPM)

Date Analyzed		05/27/06	05/27/06			
Dilution Factor		1	1			
Lab Sample I.D.		P6E028-2	P6E028-8			
Client Sample I.D.		HA2-2	HA8-2			
Compound	RL					
1,1,1,2-Tetrachloroethane	0.005	ND	ND			
Ethylbenzene	0.005	ND	ND			
Total Xylene	0.005	ND	ND			
Styrene	0.005	ND	ND			
Bromoform	0.005	ND	ND			
Isopropyl benzene	0.005	ND	ND			
Bromobenzene	0.005	ND	ND			
1,2,3-Trichloropropane	0.005	ND	ND			
1,1,2,2,-Tetrachloroethane	0.005	ND	ND			
Trans-1,4-dichloro-2-butene	0.005	ND	ND			
2-Chlorotoluene	0.005	ND	ND			
n-Propyl benzene	0.005	ND	ND			
4-Chlorotoluene	0.005	ND	ND			
1,3,5-Trimethyl benzene	0.005	ND	ND			
tert-Butylbenzene	0.005	ND	ND			
p-Isopropyl toluene	0.005	ND	ND			
1,2,4-Trimethyl benzene	0.005	ND	ND			
sec-Butylbenzene	0.005	ND	ND			
1,3-Dichlorobenzene	0.005	ND	ND			
1,4-Dichlorobenzene	0.005	ND	ND			
1,2-Dichlorobenzene	0.005	ND	ND			
n-Butylbenzene	0.005	ND	ND			
1,2-Dibromo-3-chloropropan	0.005	ND	ND			
1,2,4-Trichlorobenzene	0.005	ND	ND			
Hexachlorobutadiene	0.005	ND	ND			
Naphthalene	0.005	ND	ND			
1,2,3-Trichlorobenzene	0.005	ND	ND			
Aceton	0.050	ND	ND			
2-Butanone(MEK)	0.025	ND	ND			
MTBE	0.005	ND	ND			
Ethyl-t-butyl Ether(ETBE)	0.005	ND	ND			
Diisopropyl ether (DIPE)	0.005	ND	ND			
TAME	0.005	ND	ND			
t-Butanol	0.020	ND	ND			

RL=Reporting Limit; MB=Method Blank; ND=Not Detected (Below Dilution Factor x RL)

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ABC Environmental Laboratories, Inc.

EPA 8260B (VOCs & Oxygenates)
Batch QA/QC Report

Client:	Phase One, Inc.	Lab Job No.:	P6E028
Project:	6483	Lab Sample ID:	LCS
Matrix:	Soil	Date Analyzed:	5/27/2006
Batch No.:	0527-VOAS	Date Reported:	5/29/2006

LCS/LCSD Report

Unit: ppb

Compound	MB	Spike Conc.	LCS	LCSD	LCS %Rec.	LCSD %Rec.	%RPD	%RPD Accept Limit	%Rec. Accept Limit
1,1-Dichloroethane	ND	20	17.8	17.9	89	90	0.6	20	80-120
Benzene	ND	20	17.9	19.1	90	96	6.5	20	80-120
Trichloroethene	ND	20	17.0	19.2	85	96	12.2	20	80-120
Toluene	ND	20	18.1	19.7	91	99	8.5	20	80-120
Chlorobenzene	ND	20	21.0	21.5	105	108	2.4	20	80-120

MB: Method Blank.

ND: Not Detected at Specified Limit.

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Pico Rivera, CA 90660

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Tel: (562)413-8343

ABC Environmental Laboratories, Inc.

Client:	Phase One, Inc.	Lab Job No.:	P6E028
Project:	6483	Date Sampled:	5/25/2006
Matrix:	Soil	Date Received:	5/26/2006
Batch No.:	0527-SVOAS	Date Reported:	5/29/2006

EPA 8270C (Semi-VOCs by GC/MS, Page 1 of 2)

Reporting Unit: mg/kg (PPM)

Date Analyzed		05/27/06	05/27/06	05/27/06		
Date Extracted		05/26/06	05/26/06	05/26/06		
Dilution Factor		1	1	1		
Lab Sample I.D.		MB	P6E028-2	P6E028-8		
Client Sample I.D.			HA2-2	HA8-2		
Compound	RL					
N-Nitrosodimethylamine	0.33	ND	ND	ND		
Pyridine	0.33	ND	ND	ND		
Aniline	0.33	ND	ND	ND		
Bis(2-chloroethyl) ether	0.33	ND	ND	ND		
Phenol	0.33	ND	ND	ND		
2-Chlorophenol	0.33	ND	ND	ND		
1,3-Dichlorobenzene	0.33	ND	ND	ND		
1,4-Dichlorobenzene	0.33	ND	ND	ND		
Benzyl alcohol	0.66	ND	ND	ND		
1,2-Dichlorobenzene	0.33	ND	ND	ND		
2-Methylphenol	0.33	ND	ND	ND		
Bis(2-chloroisopropyl) ether	0.33	ND	ND	ND		
4-Methylphenol	0.33	ND	ND	ND		
N-Nitroso-di-n-propyl	0.33	ND	ND	ND		
Hexachloroethane	0.33	ND	ND	ND		
Nitrobenzene	0.33	ND	ND	ND		
Isophorone	0.33	ND	ND	ND		
2-Nitrophenol	0.33	ND	ND	ND		
2,4-Dimethylphenol	0.33	ND	ND	ND		
Bis(2-Chloroethoxy) methane	0.33	ND	ND	ND		
Benzoic Acid	0.33	ND	ND	ND		
2,4-Dichlorophenol	0.33	ND	ND	ND		
1,2,4-Trichlorobenzene	0.33	ND	ND	ND		
Naphthalene	0.33	ND	ND	ND		
4-Chloroaniline	0.66	ND	ND	ND		
Hexachlorobutadiene	0.33	ND	ND	ND		
4-Chloro-3-methylphenol	0.66	ND	ND	ND		
2-Methylnaphthalene	0.33	ND	ND	ND		
Hexachlorocyclopentadiene	0.66	ND	ND	ND		
2,4,6-Trichlorophenol	0.33	ND	ND	ND		
2,4,5-Trichlorophenol	0.33	ND	ND	ND		
2-Chloronaphthalene	0.33	ND	ND	ND		
2-Nitroaniline	0.66	ND	ND	ND		
Dimethylphthalate	0.33	ND	ND	ND		
Acenaphthylene	0.33	ND	ND	ND		
2,6-Dinitrotoluene	0.33	ND	ND	ND		

RL=Reporting Limit; MB=Method Blank; ND=Not Detected (Below Dilution Factor x RL)

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ABC Environmental Laboratories, Inc.

Client:	Phase One, Inc.	Lab Job No.:	P6E028
Project:	6483	Date Sampled:	5/25/2006
Matrix:	Soil	Date Received:	5/26/2006
Batch No.:	0527-SVOAS	Date Reported:	5/29/2006

EPA 8270C (Semi-VOCs by GC/MS, Page 2 of 2)

Reporting Unit: mg/kg (PPM)

Date Analyzed		05/27/06	05/27/06	05/27/06		
Date Extracted		05/26/06	05/26/06	05/26/06		
Dilution Factor		1	1	1		
Lab Sample I.D.		MB	P6E028-2	P6E028-8		
Client Sample I.D.			HA2-2	HA8-2		
Compound	RL					
3-Nitroaniline	0.66	ND	ND	ND		
Acenaphthene	0.33	ND	ND	ND		
2,4-Dinitrophenol	0.33	ND	ND	ND		
4-Nitrophenol	0.66	ND	ND	ND		
Dibenzofuran	0.33	ND	ND	ND		
2,4-Dinitrotoluene	0.33	ND	ND	ND		
Diethylphthalate	0.33	ND	ND	ND		
Fluorene	0.33	ND	ND	ND		
4-Chlorophenyl-phenylether	0.33	ND	ND	ND		
4-Nitroaniline	0.33	ND	ND	ND		
1,2-Diphenylhydrazine	0.33	ND	ND	ND		
4,6-Dinitro-2-methylphenol	0.66	ND	ND	ND		
N-Nitrosodiphenylamine	0.33	ND	ND	ND		
4-Bromophenyl-phenylether	0.33	ND	ND	ND		
Hexachlorobenzene	0.33	ND	ND	ND		
Pentachlorophenol	0.66	ND	ND	ND		
Benzidine	0.33	ND	ND	ND		
Phenanthrene	0.33	ND	ND	ND		
Anthracene	0.33	ND	ND	ND		
Carbazole	0.33	ND	ND	ND		
Di-n-butylphthalate	0.33	ND	ND	ND		
Fluoranthene	0.33	ND	ND	ND		
Pyrene	0.33	ND	ND	ND		
Butylbenzylphthalate	0.33	ND	ND	ND		
Benzo(a)anthracene	0.33	ND	ND	ND		
3,3'-Dichlorobenzidine	0.66	ND	ND	ND		
Chrysene	0.33	ND	ND	ND		
Bis(2-Ethylhexyl) phthalate	0.33	ND	ND	ND		
Di-n-octylphthalate	0.33	ND	ND	ND		
Benzo(b)fluoranthene	0.33	ND	ND	ND		
Benzo(k)fluoranthene	0.33	ND	ND	ND		
Benzo(a)pyrene	0.33	ND	ND	ND		
Indeno(1,2,3-cd)pyrene	0.33	ND	ND	ND		
Dibenzo(a,h)anthracene	0.33	ND	ND	ND		
Benzo(g,h,i)perylene	0.33	ND	ND	ND		

RL=Reporting Limit; MB=Method Blank; ND=Not Detected (Below Dilution Factor x RL)

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Tel: (562)413-8343

ABC Environmental Laboratories, Inc.

EPA 8270C (SVOCs)
Batch QA/QC Report

Client:	Phase One, Inc.	Lab Job No.:	P6E028
Project:	6483	Lab Sample ID:	LCS
Matrix:	Soil	Date Analyzed:	5/27/2006
Batch No.:	0527-SVOAS	Date Reported:	5/29/2006

LCS/LCSD Report

Unit: PPM

Compound	Spike Conc.	LCS	LCSD	LCS %Rec.	LCSD %Rec.	%RPD	%RPD Accept Limit	%Rec. Accept Limit
Phenol	5.0	2.40	2.45	48	49	2.1	40	20-130
2-Chlorophenol	5.0	2.97	3.02	59	60	1.7	40	24-134
1,4-Dichlorobenzene	5.0	2.67	2.68	53	54	0.4	40	36-124
N-Nitroso-di-n-propylamine	5.0	2.91	3.09	58	62	6.0	40	41-230
1,2,4-Trichlorobenzene	5.0	3.78	3.71	76	74	1.9	40	44-142
4-Chloro-3-methylphenol	5.0	4.02	4.09	80	82	1.7	40	22-147
Acenaphthene	5.0	3.67	3.70	73	74	0.8	40	47-145
4-Nitrophenol	5.0	3.83	3.76	77	75	1.8	58	20-140
2,4-Dinitrotoluene	5.0	6.51	6.53	130	131	0.3	40	39-139
Pentachlorophenol	5.0	3.52	3.52	70	70	0.0	51	20-150
Pyrene	5.0	4.15	4.25	83	85	2.4	30	30-140

ND: Not Detected (at the specified limit).

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APPENDIX D

PHOTOGRAPHS

Location of HA1

Location of HA-2

Location of HA-3

Location of HA-5

Location of HA-4

Location of HA-6

Location of HA-7

Location of HA-9

Location of HA-8

Location of HA-10

APPENDIX E

LIMITATIONS

To achieve the study objectives stated in this report, we were required to base ***PHASE ONE* INC.**'s conclusions and recommendations on the best information available during the period the investigation was conducted and within the limits prescribed by ***PHASE ONE* INC.**'s client in the contract/authorization agreement and standard terms and conditions.

***PHASE ONE* INC.**'s professional services were performed using that degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar fields. The findings were mainly based upon examination of historic records, governmental agencies lists, and laboratory analytical reports. Recommendations are based on the historic land use of the subject property, as well as features noted during the site walk and Phase II assessment. The absence of potential gross contamination sources, historic or present, does not necessarily imply that the subject property is free of any contamination. This report only represents a "due diligence" effort as to the integrity of the subject property. No other warranty or guarantee, expressed or implied, is made as to the professional conclusions or recommendations contained in this report. The limitations contained within this report supersede all other contracts or scopes of work, implied or otherwise, except those stated or acknowledged herewith.

This report is not a legal opinion. It does not necessarily comply with requirements defined in any environmental law such as the "innocent landowner defense" or "due diligence inquiry." Only legal counsel retained by the client is competent to determine the legal implications of any information, conclusions, or recommendations in this report.

The findings, conclusions, recommendations, and professional opinions contained in this report have been prepared by the staff of ***PHASE ONE* INC.**, in accordance with generally accepted professional practices.

Sample results should not be construed as conclusive and binding in any way. All sampling conducted is only for the purposes of general screening and does not imply that all materials, locations, or hazardous materials have been identified nor was the sampling intended to identify every instance of the materials sampled. ***PHASE ONE* INC.** only relays the information supplied by the laboratory conducting the analysis.

If any controversy or claim arises out of or relates to this contract, or breach thereof, and if said dispute cannot be settled through negotiation, the parties shall submit to binding arbitration in accordance with the Construction Industry Arbitration Rules of the AAA, and judgment upon the award rendered by the arbitrator(s) may be entered in any court having jurisdiction thereof.

REPORT SIGNATURE SHEET AND CERTIFICATION

The undersigned hereby certifies that:

The following people have prepared, written, and/or reviewed the Phase II Environmental Assessment Report. All the below parties have, in good faith, conducted their respective project responsibilities using that degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar fields.

All parties have acted in good faith and have no known relationship with the subject site, owners, buyers, or any other entity associated with the subject site. All respective project responsibilities have been conducted independently, and with no conflict of interest.

The statements of fact contained in this report are true and correct based on materials reviewed.

The reported analyses, opinions, and conclusions are personal, unbiased, professional, and limited only by the assumptions and qualifications stated herein. Compensation is not contingent upon an action or an event resulting from the analyses, opinions, or conclusions included in this report. Nor is it contingent upon the use of this report.

The investigation has been performed in accordance with all applicable legal requirements and in accordance with accepted practices prevailing in the environmental assessment and asbestos consulting industries. The personnel who performed the investigation are properly licensed and certified in accordance with the requirements of all federal, state, and local laws, rules, and regulations.

We have no present or prospective interest in the subject property or the parties involved.

If necessary, expert testimony and other legal appearances will be provided for a reasonable fee to be arranged.

The report has been prepared in conformance with the Client's Environmental Policy.

Eric Exton
Operations Manager

Nadine Kieselbach
Copy Editor

Jay Badiei, PG #6744

PROFESSIONAL GEOLOGIST
JALIL JAY BADIEI
No. 6744
Exp 12/31/07
STATE OF CALIFORNIA

SITE CONTACT/OWNER INTERVIEW

#PI01

JOB# 6482 TODAY'S DATE: 6/2/06

INTERVIEWEE NAME: Hans R. Travis TITLE: Trustee

ADDRESS: 406 Calle Mesita, Santa Barbara, CA 92673 PHONE: 949-496-9319

RELATIONSHIP TO SUBJECT PROPERTY: Owner Trustee

OF YEARS RELATIONSHIP HAS EXISTED: 11

CURRENT OWNER OF SITE: Travis Ranch Trust HOW LONG AS OWNER: 11

SITE NAME: Vacant Land PHONE #

SITE ADDRESS: (address/city/state/zip) APN 351-031-004, 05

PREVIOUS STREET NAMES/NUMBERS:

LEASED OR SUBLEASED BUILDINGS OR SPACE:

NEIGHBORING PROPERTY TYPES (commercial, industrial, residential, etc.):

GENERAL BUSINESS TYPE/PRESENT PROPERTY USE: Leased for oil production

SITE PARCEL # 351-031-004,05 IF APARTMENTS, HOW MANY UNITS:

TOTAL # OF BUILDINGS OR STRUCTURES: None GRAND TOTAL SQ. FOOTAGE:

	Use	Date Built	# of Stories	# Units/Offices	Square Footage
Building #1					
Building #2					
Building #3					
Building #4					
Building #5					
Building #6					

PAST PROPERTY USES (include dates)

PROPERTY STATUS AT TIME OF CONSTRUCTION (vacant? prior bldgs. demo'ed?)

LOT SIZE (ACREAGE): ± 71 GROUNDWATER DEPTH/FLOW DIRECTION: ?

POTABLE WATER SUPPLY: Private Wells Municipal: Supplier

SEWAGE DISPOSAL: Septic System Municipal: Supplier

AGE OF SEWER LINES/SYSTEM:

MEANS OF HEATING/COOLING (gas, electric, heating oil, radiators/steam boilers)

FUEL SOURCE FOR HEATING/AIR CONDITIONING:

SITE CONTACT/OWNER INTERVIEW

#PI01

ARE THERE NOW, OR HAVE THERE BEEN IN THE PAST, ANY OF THESE ITEMS ON SITE:

Y = Yes **If Yes, indicate as much detail as possible**
N = No
? = Don't Know

		Comments, as applicable
	QUESTIONS FOR ALL SITES	
X	rivers, creeks, streams, drainage ditches	Tributaries to Lake Los Carneros
N	ponds or lakes	
N	fill material (prior to or since construction)	
N	storm water drains in parking lots	
N	gw wells	
X	oil or gas wells	
N	hazardous materials (other than janitorial)	
N	hazardous wastes: disposal permit?	
N	hazardous materials management plan/business plan	
N	MSDSs - Material Safety Data Sheets on file?	
Y	above-ground storage tanks: Permits?	Oil holding tanks
N	underground storage tanks: Permits?	
N	vent or fill pipes or access ways indicating a fill pipe to an underground storage area	
N	electrical transformers	
N	surface impoundments: Permits?	
N	landfills: Permits?	

QUESTIONS FOR SITES THAT STORE or USE HAZARDOUS MATERIALS and/or GENERATE HAZARDOUS WASTES (other than janitorial)

____	storm water management plan	
____	hazardous waste generator notices or reports	
____	55-gallon drums of raw materials or waste	
____	wastewater discharge points to sewer: wastewater permit?	
____	wastewater discharge points to river/stream: NPDES?	
____	clarifiers: Permits?	
____	sumps: Permits?	
____	trenches	
____	floor drains or floor sinks	
____	community right to know plan	
____	safety, preparedness/prevention, spill prevention plans	

ADDITIONAL INFORMATION:

SITE CONTACT/OWNER INTERVIEW

#PI01

ADDITIONAL QUESTIONS	Yes	No	Don't Know
1. Can you provide a plot plan showing the site property and adjacent buildings?		X	
2. Can you provide a site plan showing the interior walls of the structure(s)?		X	
3. Does the facility have any aerial photographs of the site?			X
4. Has the subject property been used as any of the following: gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?		X	
5. Other than stains from parked cars, has there been, or is there any, stained soil of any kind on the subject property?	X		
6. Has there been, or are there any, stained surfaces inside the building on the subject property (concrete or tile floors, etc.)?		X	
7. Other than food preparation, are there any odors associated with operations at the site?			X
8. Are you aware of any regulatory compliance audit reports, geotechnical reports, Phase 1 environmental reports, or Phase 2 subsurface reports prepared for the subject site?	X		
9. Do you know of any notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the subject site, or relating to environmental liens encumbering the subject site?		X	
10. Do you know of any pending, threatened or past *litigation or administrative proceedings* relevant to hazardous substances or petroleum products in, on, or from the property?		X	
11. Do you know of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?		X	
12. Do you know of any environmental concerns associated with the subject site?	X		
13. Do you know of any environmental concerns on an adjacent or nearby properties?		X	

SITE CONTACT/OWNER INTERVIEW

#PI01

OTHER NOTES:

_____

_____

_____

_____

_____

_____

INTERVIEWER: _____

SITE CONTACT/OWNER INTERVIEW

#PI01

JOB# 6482 TODAY'S DATE: 6/13/06

INTERVIEWEE NAME: Linda Rodger TITLE: CO-TRUSTEE

ADDRESS: 21715 Sutherland Drive PHONE: —

Yorba Linda 92887 CA

RELATIONSHIP TO SUBJECT PROPERTY: CO-TRUSTEE

OF YEARS RELATIONSHIP HAS EXISTED: 2+ YEARS

CURRENT OWNER OF SITE: Virginia Richards Trust HOW LONG AS OWNER: 25 YEARS

SITE NAME: N/A PHONE # _____

SITE ADDRESS: (address/city/state/zip) N/A

PREVIOUS STREET NAMES/NUMBERS: N/A

LEASED OR SUBLEASED BUILDINGS OR SPACE: N/A

NEIGHBORING PROPERTY TYPES (commercial, industrial, residential, etc.): VACANT LAND + Residential

GENERAL BUSINESS TYPE/PRESENT PROPERTY USE: VACANT + oil production

SITE PARCEL # N/A IF APARTMENTS, HOW MANY UNITS: N/A

TOTAL # OF BUILDINGS OR STRUCTURES: NONE GRAND TOTAL SQ. FOOTAGE: _____

	Use	Date Built	# of Stories	# Units/Offices	Square Footage
Building #1		N/A			
Building #2					
Building #3					
Building #4					
Building #5					
Building #6					

PAST PROPERTY USES (include dates) VACANT + oil production

PROPERTY STATUS AT TIME OF CONSTRUCTION (vacant? prior bldgs. demo'ed?) N/A

LOT SIZE (ACREAGE): 11.1± ACRES GROUNDWATER DEPTH/FLOW DIRECTION: UNK.

POTABLE WATER SUPPLY: N/A Private Wells _____ Municipal: Supplier _____

SEWAGE DISPOSAL: Septic System N/A Municipal: Supplier

AGE OF SEWER LINES/SYSTEM: N/A

MEANS OF HEATING/COOLING (gas, electric, heating oil, radiators/steam boilers) N/A

FUEL SOURCE FOR HEATING/AIR CONDITIONING: N/A

N/A = NOT AVAILABLE + UNKNOWN

SITE CONTACT/OWNER INTERVIEW

#PI01

ARE THERE NOW, OR HAVE THERE BEEN IN THE PAST, ANY OF THESE ITEMS ON SITE:

Y = Yes If Yes, indicate as much detail as possible
N = No
? = Don't Know

		Comments, as applicable
	QUESTIONS FOR ALL SITES	
Y	rivers, creeks, streams, drainage ditches	
N	ponds or lakes	
?	fill material (prior to or since construction)	
N	storm water drains in parking lots	
?	gw wells	
Y	oil or gas wells	
?	hazardous materials (other than janitorial)	
?	hazardous wastes: disposal permit?	
?	hazardous materials management plan/business plan	
?	MSDSs - Material Safety Data Sheets on file?	
Y	above-ground storage tanks: Permits?	
?	underground storage tanks: Permits?	
?	vent or fill pipes or access ways indicating a fill pipe to an underground storage area	
?	electrical transformers	
?	surface impoundments: Permits?	
?	landfills: Permits?	

QUESTIONS FOR SITES THAT STORE or USE HAZARDOUS MATERIALS and/or GENERATE HAZARDOUS WASTES (other than janitorial)

UNKNOWN

___	storm water management plan	
___	hazardous waste generator notices or reports	
___	55-gallon drums of raw materials or waste	
___	wastewater discharge points to sewer: wastewater permit?	
___	wastewater discharge points to river/stream: NPDES?	
___	clarifiers: Permits?	
___	sumps: Permits?	
___	trenches	
___	floor drains or floor sinks	
___	community right to know plan	
___	safety, preparedness/prevention, spill prevention plans	

ADDITIONAL INFORMATION: N/A

SITE CONTACT/OWNER INTERVIEW

#PI01

ADDITIONAL QUESTIONS	Yes	No	Don't Know
1. Can you provide a plot plan showing the site property and adjacent buildings?		✓	
2. Can you provide a site plan showing the interior walls of the structure(s)?		✓	
3. Does the facility have any aerial photographs of the site?			✓
4. Has the subject property been used as any of the following: gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard, or landfill, or as a waste treatment, storage, disposal, processing, or recycling facility?			✓
5. Other than stains from parked cars, has there been, or is there any, stained soil of any kind on the subject property?			✓
6. Has there been, or are there any, stained surfaces inside the building on the subject property (concrete or tile floors, etc.)?			✓
7. Other than food preparation, are there any odors associated with operations at the site?			✓
8. Are you aware of any regulatory compliance audit reports, geotechnical reports, Phase 1 environmental reports, or Phase 2 subsurface reports prepared for the subject site?			✓
9. Do you know of any notices or other correspondence from any government agency relating to past or current violations of environmental laws with respect to the subject site, or relating to environmental liens encumbering the subject site?			✓
10. Do you know of any pending, threatened or past *litigation or administrative proceedings* relevant to hazardous substances or petroleum products in, on, or from the property?			✓
11. Do you know of any notices from any governmental entity regarding any possible violation of environmental laws or possible liability relating to hazardous substances or petroleum products?			✓
12. Do you know of any environmental concerns associated with the subject site?			✓
13. Do you know of any environmental concerns on an adjacent or nearby properties?			✓

SITE CONTACT/OWNER INTERVIEW

#PI01

OTHER NOTES:

INTERVIEWER: David J. Huarte

APPENDIX F

INTERVIEW NOTES

APPENDIX G

MISCELLANEOUS INFORMATION

APPENDIX H

REFERENCES

APPENDIX H

REFERENCES

AGENCIES

See Appendix B for a comprehensive list of the state and local agencies consulted for this project.

PUBLICATIONS

Basic Guide for Environmental Inspection. EEA. 1991.

Environmental Evaluations for Real Estate Transactions. Government Institutes, Inc. 1989.

"Flatland Deposits." Geological Survey Professional Paper No. 943. 1991.

"Geologic Principles for Prudent Land Use." Geological Survey Professional Paper No. 946. 1990.

"Groundwater Geology of the Valley." California Earthquakes: California Division of Mines and Geology Bulletin. 1975.

Hazardous Materials, Substances and Wastes Compliance Guide. 1990-1991.

Oil and Gas Field and Wildcat Maps. California Department of Conservation, Division of Oil and Gas. Various dates.

"Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles." State of California, Department of Water Resources, Bulletin No. 104. 1961 and 1988.

Principles of Contaminant Hydrogeology. Palmer, Christopher M. 1992.

Protection of Public Water Supplies from Groundwater Contamination: A Publication of the Environmental Protection Agency.

"Radon: A Homeowner's Guide to Detection and Control." 1987 and 1989.

Report and General Soil Map. California Soil Conservation Service, United States Department of Agriculture. 1967 and 1969.

The Sourcebook for Aerial Photographs, California edition. 1992.

Underground Storage Tank Corrective Action Technologies: A Publication of the Environmental Protection Agency. 1987.

APPENDIX I

RESUMES

ERIC D. KIESELBACH
President and CEO

Education

B.S. Environmental Resource Sciences: University of California, Davis, 1986
Emphasis: Water Sciences, Environmental Toxicology, Soil Sciences

Hazardous Waste Certificate Program: University of California, Davis
Additional classes in: Risk Assessment, Hazmat, Advanced Hazmat, Environmental Regulations, SARA Compliance

Licenses

- California State Registered Assessor, REA #02881
- Building Inspector #1607
- Management Planner #1680
- Project Designer #1839
- Contract Supervisor #2276

Special Qualifications

Site investigation, assessment, and remediation of major commercial and industrial properties — in particular, large manufacturing plants requiring major remediation. Extensive knowledge of biotreatment of hydrocarbon-contaminated soils using engineered and endemic microbes. Designed, organized, and taught 40-hour SARA training program. Familiar with CFR 29, 40, and 49, SARA, CERCLA, TOSCA, RCRA, TITLE 22, Luft Manual. Significant general contractor experience, knowledgeable in all phases of commercial construction. Extensive experience in design, construction, and operation of all types and phases of remedial treatment systems.

Summary of Experience

1991 - Phase One, Inc., Tustin, California - Current

As President and Chief Executive Officer, Mr. Kieselbach oversees the entire environmental assessment business conducted by Phase One, Inc., including orchestrating its rapid growth and success.

12 years - EDK Construction, Sacramento, California

Mr. Kieselbach owned and operated this company which constructed numerous custom homes, commercial and apartment projects. He managed and oversaw multi-million dollar projects with profitable results.

3 years - U.S. Geological Survey, California

As a Hydrogeological Technician, Mr. Kieselbach performed soil and groundwater sampling, helped set up and design soil testing and soils laboratory, and helped write procedures and perform field tests using sophisticated electronic equipment.

5 years - Exceltech Inc., a full-service environmental company, Irvine, California

As an officer and Vice President, Mr. Kieselbach ran the Southern California operations for Exceltech Inc., which included the Geoscience, Engineering, Remediation, and ACT (Assessments, Compliance, and Training) Departments. He undertook major work for such companies as Shell Oil, Conoco, and Kaiser Aluminum. He was also corporate safety officer for four of the five years.

ERIC EXTON
Operations Manager

Education

Numerous college courses focusing on science, computers, and business including: biology, micro-biology, environmental biology, chemistry, statistics, anatomy and physiology, programming in BASIC, Programming in C, programming in Pascal, advanced data structures, database programming, accounting and business law.

Licenses and Certifications

- Microsoft Certified Systems Engineer (MCSE) #44842
- Microsoft Certified Professional in Microsoft Windows, Windows NT, Networking, SQL Server Administration, and SQL Server Implementation

Special Qualifications

Mr. Exton has extensive experience in managing and supervising technical and administrative staff as well as in managing remote offices. Mr. Exton has also managed large, multi-site projects that have encompassed sites in multiple states. In addition, he is an expert in computer programming, networking, databases, and systems administration.

Summary of Experiences

1992 – Phase One, Inc., Tustin, California – Current

Mr. Exton has written, researched, or performed the fieldwork for thousands of Phase I Environmental Site Assessments for various types of properties including manufacturing facilities, automotive repair facilities, and agricultural properties. In addition, he is the company's expert in the Federal Communications Commission's (FCC) responsibilities under the National Environmental Policy Act (NEPA). He has consulted on hundreds of NEPA compliance projects for various telecommunications companies. He has also consulted on NEPA compliance for several Department of Housing and Urban Development's (HUD) redevelopment projects. He has made determinations and received concurrence from the State Historical Preservation Officer (SHPO) of many states for hundreds of Section 106 compliance projects. Mr. Exton has also managed special projects including Native American consultation, endangered species mitigation, consultation with the US Fish and Wildlife Service, wetlands surveys, flood plain hydrology studies, and archaeological testing. His archaeological projects have included the discovery of human remains. Mr. Exton has also written the majority of custom software utilized by Phase One, Inc; this software has increased the company's productivity and has improved the quality of reports compiled.

1 year – Valmer, Inc., Palo Alto, California

Mr. Exton managed and supported the computers and network for Valmer, Inc., a computer software company. He also managed the technical support of the company's contact management software, wrote several utilities to import data from other contact management and database programs, and merged data into popular word processing and fax programs.

PAOLO DIZON
Report Writer and Environmental Assessor

Education

B.A. Environmental Analysis and Design: University of California, Irvine

A.S. Science: Marymount College, Palos Verdes

Summary of Experience

2001 – Phase One, Inc., Tustin, California – Current

At Phase One, Inc., Mr. Dizon has performed hundreds of environmental site assessments that include comprehensive site reconnaissance activities, the identification and evaluation of environmental concerns, and potential environmental conditions. Mr. Dizon is also responsible for database research and the review of historical maps, photographs, and other documents associated with property use and history. In addition, Mr. Dizon is involved in the writing and preparation of reports for various types of properties.

Hotshopz.com

As a webmaster, Mr. Dizon designed and managed this E-Commerce Website.

Allergan, Inc., Irvine, California

At Allergan, Inc., Mr. Dizon worked in the BOTOX Clinical Research Department as a clinical research intern. Mr. Dizon reviewed case report forms and other clinical data. In addition, Mr. Dizon performed database management.

University of California, Irvine, California

During his employment as a webmaster at the University of California, Irvine, Mr. Dizon designed an Environmental Health class Website.

APPENDIX J

ENVIRONMENTAL ACRONYMS AND DEFINITIONS

APPENDIX J

ENVIRONMENTAL ACRONYMS

AA .....Administering Agency
ACM .....Asbestos Containing Materials
AHERA.....Asbestos Hazard Emergency Response Act, 1986
AHM .....Acutely Hazardous Materials
AQMD .....Air Quality Management District
CEG.....Certified Engineering Geologist
CERCLA.....Comprehensive Environmental Response, Comprehensive Liability Act of 1980 (Federal Superfund), 42 USC 9601 et seq.
CERCLIS .....Comprehensive Environmental Response, Compensation,
.....and Liability Information System
CFR .....Code of Federal Regulations
EIR .....Environmental Impact Report
EIS.....Environmental Impact Statement
EPA .....Environmental Protection Agency (Federal)
EPA #.....Generator # for RCRA manifesting
HMBP .....Hazardous Materials Business Plans, H&S Code 25504
HWIS……..Hazardous Waste Information System
LUFT.....Leaking Underground Fuel Tank
LUST.....Leaking Underground Storage Tank
MSDS.....Material Safety Data Sheet
NEPA .....National Environmental Policy Act
NIOSH .....National Institute for Occupational Safety & Health
NPDES.....National Pollution Discharge Elimination System (CWA)
NPL .....National Priority List (Federal Superfund)
OEA .....Office of Environmental Affairs
OSHA.....Occupational Safety and Health Administration (Federal)
PCB .....Polychlorinated biphenyl
POTW .....Publicly-Owned Treatment Works
ppb.....part per billion
ppm .....part per million
PRP .....Potentially Responsible Party (in Superfund site)
RAP.....Remedial Action Plan
RCRA.....Resource Conservation and Recovery Act
.....(Federal) 42 USC 6901, 40 CFR
R&D.....Research and Development
REA.....Registered Environmental Assessor
RG .....Registered Geologist
RI/FS.....Remedial Investigation/Feasibility Study
ROD .....Record of Decision (CERCLA)

RP.....Responsible Party (CERCLA) 42 UCF 9607(a)
RQ.....Reportable Quantity
.....(under DOT CERCLA and SARA Title III)
RWQCB.....Regional Water Quality Control Board
SARA.....Superfund amendments and Reauthorization Act of 1986
.....SARA Title III Emergency Preparedness and Community
.....Right-to-Know section
SB.....Senate Bill
SIC .....Standard Industrial Classification
.....(company description)
SOP .....Standard Operating Procedures
SWA.....Solid Waste Act (a/k/a RCRA)
SWMU .....Solid Waste Management Unit
TPCA .....Toxic Pits Cleanup Act H&S Code 25208 et seq.
TSCA .....Toxic Substance Control Act (Federal)
.....15 USC 2601 et seq.
TSD.....Treatment, Storage, and Disposal Facilities (permitted by RCRA) H&S Code
.....25123.3
TSDF.....Treatment, Storage, Disposal Facility (hazardous waste)
UBC .....Uniform Building Code
UFC.....Uniform Fire Code
UST.....Underground Storage Tank
UM .....Uniform Manifest
UST.....Underground Storage Tanks
VOC .....Volatile Organic Compound H&S 25123.6
WDR .....Waste Discharge Requirements
WWTP .....Wastewater Treatment Plant

SELECTED DEFINITIONS

ASPIS - This database lists potentially hazardous waste sites identified by the Historical Abandoned site Survey Program.

CERCLIS - The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) is commonly referred to as "Superfund". The United States Environmental Protection Agency maintains a database referred to as "CERCLIS", which is used by the EPA to track activities conducted under its Superfund Program.

Sites which come to EPA's attention that may have a potential for releasing hazardous substances into the environment are added to the CERCLIS inventory. EPA learns of these sites in various ways. Examples include notification by the owner, citizen complaints, state and local government identification, and as a result of other EPA investigations.

NPL - The United States Environmental Protection Agency (EPA) maintains a National Priorities List (NPL) under the Comprehensive Environmental Response and Liability Act of 1980 (CERCLA), 42 U.S.C. Section 9601 (1985). Sites which have previously been designated on the CERCLIS List are evaluated by the EPA and ranked according to potential risk to human health and the environmental. Those CERCLIS sites which present the greatest risk are added to the NPL, which qualifies them to receive remedial funding Through CERCLA.

RCRA - The following list has been compiled from a search of the RCRA data base list for generators (gen), transporters (trans), and treatment storage disposal facilities (TSDF) of hazardous materials. All generators of waste material are required by the Department of Health Services to have hazardous material removed from the site every sixty days. The list is generally representative of the type of businesses in the region surrounding the subject property.

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PHASE ONE INC. Project No. 6482

REPORT SIGNATURE SHEET AND CERTIFICATION

The undersigned hereby certifies that:

The following people have prepared, written, and/or reviewed the Phase I Environmental Assessment Report. All the below parties have, in good faith, conducted their respective project responsibilities using that degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar fields.

All parties have acted in good faith and have no known relationship with the subject site, owners, buyers, or any other entity associated with the subject site. All respective project responsibilities have been conducted independently, and with no conflict of interest.

The statements of fact contained in this report are true and correct based on materials reviewed.

The reported analyses, opinions, and conclusions are personal, unbiased, professional, and limited only by the assumptions and qualifications stated herein. Compensation is not contingent upon an action or an event resulting from the analyses, opinions, or conclusions included in this report. Nor is it contingent upon the use of this report.

The investigation has been performed in accordance with all applicable legal requirements and in accordance with accepted practices prevailing in the environmental assessment and asbestos consulting industries. The personnel who performed the investigation are properly licensed and certified in accordance with the requirements of all federal, state, and local laws, rules, and regulations.

We have no present or prospective interest in the subject property or the parties involved.

If necessary, expert testimony and other legal appearances will be provided for a reasonable fee to be arranged.

The report has been prepared in conformance with the Client's Environmental Policy.

Paolo Dizon
Report Writer

Nadine Kieselbach
Copy Editor

Eric Exton
Technical Reviewer

Eric Kieselbach
President

6/06

PARTNER
Engineering and Science, Inc.

PHASE II SUBSURFACE INVESTIGATION REPORT

APNs 351-013-04, -05, & -17
Yorba Linda, California 92887

February 28, 2013
Partner Project Number 13-98945.1

Prepared for

SAGE COMMUNITY GROUP, INC.
3 Corporate Plaza, Suite 102
Newport Beach, California 92660

PARTNER
Engineering and Science, Inc.

February 28, 2013

Mr. Laurence M. Netherton
Sage Community Group, Inc.
3 Corporate Plaza, Suite 102
Newport Beach, California 92660

Subject: **Phase II Subsurface Investigation**
APNs 351-031-04, -05, and -17
Yorba Linda, California 92887
Partner Project Number 13-98945.1

Dear Mr. Netherton:

The following letter report describes the field activities, methods, and findings of the Phase II Subsurface Investigation conducted by Partner Engineering and Science, Inc. (Partner) at the above-referenced property. The purpose of the investigation was to further investigate the impact of petroleum hydrocarbons and/or metals to soil as a consequence of a release or releases from on-site oil production activities. Sage Community Group, Inc. (Client) provided project authorization through a signed copy of Partner Proposal Number P13-98945A.

Site Description

The subject property consists of three parcels of land totaling approximately 116.25 acres located to the northwest of Yorba Linda Boulevard and Dorinda Road, with access off Dorinda Road, in a residential area of Yorba Linda, California. Adjacent properties consist of undeveloped land to the northeast and east, and single-family residences in the remaining directions. Please see Figure 1 for a site vicinity map.

The southern portion of the subject property is currently developed as an oil production field with five functioning pump-jacks, one idle pump-jack, one abandoned well location, and various tanks and other oil field features. The remainder of the site consists of dirt roads and undeveloped hillsides. Please see Figure 2 for a site plan.

Site History

According to information provided by the Client, the subject property is currently developed with six oil wells and one abandoned oil well. It is Partner's understanding that the site is being developed as a residential community. Eight aboveground oil storage tanks are currently located on the subject property in association with the on-site oil wells. As part of the development activities, the on-site wells will be abandoned and moved to another location on the property. A review of previous site investigation reports completed for the subject property indicates that soils at the subject property are impacted by petroleum hydrocarbons. However, the only data available for review summarized in the 1998 Site Assessment Report prepared by Avanti Environmental, Inc. was for total recoverable petroleum hydrocarbons (TRPH).

Field Activities

To further investigate the impact of petroleum hydrocarbons and/or metals to soil as a consequence of a release or releases from on-site oil production activities, Partner conducted a Phase II Subsurface Investigation. The investigation scope included the advancement of 12 soil borings (PES-B1 through PES-B12).

Utility Clearance

Partner delineated the work area with white spray paint and notified Underground Services Alert (USA) to clear public utility lines as required by law at least 48 hours prior to drilling activities. USA issued ticket number A30420406 for the project.

Health and Safety Plan

Partner reviewed the site-specific Health and Safety Plan with on-site personnel involved in the project prior to the commencement of drilling activities.

Drilling Equipment

On February 15, 2013, Partner subcontracted with Kehoe Testing and Engineering, Inc. (KTE) (State of California C57 Water Well Drilling Contractor License Number 786163) to provide and operate drilling equipment. KTE, under the direction of Partner, advanced borings PES-B1 through PES-B12 with a direct-push, truck-mounted Geoprobe Model 7800 drill rig. Drilling rods and sampling equipment were decontaminated between samples and borings to prevent cross-contamination.

Boring Locations

Borings PES-B1 and PES-B2 were advanced in the vicinity of previous hydrocarbon detections, to the northwest and further northwest of Amos-Travis #1 well, respectively. Borings PES-B3 and PES-B4 were advanced to the southwest and northeast of Amos-Travis #2 well, respectively. Boring PES-B5 was advanced to the east-southeast of the Reeves #2 well. Borings PES-B6 and PES-B7 were advanced to the west-northwest and east-southeast of the Reeves Tank Battery, respectively. Boring PES-B8 was advanced to the southeast of the Reeves #3 well. Borings PES-B9 and PES-B10 were advanced to the northeast and southwest of the Reeves #1 well, respectively. Boring PES-B11 was advanced to the northeast of the Amos-Travis #3 well. Boring PES-B12 was advanced to the northwest of the abandoned Amos-Travis #4 well. Boring placement was limited due slope stability, and presence of fences and other oil field features and/or equipment. Please see Figures 3 and 4 for maps indicating boring locations.

Sampling Depths

Boring PES-B1 was advanced to a terminal depth of 15 feet below ground surface (bgs) where it met with refusal. Boring PES-B2 was advanced to a terminal depth of 20 feet bgs. Borings

PES-B3 through PES-B12 were advanced to a terminal depth of 10 feet bgs. Soil samples were collected from each boring in 5-foot increments from 5 feet bgs to the terminal depth.

Soil Sampling Methodology

Borings PES-B1 through PES-B12 were installed though unpaved surfaces.

Soil samples were collected using a 2-foot long by 1.5-inch diameter sampler with four 6-inch long stainless steel liner and sampling point. The sampler was advanced by the direct-push drill rig using 4-foot long by 1.25-inch diameter hollow rods with the inner rods in place. At approximately 1 foot above the desired sampling depth, an inner rod was removed and the sampler was advanced to the desired sampling depth to allow undisturbed soil to enter the sampling liner. The sampler was retrieved from the subsurface and the soil-filled liners were removed.

Each acetate liner was cut using a hacksaw. The lower half of the liner was capped on either end with Teflon tape and plastic caps. The capped liners were labeled for identification and stored in an iced cooler. The soil in the in the upper half of the liners was visually inspected for discoloration, monitored for odors, classified in accordance with the Unified Soil Classification System (USCS), placed in sealable plastic bags, and field-screened with a photoionization detector (PID) calibrated to isobutylene. None of the samples exhibited discoloration or an odor and none of the PID readings suggested the presence of significantly elevated volatile organics concentrations.

The boreholes were backfilled with hydrated bentonite chips after sampling. No significant amounts of derived wastes were generated during this investigation.

Laboratory Analyses

Partner collected 27 soil samples on February 15, 2013, which were transported in an iced cooler under proper chain-of-custody protocol to Alpha Scientific Corporation (ASC), a state-certified laboratory [California Department of Health Services (DHS) Environmental Laboratory Accreditation Program (ELAP) certificate number 2633] in the City of Cerritos, California, for analysis on the same day. Based on field-screening results, one soil sample per boring (12 samples total) was analyzed for carbon chain total petroleum hydrocarbons (TPH-cc) in accordance with EPA Method 8015M and California Administrative Manual (CAM) 17 Metals in accordance with EPA Method 6010B/7471A.

Investigation Scope Summary

Please see Table 1 for a summary of the borings, sampling schedule, and laboratory analyses for this investigation.

Local Geology and Hydrogeology

Based on a review of the United States Geological Survey (USGS) Yorba Linda, California Quadrangle topographic map, the subject property is situated between 675 and 780 feet above mean sea level (amsl) on the southwestern piedmont of San Juan Hill.

Based on borings advanced during this investigation, the underlying subsurface consists predominantly of light brown, moist to dry, silts (ML) and clays (CL) with varying stiffness and sand content from the ground surface to approximately 20 feet bgs. Please see Appendix A for boring logs from this investigation.

Groundwater was not encountered during this investigation. According to the State Water Resources Control Board (SWRCB) GeoTracker Website, a nearby Leaking Underground Storage Tank (LUST) site is Orange County Fire Department Station #32 (global facility identification number T0605901720), at 20990 Yorba Linda Boulevard in the City of Yorba Linda, California, which is approximately 1.0 mile southwest of the subject property and is overseen by the Santa Ana Regional Water Quality Control Board (SARWQCB) as Case Number 083002399T. The most recent monitoring data available on the GeoTracker Website indicates a depth to groundwater of approximately 80 feet bgs.

Laboratory Analysis Results

ASC reported the laboratory analysis results on February 26, 2013. Please see Tables 2 and 3 for a summary of the soil sample TPH-cc and CAM 17 Metals laboratory analysis results, respectively.

Please see Appendix B for the full laboratory analysis report, which includes chain-of-custody and laboratory quality assurance/quality control (QA/QC) documentation. Laboratory QA/QC data were within acceptable limits.

Discussion

None of the analyzed soil samples contained detectable concentrations of TPH-cc.

The analyzed soil samples exceeded the background molybdenum concentrations for typical California soils in two samples, as based on the Kearney Foundation of Soil Science March 1996 Report *Background Concentrations of Trace and Major Elements in California Soils*. No other metals were detected above their respective background concentrations.

Regional Screening Levels

Regional Screening Levels (RSLs) [formerly Preliminary Remediation Goals (PRGs)] are generic, risk-based chemical concentrations developed by the EPA Region 9 for use in initial screening-level evaluations. RSLs combine human health toxicity values with standard exposure factors to estimate contaminant concentrations that are considered to be health protective of human exposures over a lifetime through direct-contact exposure pathways (e.g., via inhalation

and/or ingestion of and/or dermal contact with impacted soil). RSLs are not legally enforceable standards, but rather are considered guidelines to evaluate if potential risks associated with encountered impacts may warrant further evaluation.

Please see Table 4 for a comparison of detected molybdenum concentrations and available residential and industrial RSLs. Only samples with molybdenum concentrations detected above background concentrations are included in the table.

None of the molybdenum concentrations detected above the background concentrations exceeded the residential and/or industrial RSLs.

California Human Health Screening Levels

California Human Health Screening Levels (CHHSLs) are tools for evaluating contaminated sites and are concentrations of hazardous chemicals in indoor air, soil, and soil gas that the California Environmental Protection Agency (Cal/EPA) considers to be below the thresholds of concern for risks to human health. CHHSLs are not considered standards, but rather guidelines that can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred.

The soil CHHSLs are intended for the evaluation of potential exposure of humans to contaminants in soil through incidental soil ingestion, dermal absorption, and inhalation of dust or vapors in outdoor air. Please see Table 4 for a comparison of detected molybdenum concentrations and the residential and industrial land use CHHSLs. Only samples with molybdenum concentrations detected above background concentrations are included in the table.

None of the molybdenum concentrations detected above the background concentrations exceeded the residential and/or industrial land use CHHSLs.

Total Threshold Limit Concentrations/Soluble Threshold Limit Concentrations

Total Threshold Limit Concentrations (TTLCs) are established regulatory limits to evaluate if a waste would be considered hazardous due to toxicity. Generated wastes exceeding TTLCs require special handling procedures and can only be disposed at designated facilities. Soluble Threshold Limit Concentrations (STLCs) are established regulatory limits to evaluate if leachate resulting from a waste would be considered hazardous due to toxicity. A factor of 10 is generally applied to solid waste to account for the leachability of the waste. Please see Table 4 for a comparison of detected molybdenum concentrations and their respective TTLCs and 10 times STLCs. Only samples with molybdenum concentrations detected above background concentrations are included in the table.

None of the molybdenum concentrations detected above the background concentrations exceeded the TTLCs or 10 times the STLCs.

Summary and Conclusions

Partner performed a Phase II Subsurface Investigation at the subject property to further investigate the impact of petroleum hydrocarbons and/or metals to soil as a consequence of a release or releases from on-site oil production activities. The scope of the investigation included the advancement of 12 soil borings. Twenty-seven soil samples were collected and 12 soil samples were analyzed for TPH-cc and CAM 17 Metals.

None of the analyzed soil samples had detectable concentrations of TPH-cc. TRPH was detected during the previous on-site investigation; however, the method utilized for TPRH has a tendency to produce false positives due to the inexact nature of the methodology. As such, the recent data for TPH-cc did not indicate any areas of impacted soils. However, based on the proposed residential development activities, Partner has prepared under separate cover a Soil Management Plan to ensure the proper handling and/or disposal of impacted soils that may be encountered during further grading activities.

Detected concentrations of metals were within background levels and/or below available regulatory guidelines.

No evidence of a significant release was detected during this investigation.

Limitations

This Report presents a summary of work performed by Partner. The work includes observations of site conditions encountered and the analytical results provided by an independent third party laboratory of samples collected during the course of the project. The number and location of samples were selected to provide the required information. However, it cannot be assumed that the limited available data are representative of subsurface conditions in areas not sampled.

Conclusions and/or recommendations are based on the observations, laboratory analyses, and the governing regulations. Conclusions and/or recommendations beyond those stated and reported herein should not be inferred from this document.

Partner warrants that the environmental consulting services contained herein were accomplished in accordance with generally accepted practices in the environmental engineering, geology, and hydrogeology fields that existed at the time and location of work. No other warranties are implied or expressed.

Reports, both verbal and written, as they pertain to the property located with APNs 351-031-04, -05, and -17 in the City of Yorba Linda, California, are for the sole use and benefit of Sage Community Group, Inc. This report has no other purpose and may not be relied upon by another person or entity without the written consent of Partner.

Signatures of Participating Professionals

Thank you for the opportunity to be of service. If you have questions regarding this investigation, please contact the undersigned at (310) 615-4500.

Sincerely,

Ian Penney
Staff Geologist

Samantha J. Harris, PG
Project Manager

Attachments:

Tables
1. Summary of Investigation Scope
2. Soil Sample TPH-cc Laboratory Results
3. Soil Sample CAM 17 Metals Laboratory Results (mg/kg)
4. Comparison of Molybdenum Laboratory Results and Regulatory Guidelines

Figures
1. Site Vicinity Map
2. Site Plan
3. Boring Locations – West
4. Boring Locations – East

Appendices
A. Boring Logs
B. Laboratory Report

Tables

Table 1: Summary of Investigation Scope

Boring Identification	Location	Terminal Depth (feet bgs)	Matrix Sampled	Sampling Depths* (feet bgs)	Target Contaminants
PES-B1	Northwest of Amos-Travis #1 Well	15**	Soil	5, **10**, 15	TPH-cc, Metals
PES-B2	Northwest of Amos-Travis #1 Well and PES-B1	20	Soil	5, **10**, 15, 20	TPH-cc, Metals
PES-B3	Southwest of Amos-Travis #2 Well	10	Soil	5, **10**	TPH-cc, Metals
PES-B4	Northeast of the Amos-Travis #2 Well	10	Soil	5, **10**	TPH-cc, Metals
PES-B5	East-Southeast of Reeves #2 Well	10	Soil	5, **10**	TPH-cc, Metals
PES-B6	West-Northwest of Reeves Tank Battery	10	Soil	5, **10**	TPH-cc, Metals
PES-B7	East-Southeast of Reeves Tank Battery	10	Soil	5, **10**	TPH-cc, Metals
PES-B8	Southeast of the Reeves #3 Well	10	Soil	**5**, 10	TPH-cc, Metals
PES-B9	Northeast of the Reeves #1 Well	10	Soil	**5**, 10	TPH-cc, Metals
PES-B10	Southwest of the Reeves #1 Well	10	Soil	5, **10**	TPH-cc, Metals
PES-B11	Northeast of the Amos-Travis #3 Well	10	Soil	**5**, 10	TPH-cc, Metals
PES-B12	Northwest of the Amos-Travis #4 Well	10	Soil	5, **10**	TPH-cc, Metals

Notes:

*Depths in **bold** analyzed for carbon chain total petroleum hydrocarbons (TPH-cc) via Environmental Protection Agency (EPA) Method 8015M, and California Administrative Manual (CAM) 17 Metals via EPA Method 6010B/7471A.

**Refusal encountered at the terminal depth

bgs = below ground surface

Table 2: Soil Sample TPH-cc Laboratory Results

EPA Method	TPH-cc via 8015M		
Units	(mg/kg)		
Sample Identification	TPH-g	TPH-d	TPH-o
PES-B1-10	< 0.5	< 5	< 40
PES-B2-10	< 0.5	< 5	< 40
PES-B3-10	< 0.5	< 5	< 40
PES-B4-10	< 0.5	< 5	< 40
PES-B5-10	< 0.5	< 5	< 40
PES-B6-10	< 0.5	< 5	< 40
PES-B7-10	< 0.5	< 5	< 40
PES-B8-5	< 0.5	< 5	< 40
PES-B9-5	< 0.5	< 5	< 40
PES-B10-10	< 0.5	< 5	< 40
PES-B11-5	< 0.5	< 5	< 40
PES-B12-10	< 0.5	< 5	< 40

Notes:

TPH-cc = carbon chain total petroleum hydrocarbons

EPA = Environmental Protection Agency

TPH-g = total petroleum hydrocarbons as gasoline

TPH-d = total petroleum hydrocarbons as diesel

TPH-o = total petroleum hydrocarbons as oil

mg/kg = milligrams per kilogram

< = not detected above indicated laboratory Practical Quantitation Limit (PQL)

Table 3: Soil Sample CAM 17 Metals Laboratory Results (mg/kg)

Element	PES-B1-10	PES-B2-10	PES-B3-10	PES-B4-10	PES-B5-10	PES-B6-10	PES-B7-10	PES-B8-5	PES-B9-5	PES-B10-10	PES-B11-5	PES-B12-10	Background Concentrations*
Antimony (Sb)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	0.21 - 0.99
Arsenic (As)	3.4	5.5	3.4	2.8	4.9	3.6	1.8	3.2	3.6	3.9	4.7	1.8	12**
Barium (Ba)	97.5	80.1	437	88.7	105	70.6	50.4	77.9	88.9	102	91.3	24.2	299 - 719
Beryllium (Be)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	0.76 - 1.8
Cadmium (Cd)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	0.05 - 0.67
Chromium (Cr)	9.4	33.8	16.8	16.3	29.8	22.2	12.2	14.8	19.7	23.4	16.9	5.3	0 - 345
Cobalt (Co)	8.4	9.4	15.6	13.8	12.9	13.8	7.3	7.2	9.9	10.0	7.9	3.3	5.7 - 24.1
Copper (Cu)	12.4	21.1	17.3	15.9	37.2	19.3	20.0	9.0	10.9	17.7	14.8	7.7	9.4 - 48
Lead (Pb)	2.2	3.0	< 2.0	3.4	4.9	3.9	3.4	2.0	2.6	< 2.0	2.8	< 2.0	10.1 - 37.7
Mercury (Hg)	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.05 - 0.47
Molybdenum (Mo)	< 2.0	< 2.0	**3.0**	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	**4.3**	< 2.0	< 2.0	0 - 2.8
Nickel (Ni)	11.9	20.2	16.6	20.6	21.6	20.2	7.7	10.0	13.8	17.7	11.7	7.3	0 - 137
Selenium (Se)	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0 - 0.142
Silver (Ag)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	0 - 2.23
Thallium (Tl)	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	0.37 - 0.75
Vanadium (V)	112	106	82.9	63.0	120	87.9	49.9	63.2	86.2	97.5	64.8	18.8	59 - 165
Zinc (Zn)	32.0	28.1	63.3	51.0	66.5	53.2	32.5	30.4	38.2	51.9	36.4	19.2	117 - 181

Notes:

*From Kearney Foundation of Soil Science March 1996 report *Background Concentrations of Trace and Major Elements in California Soils*. Background concentrations of metals are considered to be within one standard deviation from the mean metal concentrations determined by the study.

**From California Department of Toxic Substance Control March 2008 report *Determination of a Southern California Regional Background Arsenic Concentration in Soil* .

CAM = California Administrative Manual
mg/kg = milligrams per kilograms
< = not detected above indicated laboratory Practical Quantitation Limit

Table 4: Comparison of Molybdenum Laboratory Results and Regulatory Guidelines

Sample	Total Molybdenum Concentration (mg/kg)*
PES-B3-10	**3.0**
PES-B10-10	**4.3**
Residential RSL	390
Industrial RSL	5,100
Residential CHHSL	380
Industrial CHHSL	4,800
10x STLC	3,500
TTLC	3,500

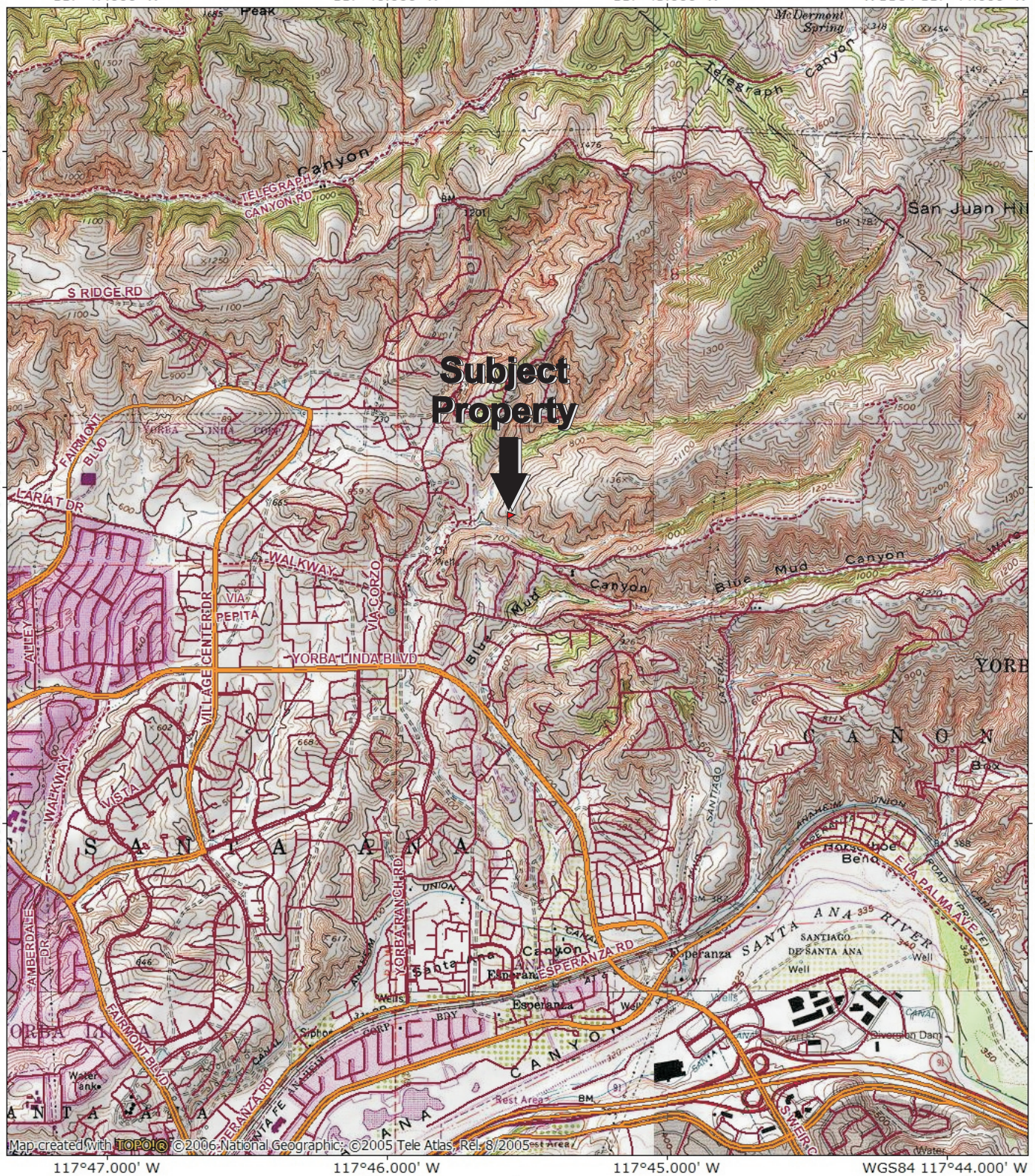
Notes:

mg/kg = milligrams per kilograms

*The background concentration of molybdenum is between 0 and 0.28 mg/kg. From Kearney Foundation of Soil Science March 1996 report *Background Concentrations of Trace and Major Elements in California Soils.* Background concentrations of metals are considered to be within one standard deviation from the mean metal concentrations determined by the study.

RSL = Regional Screening Level (Environmental Protection Agency Region 9 - May 2012)
CHHSL = California Human Health Screening Level (California Environmental Protection Agency - January 2005)
STLC = Soluble Threshold Limit Concentration (California Code of Regulations Title 22, Chapter 11, Article 3, Table 2)
TTLC = Total Threshold Limit Concentration (California Code of Regulations Title 22, Chapter 11, Article 3, Table 2)

Figures



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Torrance, California 90501

Project Number: 13-98945.1

Legend

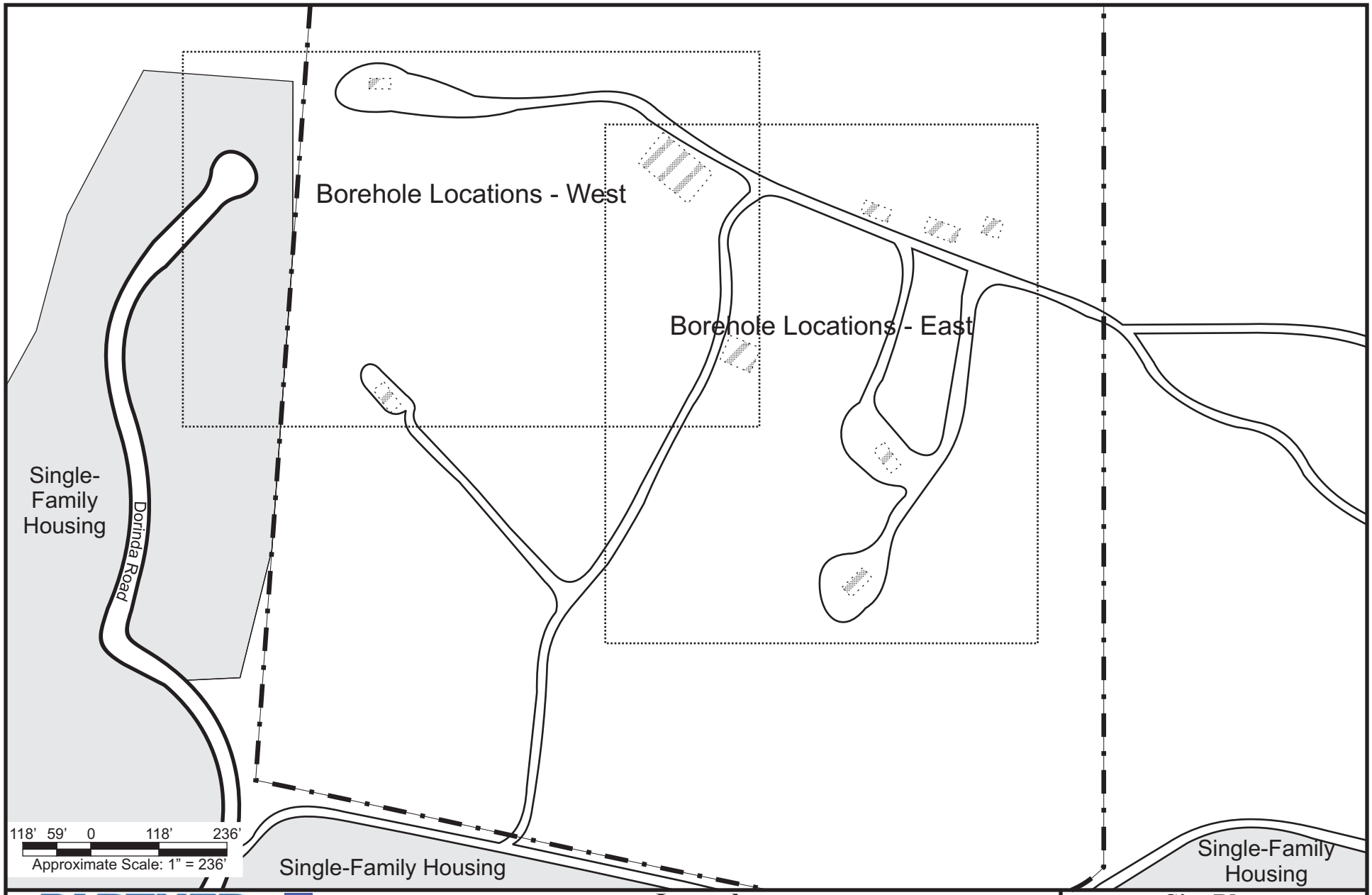
N

USGS Yorba Linda, CA Quadrangle
Version: 1978 Current as of: 1981

Site Vicinity Map

Figure	Prepared By	Date
1	I. Penney	February 2013

APNs 351-031-04, -05, -17
Yorba Linda, California 92887



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Legend

N

Subject Site

Paved Road

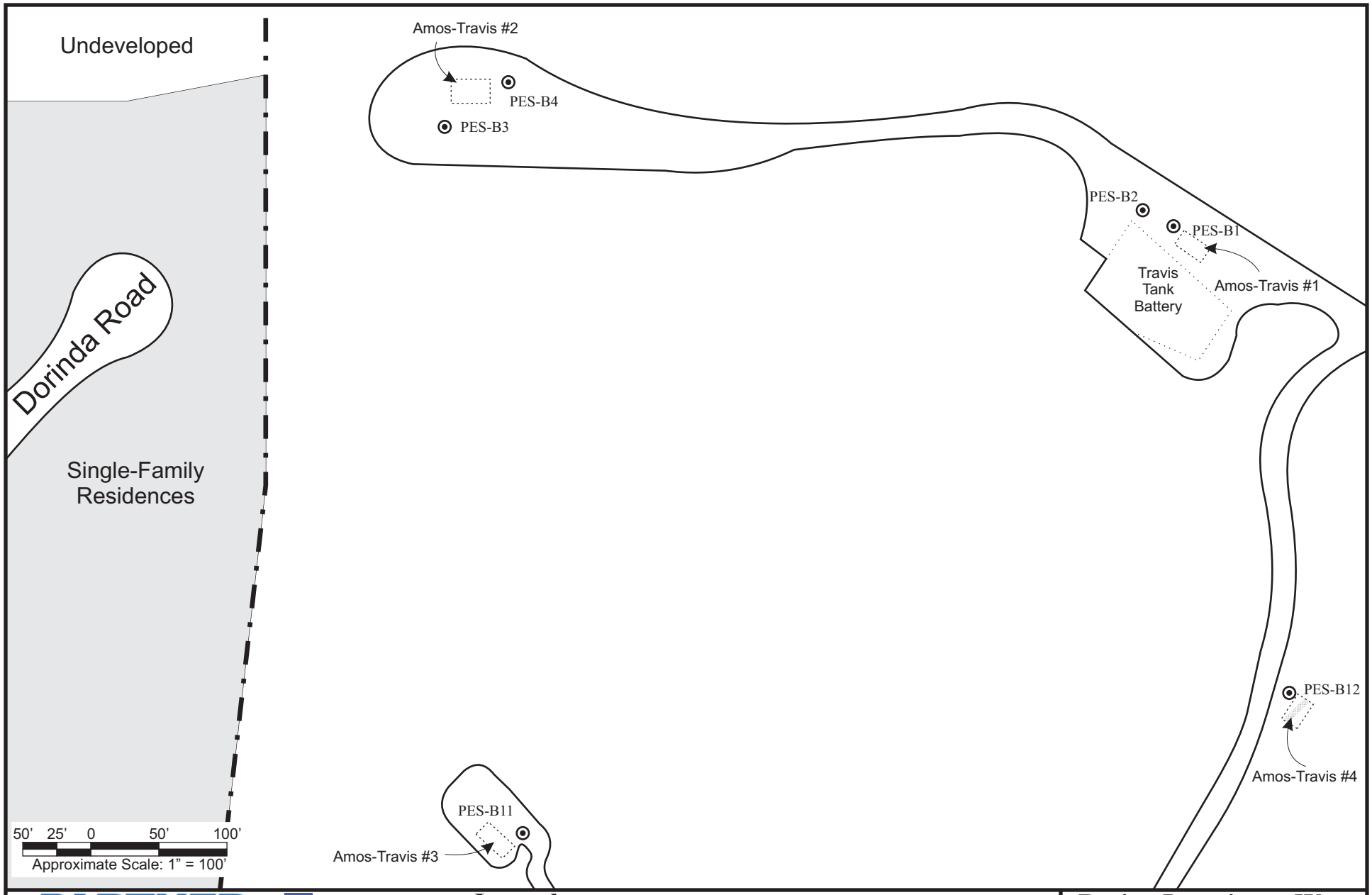
Dirt Road

Oil Field Features

Site Plan

Figure	Prepared By	Date
2	I. Penney	February 2013

APNs 351-031-04, -05, & -17
Yorba Linda, California 92887



Legend

N

Subject Site

Dirt Road

Boring Location

Oil Well Location

Former Oil Well Location

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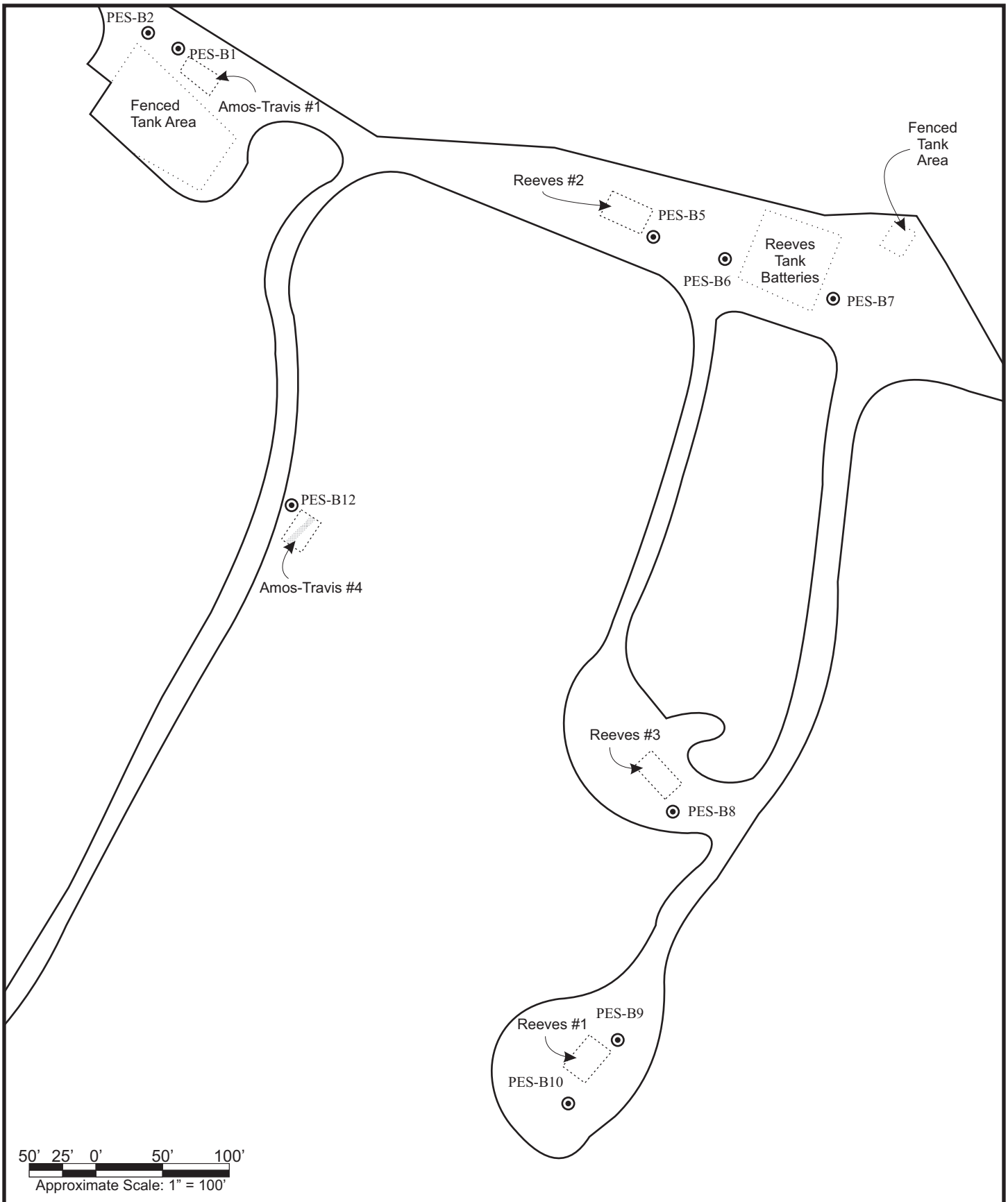
Boring Locations - West

Figure	Prepared By	Date
3	I. Penney	February 2013

APNs 351-031-04, -05, & -17
Yorba Linda, California 92887



Legend

- Subject Site
- Oil Well Location
- Former Oil Well Location
- Dirt Road
- Boring Location

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Torrance, California 90501

Project Number: 13-98945.1

Boring Locations - East

Figure	Prepared By	Date
4	I. Penney	February 2013

APNs 351-031-04, -05, & -17
Yorba Linda, California 92887

Appendix A:

Boring Logs

Borehole Number:	PES-B1				Page 1 of 1
Location:	Northwest of Amos-Travis #1 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B1-5	1.0	ML	silt, 30% clay, 20% very fine to fine sand, loamy, poorly graded, non-plastic.	
6					
7					
8					
9					
10	PES-B1-10	1.9	CL	Silty CLAY: light brown, moist, stiff, 60% clay, 40% silt, non-plastic.	
11					
12					
13					
14					
15	PES-B1-15	1.3	ML	Silty CLAY: light brown, moist, stiff, 70% silt, 30% clay, non-plastic.	Groundwater not encountered.
16					Refusal encountered at 15 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B2				Page 1 of 1
Location:	Northwest of Amos-Travis #1 Well and PES-B1			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B2-5	2.2	SM	Silty SAND: light brown, moist, very dense, 70% very fine to fine sand, 30% silt, poorly graded.	
6					
7					
8					
9					
10	PES-B2-10	2.7	CL	Sandy Silty CLAY: light brown, moist to dry, very stiff, 45% clay, 40% silt, 15% very fine to fine sand, poorly graded, non-plastic.	
11					
12					
13					
14					
15	PES-B2-15	1.0	ML	Clayey SILT: light brown, moist to dry, very stiff, 65% silt, 35% silt, non-plastic.	
16					
17					
18					
19					
20	PES-B2-20	1.2	CL	Silty CLAY: light brown, moist to dry, very stiff, 75% clay, 25% silt, non-plastic.	Groundwater not encountered.
21					Borehole terminated at 20 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
22					
23					
24					
25					

Borehole Number:	PES-B3				Page 1 of 1
Location:	Southwest of Amos-Travis #2 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B3-5	1.1	CL	Silty CLAY: light brown, moist, soft, 60% clay, 40% silt, non-plastic	
6					
7					
8					
9					
10	PES-B3-10	1.4	CL	Silty Sandy CLAY: light brown, moist, medium stiff, 50% clay, 35% fine sand, 15% silt, poorly graded, non-plastic.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B4				Page 1 of 1
Location:	Northeast of Amos-Travis #2 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B4-5	0.9	CL	Silty CLAY: light brown, moist, soft, 75% clay, 25% silt, non-plastic.	
6					
7					
8					
9					
10	PES-B4-10	2.1	ML	Sandy SILT: light brown, moist, medium stiff, 60% clay, 40% very fine to fine sand, poorly graded, non-plastic.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B5				Page 1 of 1
Location:	East-Southeast of Reeves #2 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B5-5	1.1	CL	Silty CLAY: light brown, moist to dry, stiff, 70% clay, 30% silt, non-plastic.	
6					
7					
8					
9					
10	PES-B5-10	2.1	CL	Silty CLAY: light brown, moist to dry, medium stiff, 70% clay, 30% silt, non-plastic.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B6				Page 1 of 1
Location:	West-Northwest of Reeves Tank Battery			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B6-5	1.8	SM	Silty SAND: light brown, moist to dry, medium dense, 60% very fine sand, 40% silt, poorly graded.	
6					
7					
8					
9					
10	PES-B6-10	2.5	CL	Silty CLAY: light brown, moist to dry, medium stiff, 70% clay, 30% silt, non-plastic.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B7				Page 1 of 1
Location:	East-Southeast of Reeves Tank Battery			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B7-5	1.2	ML	Clayey Sandy SILT: light brown, moist to dry, medium stiff, 50% silt, 35% very fine sand, 15% clay, poorly graded, non-plastic.	
6					
7					
8					
9					
10	PES-B7-10	2.0	SM	Silty SAND: light brown, moist to dry, very dense, 60% very fine to fine sand, 40% silt, poorly graded.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B8				Page 1 of 1
Location:	Southeast of Reeves #3 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B8-5	2.8	ML	Clayey Sandy SILT: dark reddish brown, moist, soft, 60% silt, 30% very fine to fine sand, 10% clay, poorly graded, non-plastic.	
6					
7					
8					
9					
10	PES-B8-10	0.8	ML	Clayey Sandy SILT: dark reddish brown, moist, soft, 60% silt, 30% very fine to fine sand, 10% clay, poorly graded, non-plastic.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B9				Page 1 of 1
Location:	Northeast of the Reeves #1 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B9-5	1.2	CL	Sand CLAY: dark reddish brown, moist, soft, 60% clay, 40% very fine to fine sand, poorly graded, non-plastic.	
6					
7					
8					
9					
10	PES-B9-10	0.5	CL	Sand CLAY: dark reddish brown, moist, medium stiff, 60% clay, 40% very fine to fine sand, poorly graded, non-plastic.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B10				Page 1 of 1
Location:	Southwest of the Reeves #1 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B10-5	0.6	CL	Silty CLAY: dark brown, moist, soft, 80% clay, 20% silt, non-plastic.	
6					
7					
8					
9					
10	PES-B10-10	0.7	CL	Silty Sandy CLAY: dark brown, moist soft, 70% clay, 20% very fine to fine sand, 10% silt, poorly graded, non-plastic.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B11				Page 1 of 1
Location:	Northeast of the Amos-Travis #3 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B11-5	0.8	SP	Poorly Graded SAND: light brown, moist, medium dense, 100% very fine to fine sand, poorly graded, trace silt.	
6					
7					
8					
9					
10	PES-B11-10	0.5	CL	Sandy Silty CLAY: Light brown, moist very stiff, 70% clay, 20% silt, 10% very fine sand, poorly graded, non-plastic.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Borehole Number:	PES-B12				Page 1 of 1
Location:	Northwest of the Amos-Travis #4 Well			Date Started:	2/15/2013
Site Address:	APN: 351-031-04; 351-031-05; 351-031-17			Date Completed:	2/15/2013
	Yorba Linda, California			Depth to Groundwater:	NA
Project Number:	13-98945.1			Field Technician:	I. Penney
Drill Rig Type:	Geoprobe 7800, Truck-Mounted, Drill Rig			**Partner Engineering and Science**	
Sampling Equipment:	Acetate liner, plastic syringes			2154 Torrance Boulevard, Suite 200	
Borehole Diameter:	2.0 inches			Torrance, California 90501	

Depth	Sample	PID	USCS	Description	Notes
1					Unpaved at surface.
2					
3					
4					
5	PES-B12-5	0.2	CL	Silty CLAY: light brown, moist to dry, 60% clay, 40% silt, non-plastic.	
6					
7					
8					
9					
10	PES-B12-10	0.4	SP	Poorly Graded SAND: light brown, moist to dry, dense, 100% very fine to fine sand, poorly graced.	Groundwater not encountered.
11					Borehole terminated at 10 feet bgs. Borehole was backfilled with bentonite chips upon completion of sampling.
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					

Appendix B:

Laboratory Report

Alpha Scientific Corporation
Environmental Laboratories

02-22-2013

Mr. Ian Penney
Partner Engineering & Science
2154 Torrance Boulevard
Torrance, CA 90501

Project: 13-98945.1
Project Site: Yorba Linda, CA
Sample Date: 02-15-2013
Lab Job No.: PA302047

Dear Mr. Penney:

Enclosed please find the analytical report for the sample(s) received by Alpha Scientific Corporation on 02-15-2013 and analyzed by the following EPA methods:

EPA 8015M (Total Petroleum Hydrocarbons)
EPA 6010B/7471A for CAM Metals

All analyses have met the QA/QC criteria of this laboratory.

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

Alpha Scientific Corporation is a CA DHS certified laboratory (Certificate Number 2633). Thank you for giving us the opportunity to serve you. Please feel free to call me at (562) 809-8880 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph. D.
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.

Client:	Partner Engineering & Science	Lab Job No.:	PA302047
Project:	13-98945.1		
Project Site:	Yorba Linda, CA	Date Sampled:	02-15-2013
Matrix:	Soil	Date Received:	02-15-2013
Prepared Method for TPH-g: EPA 5035		Date Prepared:	02-15-2013
Batch No. for TPH-g:	AMB15-GS1	Date Analyzed:	02-15/16-2013
Batch No for TPH-d:	BB19-DS1	Date Analyzed:	02-19-2013
		Date Reported:	02-22-2013

EPA 8015M (Total Petroleum Hydrocarbons)
Reporting Units: mg/kg (ppm)

Sample ID	Lab ID	Gasoline Range (C4-C12)*	Diesel Range (C13-C23)	Oil Range (C24-C40)
MDL		0.2	1	20
PQL		0.5	5	40
Method Blank		ND	ND	ND
PES-B1-10	PA302047-1	ND	ND	ND
PES-B2-10	PA302047-2	ND	ND	ND
PES-B3-10	PA302047-3	ND	ND	ND
PES-B4-10	PA302047-4	ND	ND	ND
PES-B5-10	PA302047-5	ND	ND	ND
PES-B6-10	PA302047-6	ND	ND	ND
PES-B7-10	PA302047-7	ND	ND	ND
PES-B8-5	PA302047-8	ND	ND	ND
PES-B9-5	PA302047-9	ND	ND	ND
PES-B10-10	PA302047-10	ND	ND	ND
PES-B11-5	PA302047-11	ND	ND	ND
PES-B12-10	PA302047-12	ND	ND	ND

* Gasoline Range TPH result is obtained from purge and trap analysis using LUFT GC/MS Method;
MDL: Method Detection Limit; PQL: Practical Quantitation Limit;
ND: Not Detected (at the specified limit); J: Trace concentration, result between MDL and PQL

Client:	Partner Engineering & Science	Lab Job No.:	PA302047
Project:	13-98945.1		
Project Site:	Yorba Linda, CA	Date Sampled:	02-15-2013
Matrix:	Soil	Date Received:	02-15-2013
Digestion Method:	EPA 3050B	Date Digested:	02-19-2013
Batch No.:	0220-MS1	Date Analyzed:	02-20-2013
		Date Reported:	02-22-2013

EPA 6010B/7471A for Cam Metals (TTLC)
Reporting Units: mg/kg (ppm)

Element	Method Blank	PA302047-1	PA302047-2	PA302047-3	PA302047-4	PA302047-5	MDL	PQL
		PES-B1-10	PES-B2-10	PES-B3-10	PES-B4-10	PES-B5-10		
Antimony (Sb)	ND	ND	ND	ND	ND	ND	1	2
Arsenic (As)	ND	3.4	5.5	3.4	2.8	4.9	0.25	0.5
Barium (Ba)	ND	97.5	80.1	437	88.7	105	1	2
Beryllium (Be)	ND	ND	ND	ND	ND	ND	1	2
Cadmium (Cd)	ND	ND	ND	ND	ND	ND	1	2
Chromium (Cr)	ND	9.4	33.8	16.8	16.3	29.8	1	2
Cobalt (Co)	ND	8.4	9.4	15.6	13.8	12.9	1	2
Copper (Cu)	ND	12.4	31.1	17.3	15.9	37.2	1	2
Lead (Pb)	ND	2.2	3.0	ND	3.4	4.9	1	2
Mercury (Hg)	ND	ND	ND	ND	ND	ND	0.2	0.3
Molybdenum (Mo)	ND	ND	ND	3.0	2.0	ND	1	2
Nickel (Ni)	ND	11.9	20.2	16.6	20.6	21.6	1	2
Selenium (Se)	ND	ND	ND	ND	ND	ND	0.25	0.5
Silver (Ag)	ND	ND	ND	ND	ND	ND	1	2
Thallium (Tl)	ND	ND	ND	ND	ND	ND	1	2
Vanadium (V)	ND	112	106	82.9	63.0	120	1	2
Zinc (Zn)	ND	32.0	58.1	63.3	51.0	66.5	1	2

MDL: Method Detection Limit.

PQL: Practical Quantitation Limit.

ND: Not Detected (below MDL).

Client:	Partner Engineering & Science	Lab Job No.:	PA302047
Project:	13-98945.1		
Project Site:	Yorba Linda, CA	Date Sampled:	02-15-2013
Matrix:	Soil	Date Received:	02-15-2013
Digestion Method:	EPA 3050B	Date Digested:	02-19-2013
Batch No.:	0220-MS1	Date Analyzed:	02-20-2013
		Date Reported:	02-22-2013

EPA 6010B/7471A for Cam Metals (TTLC)
Reporting Units: mg/kg (ppm)

Element	Method Blank	PA302047-6	PA302047-7	PA302047-8	PA302047-9	PA302047-10	MDL	PQL
		PES-B6-10	PES-B7-10	PES-B8-5	PES-B9-5	PES-B10-10		
Antimony (Sb)	ND	ND	ND	ND	ND	ND	1	2
Arsenic (As)	ND	3.6	1.8	3.2	3.6	3.9	0.25	0.5
Barium (Ba)	ND	70.6	50.4	77.9	88.9	102	1	2
Beryllium (Be)	ND	ND	ND	ND	ND	ND	1	2
Cadmium (Cd)	ND	ND	ND	ND	ND	ND	1	2
Chromium (Cr)	ND	22.2	12.2	14.8	19.7	23.4	1	2
Cobalt (Co)	ND	13.8	7.3	7.2	9.9	10.0	1	2
Copper (Cu)	ND	19.3	20.0	9.0	10.9	17.7	1	2
Lead (Pb)	ND	3.9	3.4	2.0	2.6	ND	1	2
Mercury (Hg)	ND	ND	ND	ND	ND	ND	0.2	0.3
Molybdenum (Mo)	ND	ND	ND	ND	ND	4.3	1	2
Nickel (Ni)	ND	20.2	7.7	10.0	13.8	17.7	1	2
Selenium (Se)	ND	ND	ND	ND	ND	ND	0.25	0.5
Silver (Ag)	ND	ND	ND	ND	ND	ND	1	2
Thallium (Tl)	ND	ND	ND	ND	ND	ND	1	2
Vanadium (V)	ND	87.9	49.9	63.2	86.2	97.5	1	2
Zinc (Zn)	ND	53.2	32.5	30.4	38.2	51.9	1	2

MDL: Method Detection Limit.

PQL: Practical Quantitation Limit.

ND: Not Detected (below MDL).

Client:	Partner Engineering & Science	Lab Job No.:	PA302047
Project:	13-98945.1		
Project Site:	Yorba Linda, CA	Date Sampled:	02-15-2013
Matrix:	Soil	Date Received:	02-15-2013
Digestion Method:	EPA 3050B	Date Digested:	02-19-2013
Batch No.:	0220-MS1	Date Analyzed:	02-20-2013
		Date Reported:	02-22-2013

EPA 6010B/7471A for Cam Metals (TTLC)
Reporting Units: mg/kg (ppm)

Element	Method Blank	PA302047-11	PA302047-12				MDL	PQL
		PES-B11-5	PES-B12-10					
Antimony (Sb)	ND	ND	ND				1	2
Arsenic (As)	ND	4.7	1.8				0.25	0.5
Barium (Ba)	ND	91.3	24.2				1	2
Beryllium (Be)	ND	ND	ND				1	2
Cadmium (Cd)	ND	ND	ND				1	2
Chromium (Cr)	ND	16.9	5.3				1	2
Cobalt (Co)	ND	7.9	3.3				1	2
Copper (Cu)	ND	14.8	7.7				1	2
Lead (Pb)	ND	2.8	ND				1	2
Mercury (Hg)	ND	ND	ND				0.2	0.3
Molybdenum (Mo)	ND	ND	ND				1	2
Nickel (Ni)	ND	11.7	7.3				1	2
Selenium (Se)	ND	ND	ND				0.25	0.5
Silver (Ag)	ND	ND	ND				1	2
Thallium (Tl)	ND	ND	ND				1	2
Vanadium (V)	ND	64.8	18.8				1	2
Zinc (Zn)	ND	36.4	19.2				1	2

MDL: Method Detection Limit.

PQL: Practical Quantitation Limit.

ND: Not Detected (below MDL).

02-22-2013

TPH-Gasoline
Batch QA/QC Report

Client:	Partner Engineering & Science	Lab Job No.:	PA302047
Project:	13-98945.1		
Matrix:	Soil	Lab Sample ID:	PA302047-12
Batch No:	AMB15-GS1	Date Analyzed:	02-16-2013

I. MS/MSD Report
Unit: ppb

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-g	ND	1,000	1,080	1,260	108.0	126.0	15.4	30	70-130

II. LCS Result
Unit: ppb

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
TPH-g	946	1,150	82.3	80-120

ND: Not Detected (at the specified limit).

02-22-2013

EPA 8015M (TPH)
Batch QA/QC RePort

Client:	Partner Engineering & Science	Lab Job No.:	PA302047
Project:	13-98945.1		
Matrix:	Soil	Lab Sample ID:	PA302047-1
Batch No.:	BB19-DS1	Date Analyzed:	02-19-2013

I. MS/MSD Report
Unit: ppm

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-d	ND	200	253	254	126.5	127.0	0.4	30	70-130

II. LCS Result
Unit: ppm

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
TPH-d	232	200	116.0	80-120

ND: Not Detected (at the specified limit)

02-22-2013

EPA 6010B/7471A for Cam Metals (TTLC)
Batch QA/QC Report

lient:	Partner Engineering & Science	Lab Job No.:	PA302047
Project:	13-98945.1		
Matrix:	Soil	Lab Sample ID:	AG302061-1
Batch No.:	0220-MS1	Date Analyzed:	02-20-2013

I. MS/MSD Report
Unit: ppm

Analyte	EPA Method	MB Conc.	Spike Conc.	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
Antimony (Sb)	6010B	ND	10	95.9	100.8	5.0	30	70-130
Arsenic (As)	6010B	ND	10	100.7	105.7	4.9	30	70-130
Barium (Ba)	6010B	ND	10	97.2	98.0	0.8	30	70-130
Beryllium (Be)	6010B	ND	10	92.9	94.2	1.4	30	70-130
Cadmium (Cd)	6010B	ND	10	88.1	91.5	3.8	30	70-130
Chromium (Cr)	6010B	ND	10	91.0	92.8	1.9	30	70-130
Cobalt (Co)	6010B	ND	10	102.3	106.0	3.6	30	70-130
Copper (Cu)	6010B	ND	10	97.0	97.5	0.5	30	70-130
Lead (Pb)	6010B	ND	10	101.0	105.2	4.0	30	70-130
Molybdenum (Mo)	6010B	ND	10	99.0	103.7	4.6	30	70-130
Nickel (Ni)	6010B	ND	10	101.9	105.6	3.5	30	70-130
Selenium (Se)	6010B	ND	10	96.9	78.9	20.4	30	70-130
Silver (Ag)	6010B	ND	10	70.0	78.4	11.3	30	70-130
Thallium (Tl)	6010B	ND	10	102.7	98.8	3.8	30	70-130
Vanadium (V)	6010B	ND	10	90.5	91.3	0.8	30	70-130
Zinc (Zn)	6010B	ND	10	103.1	106.4	3.1	30	70-130

ND: Not Detected.

02-22-2013

EPA 6010B/7471A for CAM Metals
Batch QA/QC Report

lient:	Partner Engineering & Science	Lab Job No.:	PA302047
Project:	13-98945.1		
Matrix:	Soil	Lab Sample I.D:	LCS
Batch No.:	0220-MS1	Date Analyzed:	02-20-2013

II. LCS Result
Unit: ppm

Analyte	EPA Method	LCS Value	True Value	Rec.%	Accept. Limit
Antimony (Sb)	6010B	9.799	10	98.0	80-120
Arsenic (As)	6010B	9.449	10	94.5	80-120
Barium (Ba)	6010B	9.390	10	93.9	80-120
Beryllium (Be)	6010B	9.329	10	93.3	80-120
Cadmium (Cd)	6010B	9.034	10	90.3	80-120
Chromium (Cr)	6010B	10.18	10	101.8	80-120
Cobalt (Co)	6010B	9.628	10	96.3	80-120
Copper (Cu)	6010B	9.608	10	96.1	80-120
Lead (Pb)	6010B	9.092	10	90.9	80-120
Molybdenum (Mo)	6010B	9.460	10	94.6	80-120
Nickel (Ni)	6010B	8.529	10	85.3	80-120
Selenium (Se)	6010B	9.852	10	98.5	80-120
Silver (Ag)	6010B	8.359	10	83.6	80-120
Thallium (Tl)	6010B	9.874	10	98.7	80-120
Vanadium (V)	6010B	8.282	10	82.8	80-120
Zinc (Zn)	6010B	9.566	10	95.7	80-120

ND:Not Detected (at the specified limit).

ALPHA SCIENTIFIC CORPORATION
16760 Gridley Road
Cerritos, CA 90703
Tel: (562) 809-8880
Fax: (562) 809-8801

CHAIN OF CUSTODY RECORD

Lab Job Number PA302047

Client: Partner Engineering & Science, Inc.

Address: 2154 Torrance Boulevard, Torrance, California 90501

Report Attention	Phone	Fax	Sampled by
I. Penney	310-615-4500	310-615-4544	I. Penney

Project Name/No.: 17-98445.1

Project Site: Yorba Linda, CA

T.A.T. Requested: ☐ Rush 8 12 24 hrs ☐ 2-3 days ☒ Normal

Sample Condition: ☒ Chilled ☒ Intact ☐ Sample Seals

Client Sample ID	Lab Sample ID	Sample Collect Date	Sample Collect Time	Matrix Type	Sample Preserv	No.,type* & size of container	8015M (Gasoline)	8015M (Diesel)	8260B (BTEX, Oxygenates)	**8260B (VOCs)**	8270C (SVOCs)	CAM Metals (6010B/7471A)	8015M (Chain)	314 (Perchlorate)	8260B (TCE)	Remark
PES-B1-5	PA302047	2/15/13	0840	Soil	Ice	1 Steel										
-10	-1		0844									X	X			
-15			0850													
PES-B2-5			0902													
-10	-2		0909									X	X			
-15			0912													
-20			0920													
PES-B3-5			0941													
-10	-3		0943									X	X			
PES-B4-5			0954													
-10	-4		0956									X	X			
PES-B5-5			1025													
-10	-5		1027									X	X			
PES-B6-5			1039													
-10	-6		1042									X	X			

Relinquished by	Company	Date	Time	Received by	Company	Date	Time
[signature]	PESI	2/15/13	14:00	[signature]	ASC	2/15/13	14:00 pm
Relinquished by	Company	Date	Time	Received by	Company	Date	Time

Container types: M=metal Tube, A=Air Bag, P=Plastic bottle, G=Glass bottle, V=VOA vial

ALPHA SCIENTIFIC CORPORATION

16760 Gridley Road
Cerritos, CA 90703

Tel: (562) 809-8880
Fax: (562) 809-8801

CHAIN OF CUSTODY RECORD

Lab Job Number PA302047

Client: Partner Engineering & Science, Inc.

Address: 2154 Torrance Boulevard, Torrance, California 90501

Report Attention	Phone	Fax	Sampled by
I. Penney	310-615-4500	310-615-4544	I. Penney

Project Name/No.: 12-9845.1

Project Site: Yorba Linda, CA

T.A.T. Requested: ☐ Rush 8 12 24 hrs ☐ 2-3 days ☒ Normal

Sample Condition: ☒ Chilled ☒ Intact ☐ Sample Seals

Client Sample ID	Lab Sample ID	Sample Collect Date	Sample Collect Time	Matrix Type	Sample Preserv	No.,type* & size of container	8015M (Gasoline)	8015M (Diesel)	8260B (BTEX, Oxygenates)	**8260B (VOCs)**	8270C (SVOCs)	CAM Metals (6010B/7471A)	8015M (Chain)	314 (Perchlorate)	8260B (TCE)				Remark
PES-B7-5	PA302047-	2/6/13	1049	Soil	Ice	1 Glass													
-10	-7		1052									X	X						
PES-B8-5	-8		1102									X	X						
-10			1105																
PES-B9-5	-9		1114									X	X						
-10			1116																
PES-B10-5			1124										X						
-10	-10		1126									X	X						
PES-B11-5	-11		1141									X	X						
-10			1145																
PES-B12-5			1159																
-10	-12		1201									X	X						

Relinquished by	Company	Date	Time	Received by	Company	Date	Time
[signature]	PES	2/15/13	16:00	[signature]	ASC	2/15/13	14:00
Relinquished by	Company	Date	Time	Received by	Company	Date	Time

Container types: M=metal Tube, A=Air Bag, P=Plastic bottle, G=Glass bottle, V=VOA vial

PARTNER
Engineering and Science, Inc.

SOIL MANAGEMENT PLAN

APNs 351-013-04, -05, & -17
Yorba Linda, California 92887

February 28, 2013
Partner Project Number 13-98945.1

Prepared For

SAGE COMMUNITY GROUP, INC.
3 Corporate Plaza, Suite 102
Newport Beach, California 92660

TABLE OF CONTENTS

1.0 INTRODUCTION

Partner Engineering and Science, Inc. (Partner) was retained by Sage Community Group, Inc. to prepare the following Soil Management Plan (SMP) for the property located at APNs 351-013-04, -05, & -017 in Yorba Linda, California (herein after referred to as "site" or "subject property").

1.1 Authorization

Sage Community Group, Inc. (Client) provided project authorization through a signed copy of Partner Proposal Number P13-98945A.

1.2 Purpose

The purpose of the SMP is to outline protocol for ensuring the proper handling and/or disposal of impacted soil that may be encountered during future grading and/or other redevelopment activities. Specifically, the SMP includes a summary of the site history and potential chemicals of concern (COCs) and provides guidance for the following: identifying suspected impacted soil; managing and stockpiling graded soil (e.g., dust control, stockpile maintenance); collecting and analyzing samples from stockpiled soil as necessary to establish waste classification; establishing specific threshold levels to evaluate whether excavated soil is suitable for reuse on-site; and handling and/or disposing of soil with confirmed impacts.

1.3 Limitations

Conclusions and/or recommendations are based on the observations, laboratory analyses, and the governing regulations. Conclusions and/or recommendations beyond those stated and reported herein should not be inferred from this document.

Partner warrants that the environmental consulting services contained herein were accomplished in accordance with generally accepted practices in the environmental engineering, geology, and hydrogeology fields that existed at the time and location of work. No other warranties are implied or expressed.

Sage Community Group, Inc. engaged Partner to perform this assessment in accordance with an agreement governing the nature, scope, and purpose of the work as well as other matters critical to the engagement. All reports, both verbal and written, are for the sole use and benefit of Sage Community Group, Inc. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with Partner granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against Partner, its officers, employees, vendors, successors, or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, Client, and their respective officers, employees, vendors, successors,

and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees), and costs attributable to such Use. Unauthorized use of this report shall constitute acceptance of and commitment to these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted. Additional legal penalties may apply.

2.0 SITE HISTORY AND BACKGROUND

2.1 Site Description

The subject property consists of three parcels of land totaling approximately 116.25 acres located to the northwest of Yorba Linda Boulevard and Dorinda Road, with access off Dorinda Road, in a residential area of Yorba Linda, California. Adjacent properties consist of undeveloped land to the northeast and east, and single-family residences in the remaining directions. Please see Figure 2.1-1 for a site vicinity map.

The southern portion of the subject property is currently developed as an oil production field with five functioning pump-jacks, one idle pump-jack, one abandoned well location, and various tanks and other oil field features. The remainder of the site consists of dirt roads and undeveloped hillsides. Please see Figure 2.1-2 for a site plan.

Based on an interview with the Client, Partner understands that the subject property will be redeveloped for residential use. Redevelopment will include the demolition of current on-site improvements and site grading.

2.2 Project History

According to information provided by the Client, the subject property is currently developed with six oil wells and one abandoned oil well. Eight aboveground oil storage tanks are currently located on the subject property in association with the oil wells. The on-site wells will be abandoned and moved to another location on the property. A review of previous site investigation reports completed for the subject property indicates that soils at the subject property are impacted by petroleum hydrocarbons. However, the only data available for review summarized in the 1998 Site Assessment Report prepared by Avanti Environmental, Inc. was for total recoverable petroleum hydrocarbons (TRPH).

To further investigate the detected TRPH at the site, Partner performed a concurrent Phase II Subsurface Investigation (Phase II) at the subject property, the results of which are summarized in a February 28, 2013, report. The objective of the Phase II was to further investigate the impact of petroleum hydrocarbons and/or metals to soil as a consequence of a release or releases from on-site oil production activities. The investigation scope included the advancement of 12 soil borings. Twenty-seven soil samples were collected and 12 soil samples were analyzed for carbon chain total petroleum hydrocarbons (TPH-cc) and California Administrative Manual (CAM) 17 Metals. Please see Figures 2.2-1 and 2.2-2 for maps of the western and eastern boring locations, respectively.

None of the analyzed soil samples had detectable concentrations of TPH-cc. Detected concentrations of metals were within background levels and/or below available regulatory guidelines.

3.0 GEOLOGY AND HYDROGEOLOGY

Based on a review of the United States Geological Survey (USGS) Yorba Linda, California Quadrangle topographic map, the subject property is situated at an elevation between 675 and 780 feet above mean sea level on the southwestern piedmont of San Juan Hill. The local topography slopes steeply to the south.

Based on boring logs from the Phase II, the underlying subsurface consists predominantly of light brown, moist to dry, silts (ML) and clays (CL) with varying stiffness and sand content from the ground surface to approximately 20 feet below ground surface (bgs).

Groundwater was not encountered in borings during the Phase II. According to the State Water Resources Control Board (SWRCB) GeoTracker Website, a nearby Leaking Underground Storage Tank (LUST) site is Orange County Fire Department Station #32 (global facility identification number T0605901720), at 20990 Yorba Linda Boulevard in the City of Yorba Linda, California, which is approximately 1.0 mile southwest of the subject property and is overseen by the Santa Ana Regional Water Quality Control Board (SARWQCB) as Case Number 083002399T. The most recent monitoring data available on the GeoTracker Website indicates a depth to groundwater of approximately 80 feet bgs.

4.0 CHEMICALS OF CONCERN

Based on the historical on-site oil production operations, COCs for the subject property include heavy end petroleum hydrocarbons (e.g., total petroleum hydrocarbons as oil [TPH-o]) and heavy metals (e.g., arsenic, lead and chromium). The following is a list of COCs detected during the Phase II. Please note that metals detected below background levels are not included below.

- Molybdenum (two soil samples [PES-B3-10 and PES-B10-10])

The detected concentrations of COCs did not exceed available regulatory guidelines.

Additionally, as indicated above, although not detected in soil samples collected as part of the Phase II, TPH constituents may be encountered during site development activities.

5.0 SOIL MANAGEMENT

This section outlines the protocol for the proper handling and/or disposal of impacted soil that may be encountered during site grading and/or other redevelopment activities.

5.1 Applicability

The SMP applies to soil-disturbing activities associated with the site redevelopment, including excavation, grading, trenching, utility installation, and/or other activities that could potentially generate COC-impacted soil. Field personnel directly involved with soil-disturbing activities should be familiar with the contents of the SMP (and the VOC emissions mitigation plan; refer to Section 5.12 for additional details). However, the SMP does not need to be applied to soil-disturbing activities in areas previously screened under the SMP (e.g., trenching in an area backfilled/compacted with soil previously deemed suitable for reuse on-site in accordance with the SMP protocol).

Implementation of the SMP is intended to coincide with the start of site grading activities.

5.2 Duration

The SMP shall remain in effect from the start of grading activities and for the duration of the site redevelopment involving soil-disturbing activities.

5.3 Key Roles and Responsibilities

The following is a list of key roles involved with the SMP and the respective general responsibilities:

- Client (Sage Community Group, Inc.) – Responsible for selecting and engaging the main contractor(s) and environmental professional(s) involved with the subject property redevelopment and/or implementation of the SMP
- General Contractor (GC) – Responsible for overseeing the subject property grading/redevelopment/construction activities, managing the associated subcontractors (including the dewatering subcontractor, if necessary; refer to Section 5.18 for additional details), and the initial soil screening (refer to Section 5.9 for additional details)
- Environmental Consultant (EC) – Responsible for implementing the SMP; the EC staff must be overseen by a registered professional engineer or geologist with the State of California and qualified by education, training, and/or experience to implement the SMP

5.4 Health and Safety

The EC will be responsible for preparing a separate site-specific health and safety plan (HASP) that will be implemented in conjunction with the SMP when handling soil with suspected or

confirmed COC impacts. At a minimum, the HASP should identify the potential COCs and/or other hazards of concern and establish guidelines and/or procedures for controlling/minimizing exposures to potential COCs/hazards, including the appropriate level(s) of personal protective equipment (PPE). The GC will be responsible for non-COC-related health and safety concerns associated with the excavation (e.g., excavation stability, stockpile placement, heavy equipment operation).

5.5 Pre-Construction Meeting

Prior to grading/redevelopment/construction activities, representatives of the Client, the GC, and the EC should meet to review and discuss the contents of the SMP, roles and responsibilities, and the grading/redevelopment schedule.

5.6 Undocumented USTs

Addressing undocumented USTs is beyond the scope of the SMP. If encountered during site grading and/or redevelopment activities, the GC should cordon off and halt construction activities in the immediate area of the encountered UST(s) and notify the EC. The EC will be responsible for properly decommissioning the UST(s) in accordance with applicable regulatory guidelines. The above protocol may also be applied for other undocumented subsurface features of potential environmental concern that may be encountered during site grading and/or redevelopment activities (e.g., hydraulic lifts, buried drums).

5.7 Work Area Control

Control of the work area (e.g., perimeter fencing) will be the responsibility of the GC. In general, the work area should be secured as to limit access only to the personnel qualified and authorized to be on-site.

5.8 General Decision Process for Handling Disturbed Soil

Evaluating whether excavated soil is suitable for reuse on-site and selecting which off-site facility or facilities are suitable for receiving exported soil will be based on up to three criteria: (1) field observations (e.g., evidence of staining, odor); (2) soil monitoring readings with an organic vapor analyzer (OVA); and/or (3) laboratory analysis results. Please see Appendix A for the general decision process for handling disturbed soil. The process steps are discussed in detail in the proceeding Sections.

5.9 Initial Soil Monitoring and Segregation

The South Coast Air Quality Management District (AQMD) defines VOC-contaminated soil as "soil which registers a concentration of 50 ppm [parts per million] or greater of [VOCs] as measured before suppression materials have been applied and at a distance of no more than three

inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane." At this time, handling of VOC-contaminated soil is not anticipated during the site redevelopment considering the results of the Phase II and the on-site activities. Accordingly, the primary initial criterion for segregating soil generated during soil-disturbing activities will be the field observations of the GC excavation personnel. Soil devoid of evident impacts (e.g., staining, odor) will be deemed suitable for unrestricted use and may be reused on-site as backfill material or exported off-site. Handling, exporting, and management of unrestricted soil will defer to the GC. In the event that soil exhibiting discoloration and/or odor is encountered during soil-disturbing activities, soil screening with an OVA (discussed further in Section 5.10) will be necessary to select the appropriate soil handling procedures. Soil exhibiting impacts should remain segregated in separate stockpiles from soil deemed suitable for unrestricted use.

5.10 Screening of Soil Exhibiting Impacts

If soil exhibiting discoloration and/or odor is encountered during the course of soil-disturbing activities, handling of soil exhibiting impacts should cease, the immediate area should be cordoned off by the GC, and the EC should be notified of the encountered conditions. The EC will require a minimum 24-hour advanced notice from the GC for dispatching personnel to the site. Soil disturbing activities in the cordoned off area may resume when the EC representative is on-site.

The EC will provide an OVA that has been calibrated by the manufacturer within 3 months of the date of fieldwork. The OVA will be calibrated prior to the start of fieldwork using hexane calibration gas (or the OVA readings will be correlated and expressed as hexane using equivalency factors provided by the manufacturer if a calibration gas other than hexane is used).

The EC will direct the GC personnel to excavate into the soil exhibiting impacts. Disturbed soil will be monitored with the OVA with readings collected no later than 3 minutes after excavation and at a distance of no more than 3 inches between the OVA intake and the soil surface. If the initial OVA readings of the soil exhibiting impacts register a concentration of less than 50 ppm of VOCs, the soil will be classified as non-VOC-impacted and may be reused on-site as backfill material if the soil meets the reuse criteria (see Section 5.11 for additional details) or exported off-site (subject to waste profiling; see Section 5.16 for additional details). However, if the initial OVA readings register a concentration of 50 ppm or greater of VOCs, the soil will be classified as VOC-impacted and soil in the immediate area will be handled in accordance with an AQMD-approved mitigation plan. Handling of VOC-contaminated soil is discussed further in Section 5.12.

5.11 On-Site Reuse of Excavated Soil

Unrestricted soil indentified by the initial soil monitoring as described in Section 5.9 may be reused on-site as backfill material without further assessment. Soil classified as non-VOC-contaminated through OVA screening as described in Section 5.10 may be reused on-site as

backfill material if concentrations of COCs are below Environmental Protection Agency (EPA) Region 9 Regional Screening Levels (RSLs) and SWRCB Maximum Soil Screening Levels (SSLs). Please see Table 5.11-1 for a summary of the criteria for on-site reuse of soil for the primary COCs.

Table 5.11-1: Criteria for On-Site Reuse of Soil

EPA Method	COC	Screening Level (mg/kg)	Basis
8015M	TPH-g	500	Maximum SSL*
	TPH-d	1,00	
	TPH-o	10,000	
6010B/7471A	Antimony (Sb)	31	Residential Soil RSL
	Arsenic (As)	12**	
	Barium (Ba)	15,000	
	Beryllium (Be)	160	
	Cadmium (Cd)	70	
	Chromium (Cr)	120,000	
	Cobalt (Co)	23	
	Copper (Cu)	3,100	
	Lead (Pb)	400	
	Mercury (Hg)	10	
	Molybdenum (Mo)	390	
	Nickel (Ni)	1,500	
	Selenium (Se)	390	
	Silver (Ag)	390	
	Thallium (Tl)	0.78	
	Vanadium (V)	390	
	Zinc (Zn)	23,000	

*Assuming depth to groundwater is between 20 and 150 feet
**From California Department of Toxic Substance Control March 2008 report *Determination of a Southern California Regional Background Arsenic Concentration in Soil*.
EPA = Environmental Protection Agency
COC = chemical of concern
mg/kg = milligrams per kilogram
TPH-g = total petroleum hydrocarbons as gasoline
TPH-d = total petroleum hydrocarbons as diesel
TPH-o = total petroleum hydrocarbons as oil
SSL = Soil Screening Level
RSL = Regional Screening Level

If one or more criterion for on-site reuse of soil is exceeded, the soil is considered unsuitable for on-site reuse and must be exported off-site. Protocol for exporting soil off-site is discussed further in Section 5.17.

Note that protocol in the SMP for evaluating whether excavated soil is suitable for reuse on-site is based solely on the absence or presence and magnitude of COC impacts. Other factors (e.g., geotechnical and/or structural considerations) are not accounted for in the SMP and will be the

responsibility of the GC. In addition, the GC will be responsible for evaluating the suitability of imported fill material for use on-site. In general, the GC should not import backfill material impacted by COCs. The EC could assist the GC with meeting this requirement.

5.12 Handling of VOC-Contaminated Soil

In accordance with AQMD Rule 1166, a mitigation plan minimizing VOC emissions to the atmosphere is required during excavation, grading, handling, and/or treatment of VOC-contaminated soil. The mitigation plan must be approved by the AQMD Executive Officer.

For sites where more than 2,000 cubic yards of VOC-contaminated soil will be excavated and handled within any consecutive 12-month period, a site-specific mitigation plan will be required. For sites where less than 2,000 cubic yards of VOC-contaminated soil will be excavated and handled within any consecutive 12-month period, a pre-approved AQMD Rule 1166 Various Locations Mitigation Plan may be implemented. Considering the presumed limited extent of soil-disturbing activities and the results of the Phase II, the SMP has been written under the assumption that, if encountered, less than 2,000 cubic yards of VOC-contaminated soil would be excavated and handled. The SMP can be amended and/or revised if changes to the redevelopment and/or additional information indicate that the 2,000-cubic yard threshold of VOC-contaminated soil may be exceeded.

Please see Appendix B for a sample AQMD Rule 1166 Various Locations Mitigation Plan. The EC will be responsible for complying with the requirements of the AQMD-approved mitigation plan. The AQMD-approved mitigation plan must be implemented in conjunction with the SMP during handling of VOC-contaminated soil. Additional requirements regarding, but not limited to, soil monitoring, handling, storage, removal, and disposal and reporting specified in the AQMD-approved mitigation plan for VOC-contaminated soil must be fulfilled and will supersede if in conflict with the SMP.

The EC will require a minimum 24-hour advanced notice from the GC for dispatching personnel to the site. The AQMD must be provided a minimum 24-hour advanced notice of the initial implementation of the Rule 1166 Various Locations Mitigation Plan by fax prior to commencing with excavation of VOC-contaminated soil.

The EC will provide an OVA that has been calibrated by the manufacturer within 3 months of the date of fieldwork. The OVA will be calibrated prior to the start of fieldwork using hexane calibration gas (or the OVA readings will be correlated and expressed as hexane using equivalency factors provided by the manufacturer if a calibration gas other than hexane is used).

The EC will be required to be present on-site for soil-disturbing activities in the immediate area(s) identified with VOC-contaminated soil. Disturbed soil will be monitored with the OVA at a minimum frequency of one reading for every 2 cubic yards of soil excavated, not to exceed 15 minutes between readings. Readings will be collected no later than 3 minutes after

excavation and at a distance of no more than 3 inches between the OVA intake and the soil surface.

Based on the soil monitoring results, excavated soil will be segregated into two categories: VOC-contaminated soil and non-VOC-contaminated soil.

In accordance with the AQMD Rule 1166 Various Locations Mitigation Plan, soil classified as VOC-contaminated (i.e., registering an OVA reading of 50 ppm or greater of VOCs) is not permitted to be reused on-site as backfill and must be transported to an AQMD-approved off-site treatment/disposal facility. Refer to Section 5.17.1 for details regarding disposal of VOC-contaminated soil.

VOC-contaminated soil will be further segregated into two categories: soil registering OVA readings less than 1,000 ppm and soil registering OVA readings equal to or greater than 1,000 ppm. Refer to Sections 5.13.1 and 5.13.2 for stockpile management protocol for the two respective categories of soil.

Soil classified as non-VOC-contaminated may be reused on-site as backfill material (if the soil meets on-site reuse criteria; see Section 5.11) or exported off-site (see Section 5.17.3 for details).

Note that the soil handling procedures outlined in the Rule 1166 Various Locations Mitigation Plan only apply to soil disturbing activities in the immediate area(s) where VOC-contaminated soil has been identified.

5.13 Soil Stockpile Management

Each category of VOC-contaminated soil and non-VOC-contaminated soil must be segregated and stored separately. Stockpile management procedures for the three categories are discussed in the following Sections.

5.13.1 VOC-Contaminated Soil (<1,000 ppm)

VOC-contaminated soil registering OVA readings less than 1,000 ppm can be immediately loaded onto trucks and transported to an AQMD-approved off-site treatment/disposal facility (refer to Section 5.17.1 for details regarding disposal of VOC-contaminated soil) or can be temporarily stockpiled on-site prior to exporting.

Each individual stockpile must not contain more than 400 cubic yards of soil. With the exception of the stockpile work face (i.e., portion of the stockpile where excavated soil is added), stockpiles must be placed on and covered while on-site with 6-mil polyethylene sheeting so that no portion of the VOC-contaminated soil is exposed to the atmosphere. The polyethylene sheeting seams must overlap a minimum of 24 inches and be secured with duct tape. The stockpile work face(s) should be similarly covered/secured during periods of inactivity longer

than 1 hour and stockpiles, including the work face(s), must be completely covered and securely anchored at the end of each workday.

Once covered and secured, the stockpiles should remain undisturbed and should not be reshaped or relocated as much as feasible until the soil is exported from the site. The soil must be transported to an AQMD-approved off-site treatment/disposal facility within 30 calendar days of excavation.

5.13.2 VOC-Contaminated Soil (≥1,000 ppm)

VOC-contaminated soil registering OVA readings equal to or greater than 1,000 ppm cannot be stockpiled on-site. If encountered, the AQMD must be notified within 1 hour of detection; the work area must be immediately sprayed with water; and the VOC-contaminated soil must be directly loaded onto trucks, sprayed with additional water, covered, and transported to an AQMD-approved off-site treatment/disposal facility (refer to Section 5.17.1 for details regarding disposal of VOC-contaminated soil). If VOC-contaminated soil registering OVA readings equal to or greater than 1,000 ppm is encountered, but trucks for immediate exporting are not available, soil disturbance in the immediate area must cease and may only resume once the excavation can proceed with direct loading of soil onto trucks.

5.13.3 Non-VOC-Contaminated Soil

Management of non-VOC-contaminated soil (e.g., stockpile sizes, cover requirements) will defer to the GC.

5.14 Vapor Suppression and Dust Control

To suppress vapor emissions during soil disturbances of VOC-contaminated soil, excavations should be kept moist by periodically spraying the work area with water. In addition, exposed soil surfaces of stockpiles of VOC-contaminated soil should be kept moist with water.

Dust control during the site redevelopment will defer to the protocol established by the GC.

5.15 Surface Water Protection

Responsibility for surface water protection (e.g., prevention of sediment runoff into storm drains) and implementation of best management practices (BMPs), if required for the site redevelopment, will defer to the GC.

5.16 Soil Stockpile Sampling

Excavated soil classified as non-VOC-contaminated through OVA screening as described in Section 5.10 must be characterized through the collection and analysis of samples to evaluate the

suitability of the material for reuse on-site, or, if exported, to evaluate whether the material meets the acceptance requirements of the receiving facility or facilities. Prior to exporting off-site, excavated soil classified as VOC-contaminated through OVA screening as described in Section 5.10 must be characterized through the collection and analysis of samples to evaluate whether the material meets the acceptance requirements of the receiving AQMD-approved treatment/disposal facility or facilities. A set of laboratory analysis data for waste profiling must be generated for each exported soil designation category (excluding unrestricted soil).

5.16.1 Sampling Frequency

For exported soil, the sampling frequency will default to the sampling frequency specified by each selected receiving facility to meet the respective acceptance requirements. If not provided, the sampling frequency will default to the procedures set forth in the most recently promulgated edition of the EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (EPA SW-846). The guidance will also apply for establishing the sampling frequency of soil planned for on-site reuse as backfill. In general, EPA SW-846 provides a method for assessing the mean concentration of a given chemical within a soil mass and the number of samples necessary to calculate this mean to within an acceptable confidence level.

The following sampling schedule may be used to estimate the minimum number of samples necessary to meet the statistical requirements set forth in EPA SW-846:

- Stockpiles less than 500 cubic yards: One sample for every 25 cubic yards
- Stockpiles from 500 to 1,000 cubic yards: Twenty samples plus one sample for every 100 cubic yards in excess of the initial 500 cubic yards
- Stockpiles from 1,000 to 10,000 cubic yards: Twenty-five samples plus one sample for every 500 cubic yards in excess of the initial 1,000 cubic yards
- Stockpiles greater than 10,000 cubic yards: Forty-three samples plus one sample for every 5,000 cubic yards in excess of the initial 10,000 cubic yards

Note that the above schedule is only a guide and that more or less samples than specified may be required to meet the statistical requirements set forth in EPA SW-846. In addition, it is not necessary to consider each individual stockpile separately. Soils in separate stockpiles that are expected to exhibit similar conditions of COC impacts can be considered part of the same soil mass for the purposes of EPA SW-846 sampling.

5.16.2 Sampling Protocol

The method for selecting the soil stockpile sample locations (e.g., simple random sampling, systematic random sampling) will be based on the professional judgment of the EC and/or field-screening results.

In general, discrete soil samples should be analyzed. However, composite sampling may be acceptable depending on the receiving facility requirements, the professional judgment of the EC, and/or the target analytes. Compositing should be completed by the laboratory and no more than four discrete samples should comprise a composite sample. Composite samples should not be analyzed for target analytes that are volatile or semi-volatile.

Samples should be collected in pre-cleaned, analysis-appropriate containers; preserved (e.g., sodium bisulfate, ice) as required for the specified analysis method; labeled with unique sample identifications; and transported to the laboratory under proper chain-of-custody protocol.

Sampling equipment should be decontaminated between sampling points to reduce the potential for cross-contamination.

5.16.3 Laboratory Analyses

The laboratory analysis suite (e.g., target analytes, methods) for soil planned for on-site reuse as backfill is provided in Table 5.11-1. For soil that will be exported, the laboratory analysis suite will default to the laboratory analysis suite specified by each selected receiving facility to meet the respective acceptance requirements. However, at a minimum, samples should be analyzed for TPH-cc, CAM 17 Metals, and VOCs.

The laboratory or laboratories conducting the sample analyses should be State-certified and run surrogate samples and method blanks as part of the Quality Assurance/Quality Control (QA/QC) program. Analyses should be performed within the accepted method hold times.

5.17 Exporting Soil Off-Site

Three exported soil designation categories are anticipated: VOC-contaminated, unrestricted, and non-hazardous. Procedures for exporting each soil designation category are discussed in the following Sections.

5.17.1 Exporting of VOC-Contaminated Soil

Excavated soil classified as VOC-contaminated through soil monitoring is not permitted to be reused on-site as backfill and must be exported off-site. Soil classified as VOC-contaminated should be profiled based on the laboratory analysis results and transported under waste manifest documentation to an AQMD-approved facility or facilities permitted to receive the waste for treatment and/or disposal. The EC will be responsible for selecting the appropriate receiving facility for VOC-contaminated soil. Note that though the soil will be designated as VOC-contaminated, the soil is anticipated to be classified as non-hazardous (as opposed to Resource Conservation & Recovery Act [RCRA] or non-RCRA hazardous) for waste disposal purposes given the historical usage of the subject property and the results of the previous subsurface investigation.

5.17.2 Exporting of Unrestricted Soil

The GC will be responsible for selecting and complying with the requirements of the facility or facilities that will receive the exported unrestricted soil. Note that other factors beyond the scope of the GMP (e.g., soil parameters such as pH) may affect whether a receiving facility is able to accept the unrestricted soil.

5.17.3 Exporting of Non-Hazardous Soil

Exported soil will be classified as non-hazardous if soil monitoring results designate the soil as non-VOC-contaminated, but the soil exhibits an odor and/or discoloration and/or laboratory analysis results indicate the presence of target analytes above the soil screening criteria provided in Table 5.11-1 and/or background levels (i.e., not meeting the acceptance requirements of the unrestricted soil receiving facility).

Soil classified as non-hazardous should be profiled based on the laboratory analysis results and transported under proper bill of lading or waste manifest documentation to an appropriate off-site facility that is permitted to receive the waste for treatment and/or disposal (typically a soil recycler and/or landfill). The EC or the EC in conjunction with the GC will be responsible for selecting the appropriate receiving facility for non-hazardous soil.

5.17.4 Soil Classified as Hazardous Waste

Given the historical usage of the subject property and the results of the previous subsurface investigation, generation of soil classified as RCRA or non-RCRA hazardous (i.e., meeting Federal or State hazardous waste criteria, respectively) is not anticipated during grading/redevelopment/construction activities. However, if identified through the laboratory analysis results, soil classified as RCRA or non-RCRA hazardous should be profiled based on the laboratory analysis results and transported under waste manifest documentation to an off-site facility permitted to receive the waste for treatment and/or disposal (typically a landfill or incinerator). Hazardous waste must be transported by a hauler licensed to transport hazardous waste. The EC will be responsible for selecting the appropriate receiving facility for RCRA and/or non-RCRA hazardous soil.

6.0 REPORTING

The EC will be responsible for preparing a summary report for submittal to the Client. At a minimum, the report should include a summary of field activities, Rule 1166 compliance documentation (e.g., soil monitoring records) if VOC-contaminated soil was encountered; laboratory analysis reports; and off-site disposal documentation (if soil was exported). The EC will also be responsible for complying with records and reporting requirements of the AQMD if VOC-contaminated soil was encountered.

7.0 SIGNATURES OF PARTICIPATING PROFESSIONALS

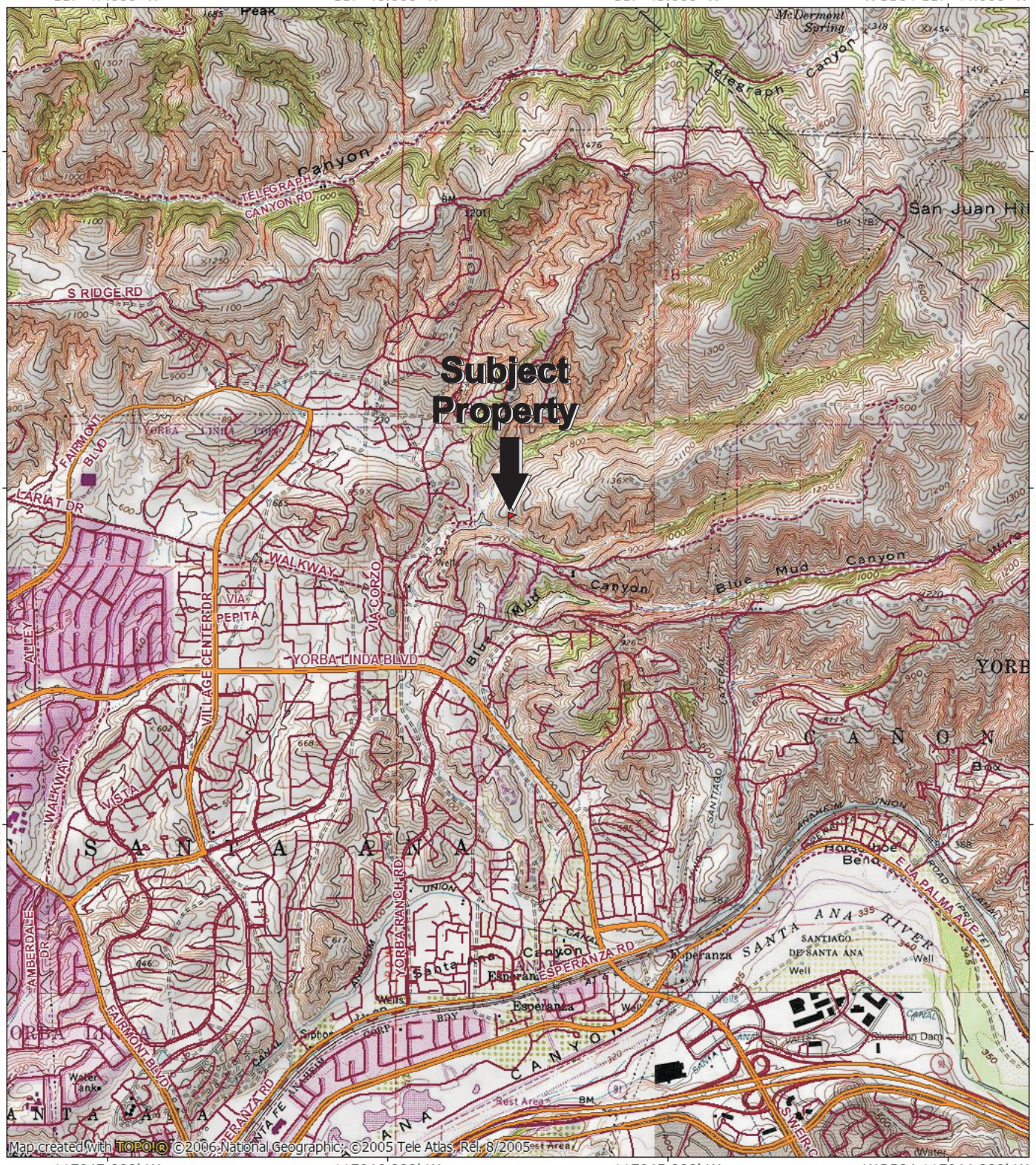
Thank you for the opportunity to be of service. If you have questions regarding this SMP, please contact the undersigned at (310) 615-4500.

Sincerely,

Samantha J. Harris, PG
Project Geologist

Kristine M. MacWilliams, PE
Technical Director – Phase II Assessment

Figures



PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

Project Number: 13-98945.1

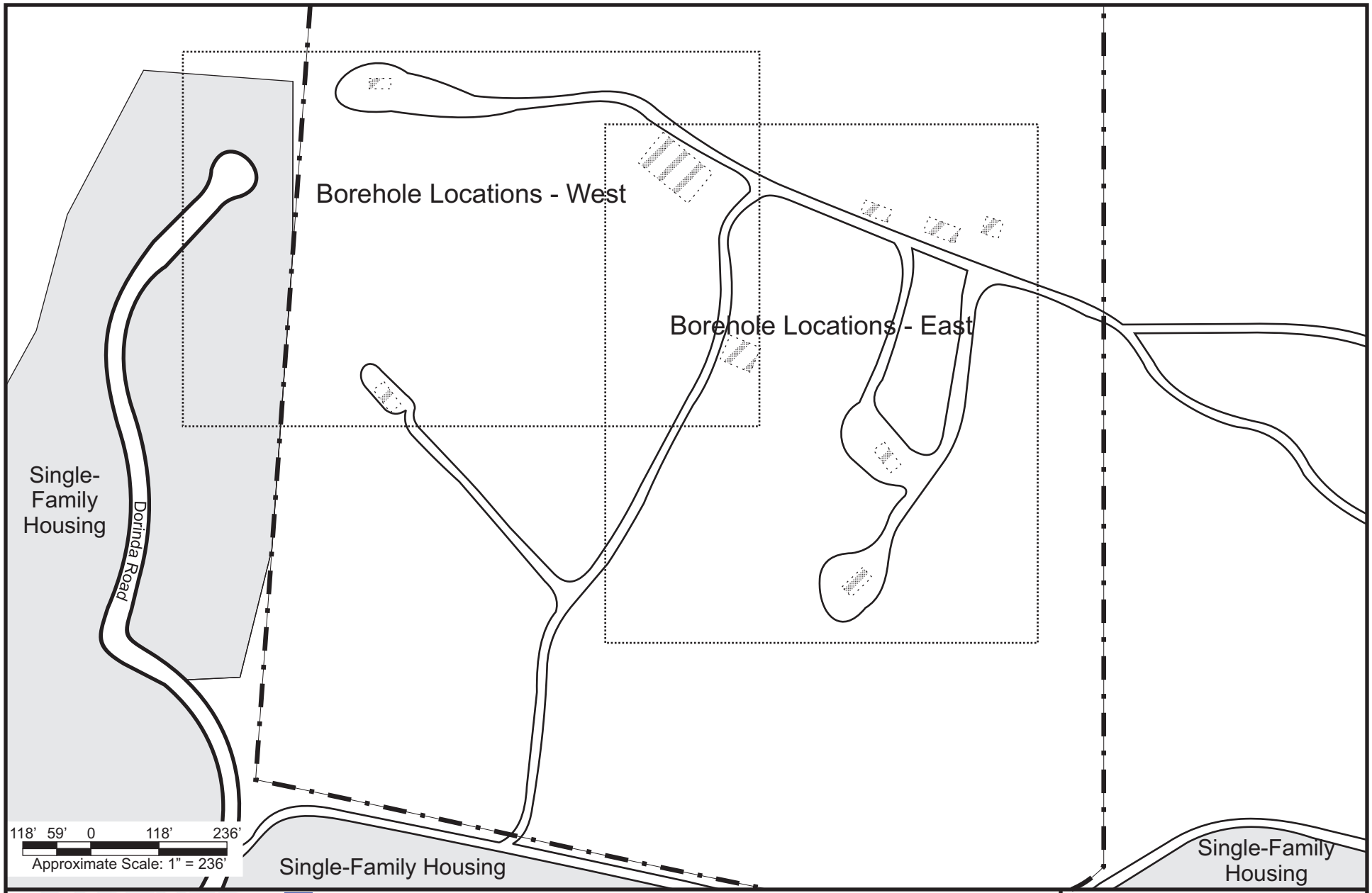
Legend

USGS Yorba Linda, CA Quadrangle
Version: 1978 Current as of: 1981

Site Vicinity Map

Figure	Prepared By	Date
2.1-1	I. Penney	February 2013

APNs 351-031-04, -05, -17
Yorba Linda, California 92887



PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

Project Number: 13-98945.1

Legend

N

Subject Site

Paved Road

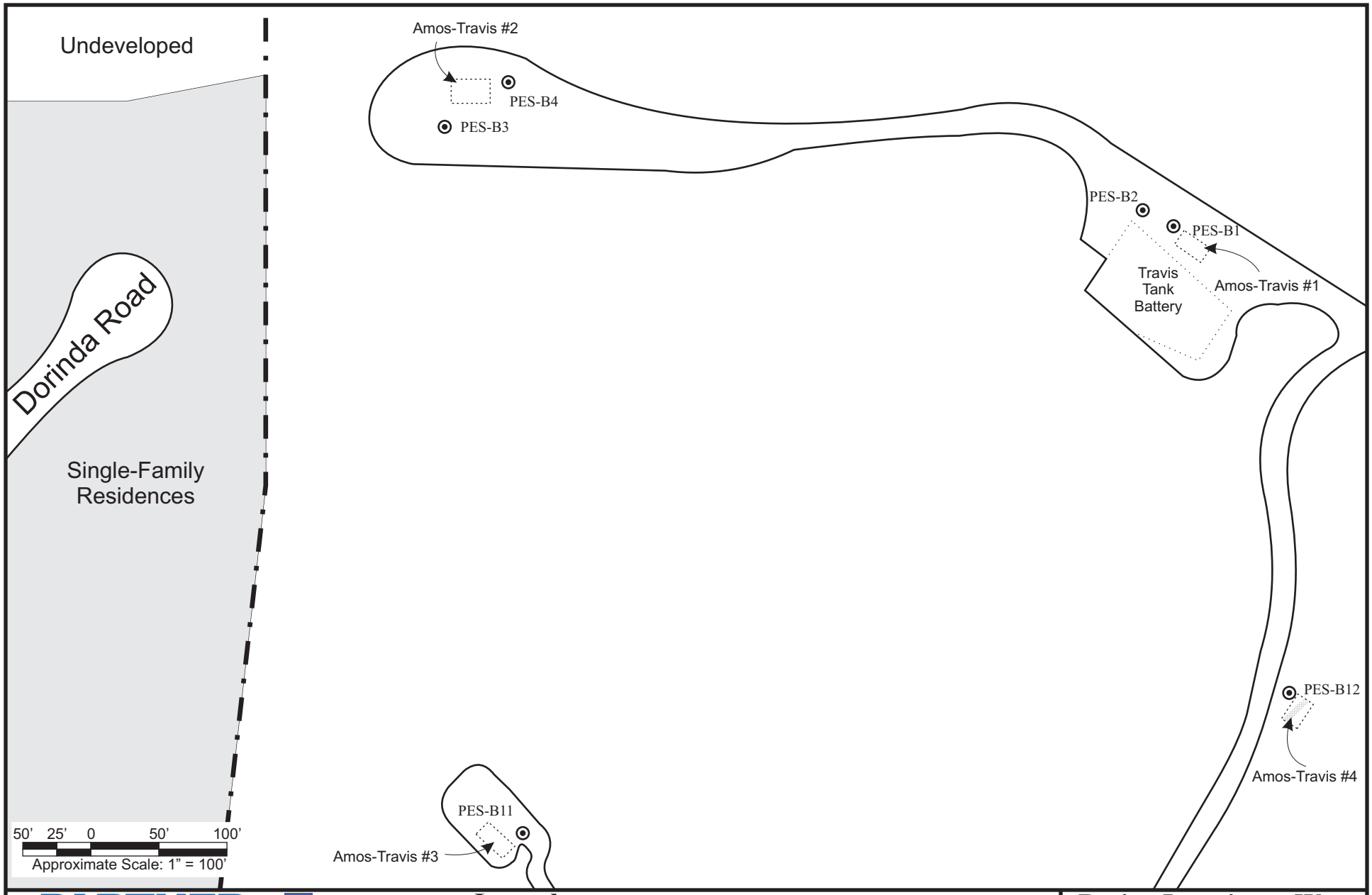
Dirt Road

Oil Field Features

Site Plan

Figure	Prepared By	Date
2.1-2	I. Penney	February 2013

APNs 351-031-04, -05, & -17
Yorba Linda, California 92887



Legend

N

Subject Site

Dirt Road

Boring Location

Oil Well Location

Former Oil Well Location

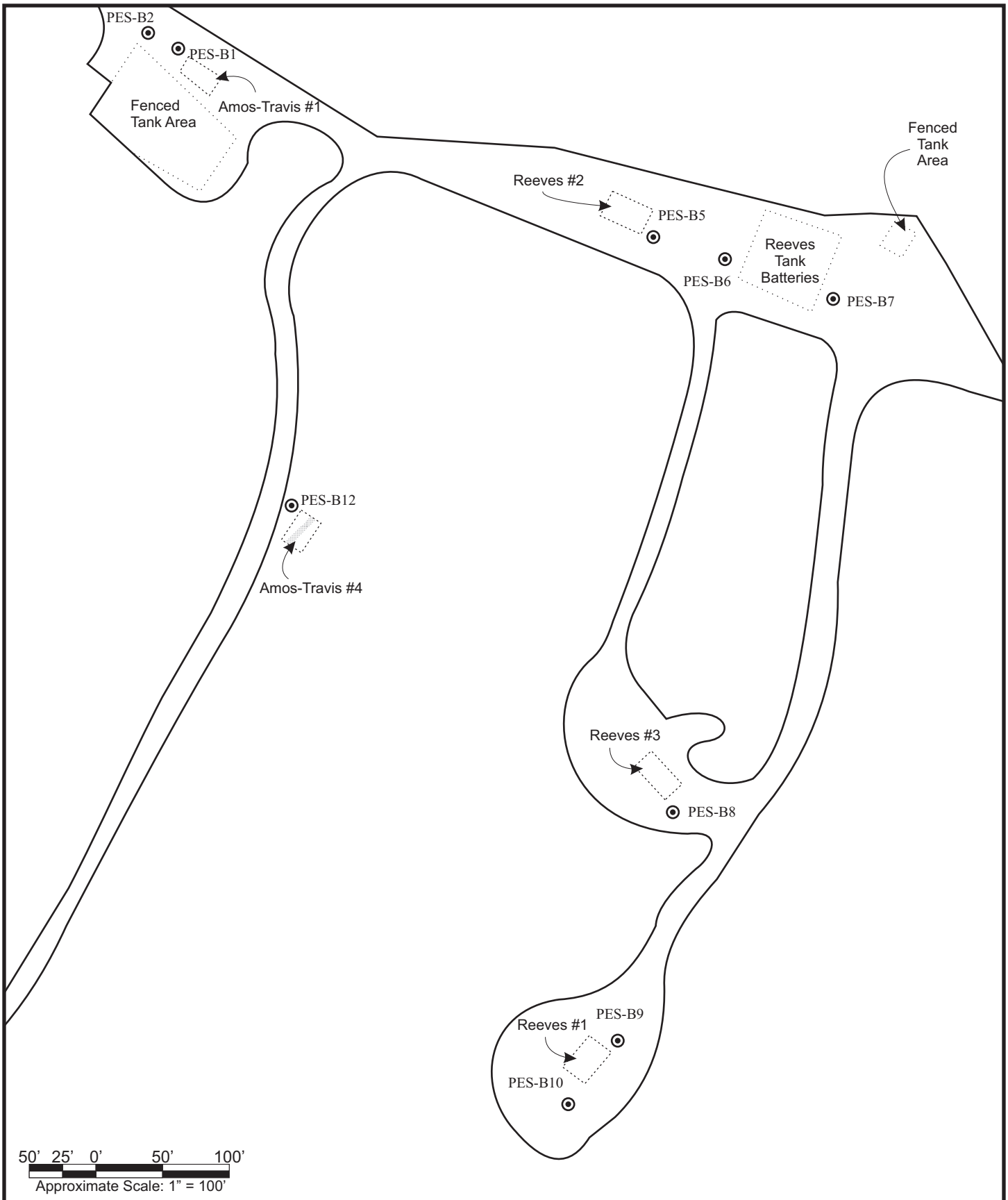
PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

Project Number: 13-98945.1

Boring Locations - West

Figure	Prepared By	Date
2.2-1	I. Penney	February 2013

APNs 351-031-04, -05, & -17
Yorba Linda, California 92887



PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

Project Number: 13-98945.1

Legend

- Subject Site
- Oil Well Location
- Former Oil Well Location
- Dirt Road
- Boring Location

Boring Locations - East

Figure	Prepared By	Date
2.2-2	I. Penney	February 2013

APNs 351-031-04, -05, & -17
Yorba Linda, California 92887

Appendix A:

General Decision Process for Handling Disturbed Soil

Legend:
-OVA = organic vapor analyzer
-ppm = parts per million
-VOC = volatile organic compound
-AQMD = South Coast Air Quality Management District
-GC = general contractor

Start

Monitor the soil for impacts. **(Section 5.9)**

Does the disturbed soil exhibit impacts? **(Section 5.9)**

No

Suitable for unrestricted use. GC responsible for soil handling, reuse, export, management. **(Sections 5.9)**

Yes

Monitor the soil with the OVA. **(Section 5.10)**

What is the OVA reading?

>50 ppm

Is the OVA reading ≥1,000 ppm?

Yes

Soil cannot be stockpiled on-site. **(Section 5.13.2)**

<50 ppm

No

Stockpile on-site and collect/analyze samples. **(Sections 5.13.3/5.16)**

Stockpile on-site and collect/analyze samples for waste characterization. **(Sections 5.13.1/5.16)**

Have samples been collected/ analyzed for waste characterization? **(Section 5.16)**

No

Cease excavation and collect/analyze samples for waste characterization. **(Section 5.16)**

Yes

Will the soil remain on-site?

Yes

No

Are trucks available for immediate loading and exporting? **(Section 5.13.2)**

No

Cease excavation in the area until direct loading of soil onto trucks is possible.

Yes

Soil must be exported off-site for disposal. **(Section 5.11)**

What is the soil designation? **(Section 5.17)**

No

Non-Hazardous

Hazardous

Rule 1166 VOC-Contaminated

What is the soil designation? **(Section 5.17)**

Does the soil meet reuse criteria? **(Section 5.11)**

Yes

Reuse soil on-site as backfill. **(Section 5.11)**

Transport to non-hazardous soil receiving facility. **(Section 5.17.3)**

Transport to hazardous waste receiving facility. **(Section 5.17.4)**

Transport to AQMD-approved receiving facility. **(Section 5.17.1)**

End

General Decision Process for Handling Disturbed Soil

Appendix B:

Sample AQMD Rule 1166 Various Locations Mitigation Plan

SAMPLE--SAMPLE--SAMPLE--SAMPLE--SAMPLE--SAMPLE---

South Coast Air Quality Management District
Sample Rule 1166 Various Locations Mitigation Plan

Plan Issue Date: Date

Company ID: XXXXXX

Mitigation Plan: **XXXXXX**

Applicant: Name
Address
City, CA, Zip Code

Attention: Contact Name
Phone: (XXX) XXX-XXXX **Fax:** (XXX) XXX-XXXX

VARIOUS LOCATIONS
Rule 1166 Contaminated Soil Mitigation Plan

Reference is made to your application (A/N XXXXXX)-for the excavation and handling of VOC-contaminated soil at **various locations** within the South Coast Air Quality Management District.

In accordance with Rule 1166 (c), this approved plan is required prior to commencing excavation of any underground storage tank or transfer piping which has previously been used to store or transfer volatile organic compounds (VOC) or during the excavation, handling, or storage of VOC-contaminated soils.

The rights and privileges granted through the issuance of this plan are restricted exclusively to the plan holder to whom it was issued, and are non-transferable, even with the written or expressed consent of the plan holder listed above.

A VARIOUS LOCATIONS PLAN can be used at a site to excavate and remove a maximum of 2000 cubic yards of VOC contaminated soil at the site. Any treatment or additional excavation of VOC contaminated soil at the site will require the issuance of a SITE SPECIFIC plan by the AQMD. Multiple use of VARIOUS LOCATIONS PLANS to excavate over 2000 cubic yards of contaminated soil for the same site is prohibited per Rule 1166.

This excavation and mitigation plan has been approved under the provisions of Rule 1166 of the Rules and Regulations of the AQMD and is subject to the following conditions.

THIS PLAN WILL EXPIRE ONE YEAR FROM THE ISSUE DATE AND THERE IS NO AUTOMATIC RENEWAL PROCESS.

TO MAINTAIN A CURRENT PLAN AFTER THE EXPIRATION DATE, FILE AN APPLICATION FOR A NEW PLAN AT LEAST ONE MONTH PRIOR TO ITS EXPIRATION. CALL (909) 396-2682 OR E-MAIL rvishwanath@aqmd.gov FOR AN APPLICATION PACKAGE AND CURRENT FEE INFORMATION.

PLAN CONDITIONS

SECTION I – GENERAL REQUIREMENTS

1. A SIGNED COPY OF THIS PLAN SHALL BE PRESENT AT EACH EXCAVATION SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.

2. THIS PLAN IS NOT VALID FOR THE EXCAVATION OF VOC CONTAMINATED SOILS AT LANDFILLS OR SITES USED FOR DISPOSAL OF REFUSE OR OTHER TYPES OF WASTE.

3. THIS PLAN DOES NOT ALLOW THE TREATMENT OF VOC-CONTAMINATED SOIL BY THERMAL, CHEMICAL, OR MECHANICAL PROCESSES. ANY OF THE ABOVE TREATMENT PROCESSES REQUIRES A PERMIT TO OPERATE FROM THE AQMD AND A SITE-SPECIFIC RULE 1166 PLAN.

4. THIS PLAN DOES NOT ALLOW BACK-FILLING OF TREATED VOC CONTAMINATED SOIL. BACK-FILLING OF TREATED VOC CONTAMINATED SOIL MAY BE ALLOWED UNDER A SITE SPECIFIC RULE 1166 PLAN.

5. THE TOTAL QUANTITY OF VOC CONTAMINATED SOIL EXCAVATED AND HANDLED AT EACH SITE SHALL NOT EXCEED **2000 CUBIC YARDS**. THIS TOTAL INCLUDES ANY VOC CONTAMINATED SOILS EXCAVATED FROM THIS LOCATION UNDER A VARIOUS LOCATION PLAN WITHIN THE LAST TWELVE (12) CALENDAR MONTHS. EXCAVATIONS INVOLVING QUANTITIES IN EXCESS OF 2000 CUBIC YARDS OF VOC CONTAMINATED SOIL REQUIRES THE APPLICATION SUBMITTAL FOR A SITE SPECIFIC RULE 1166 EXCAVATION PLAN.

6. THE AQMD SHALL BE IMMEDIATELY NOTIFIED OF ANY COMPLAINTS RECEIVED AS A RESULT OF ACTIVITIES CONDUCTED UNDER THIS PLAN. SUCH NOTIFICATION SHALL INCLUDE THE NATURE OF THE COMPLAINT, NUMBER OF COMPLAINANTS AND THE ACTION TAKEN BY THE PLAN HOLDER TO MITIGATE THE SOURCE OF THE COMPLAINT.

7. DURING EACH STEP OF THE PROCESS UP TO AND INCLUDING THE REMOVAL AND DISPOSAL PROCESS, ALL PRECAUTIONS AND MEASURES SHALL BE TAKEN TO MINIMIZE THE RELEASE OF VOC, ODOR AND DUST. THIS INCLUDES BUT IS NOT LIMITED TO: THE USE OF ADDITIONAL PLASTIC SHEETING ON STOCKPILES, USE OF SUPPRESSANTS ON EXPOSED SOIL SURFACES & WORK AREAS AND MAINTAINING PAVED PUBLIC STREETS FREE OF SOIL DEPOSITS.

8. FOR THE PURPOSES OF RULE 1166 AND THIS PLAN, SOIL MEASURED PURSUANT TO RULE 1166 AS VOC CONTAMINATED SOIL, IS CONSIDERED AS VOC CONTAMINATED SOIL FROM THE TIME OF MEASUREMENT ONWARD, UNTIL THE SOIL IS TREATED PURSUANT TO AN APPROVED AQMD TREATMENT PROCESS.

SECTION II – PRIOR TO EXCAVATION

9. AT LEAST **24 HOURS** PRIOR TO COMMENCING EXCAVATION OR GRADING OF SOIL AT THE SITE, THE EXECUTIVE OFFICER OR DESIGNEE SHALL BE NOTIFIED OF THE EXCAVATION BY FAX USING A FORM APPROVED BY THE EXECUTIVE OFFICER WHICH IS FULLY COMPLETED AND INCLUDING, THE NAME OF THE COMPANY PERFORMING THE EXCAVATION, AND THE APPLICATION NUMBER LISTED ON THIS MITIGATION PLAN. THE NOTIFICATION SHALL BE MADE BY FAXING THE NOTIFICATION FORM AT (909) 396-3342, DURING NORMAL BUSINESS HOURS. FAX NOTIFICATIONS WILL RECEIVE A REFERENCE NUMBER BY RETURN FAX OR CAN BE OBTAINED FROM THE AQMD BY PHONE. THE REFERENCE NUMBER SHALL BE RETAINED AS PROOF OF COMPLIANCE WITH THIS REQUIREMENT.

   REFERENCE NO:_____ NOTIFICATION DATE:_____

10. COMPLETE VERIFICATION INFORMATION IN CONDITION NO. 30 AND OBTAIN REQUIRED SIGNATURES, PRIOR TO COMMENCING EXCAVATION.

SECTION III – MONITORING

11. DURING THE EXCAVATION PROCESS, AN ORGANIC VAPOR ANALYZER (OVA) SHALL BE ON SITE AT ALL TIMES. THE OVA SHALL BE MAINTAINED IN GOOD WORKING ORDER AT ALL TIMES. AND SHALL BE CALIBRATED BY THE MANUFACTURER AT LEAST ONCE EVERY THREE MONTHS. THE CALIBRATION OF THE OVA SHALL BE VERIFIED USING CERTIFIED CALIBRATION GAS AT THE BEGINNING OF EACH WORKING DAY WITH THE PROCEDURES SPECIFIED BY THE MANUFACTURER. IF A CALIBRATION GAS OTHER THAN HEXANE IS USED, EACH MEASURED READING SHALL BE CORRELATED TO AND EXPRESSED AS HEXANE, USING EQUIVALENCY FACTORS PROVIDED BY THE MANUFACTURER.

12. ALL MONITORING SHALL BE CONDUCTED AT A DISTANCE NO MORE THAN 3 INCHES ABOVE THE SOIL SURFACE USING AN OVA DESCRIBED IN CONDITION NO. 11 ABOVE. MONITORING SHALL BE CONDUCTED AT A MINIMUM FREQUENCY OF ONE READING FOR EVERY TWO CUBIC YARDS OF SOIL EXCAVATED, NOT TO EXCEED FIFTEEN MINUTES BETWEEN READINGS. ALL READINGS SHALL BE TAKEN NO LATER THAN THREE (3) MINUTES AFTER EACH LOAD OF SOIL IS EXCAVATED.

13. ALL MONITORING SHALL BE CONDUCTED BY TRAINED PERSONNEL WHO ARE PROFICIENT IN THE USE OF THE HYDROCARBON MONITOR SELECTED FOR USE AT THIS SITE.

14. WRITTEN RECORDS OF OVA MONITORING AND CALIBRATIONS REQUIRED ABOVE SHALL BE KEPT IN A FORMAT APPROVED BY THE AQMD. THE APPROVED FORMAT IS INCLUDED ON PAGE 7 OF THIS PLAN. THE CERTIFICATION ON ALL RECORDS SHALL BE SIGNED AND DATED ON THE DAY THE MEASUREMENTS ARE OBSERVED.

15. UPON DETECTION OF VOC CONTAMINATED SOIL (READINGS 50 PPM OR GREATER), THE EXECUTIVE OFFICER OR DESIGNEE SHALL BE NOTIFIED **WITHIN 24 HOURS** OF THE FIRST DETECTION OF VOC CONTAMINATION. THE NOTIFICATION SHALL BE MADE BY FAXING THE NOTIFICATION FORM TO (909) 396-3342. A REFERENCE NUMBER WILL BE FAXED BACK OR WILL BE ISSUED WHEN THE FAX NOTIFICATION IS RECEIVED. ALL FAX NOTIFICATIONS SHALL BE FOLLOWED BY MAILING THE NOTIFICATION FORM TO THE DISTRICT POSTMARKED **WITHIN 48 HOURS**. THE REFERENCE NUMBER WILL BE RETAINED AS PROOF OF COMPLIANCE WITH THIS REQUIREMENT.

REFERENCE NO:_____NOTIFICATION DATE:_____

_____

SECTION IV – HANDLING AND STORAGE

16. ALL VOC-CONTAMINATED SOIL BELOW 1000 PPM SHALL BE STOCKPILED, COVERED WITH PLASTIC SHEETING AND STORED SEPARATELY FROM NON-VOC-CONTAMINATED SOIL, OR IMMEDIATELY TRANSPORTED TO A TREATMENT FACILITY.

17. A STOCKPILE SHALL NOT CONTAIN MORE THAN 400 CUBIC YARDS OF SOIL.

18. IF THE OVA MEASUREMENT IS GREATER THAN 50 PPMV BUT LESS THAN 1000 PPMV

    A) THE AFFECTED WORK AREA AND LOAD OF SOIL SHALL BE SPRAYED WITH WATER AND/OR APPROVED VAPOR SUPPRESSANT.
    B) CONTAMINATED SOIL IN STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING WHICH OVERLAP A MINIMUM OF TWENTY-FOUR INCHES AND ARE SECURED SO THAT NO PORTION OF THE CONTAMINATED SOIL IS EXPOSED TO THE ATMOSPHERE. IN THE COURSE OF HANDLING THE STOCKPILE, ONLY THE WORKING FACE OF THE STOCKPILE MAY BE UNCOVERED.

19. IF THE OVA MEASUREMENT EQUALS OR IS GREATER THAN 1000 PPM, STOP EXCAVATION TO NOTIFY THE DISTRICT IMMEDIATELY OR WITHIN ONE HOUR OF DETECTION AND,

    A) THE AFFECTED SOIL AND WORKING AREA SHALL BE IMMEDIATELY SPRAYED WITH WATER OR AN APPROVED VAPOR SUPPRESSANT, AND EITHER:

B) THE CONTAMINATED SOIL EXCAVATED SHALL BE IMMEDIATELY PLACED IN AQMD APPROVED SEALED CONTAINERS, OR,

C) DIRECTLY LOADED IN TRUCKS, SPRAYED WITH ADDITIONAL WATER OR APPROVED VAPOR SUPRESSANT, COVERED, AND TRANSPORTED IMMEDIATELY OFF SITE AS PER CONDITION #25 OF THIS PLAN, OR,

D) OTHER ALTERNATIVE STORAGE METHODS WITH PRIOR WRITTEN APPROVAL FROM THE AQMD.

20. DURING EXCAVATION, THE ONLY EXPOSED VOC CONTAMINATED SOIL SHALL BE RESTRICTED TO THE IMMEDIATE WORKING AREA OF THE SITE OR STOCKPILE. ALL OTHER PORTIONS OF THE STOCKPILE SHALL BE COVERED WITH PLASTIC SHEETING, WITH SEAMS, WHICH OVERLAP A MINIMUM OF TWENTY-FOUR INCHES AND ARE SECURED WITH DUCT TAPE. ANY EXPOSED VOC-CONTAMINATED SOIL SURFACES (WORK FACE) SHALL BE KEPT MOIST WITH WATER OR OTHER APPROVED SUPPRESSANTS AT ALL TIMES, AND SHALL BE RE-COVERED DURING PERIODS OF INACTIVITY LONGER THAN ONE (1) HOUR. AT THE END OF EACH WORKING DAY, ALL STOCKPILES SHALL BE COMPLETELY COVERED AND SECURELY ANCHORED TO PREVENT ANY EXPOSURE OF SOIL TO THE ATMOSPHERE.

21. ONCE COVERED WITH PLASTIC SHEETING, STOCKPILES SHALL REMAIN UNDISTURBED UNTIL REMOVED FROM SITE.

22. DAILY INSPECTIONS SHALL BE CONDUCTED OF ALL COVERED VOC-CONTAMINATED STOCKPILES TO ENSURE THE INTEGRITY OF THE PLASTIC COVER. SUCH INSPECTIONS SHALL INCLUDE A VISUAL INSPECTION OF ALL SEAMS AND PLASTIC COVER SURFACES. ANY HOLES, TEARS OR ANY OTHER POTENTIAL SOURCES OF FUGITIVE VOC EMISSIONS SHALL BE REPAIRED IMMEDIATELY. DAILY RECORDS SHALL BE MAINTAINED TO ENSURE COMPLIANCE WITH THIS CONDITION.

23. VOC CONTAMINATED SOIL SHALL NOT BE SPREAD ON-SITE OR OFF-SITE. THIS INCLUDES ANY UNNECESSARY MOVEMENT OR AGITATION OF SOIL THAT MAY CAUSE THE UNCONTROLLED EVAPORATION OF VOC'S INTO THE ATMOSPHERE, INCLUDING THE RESHAPING OR RELOCATION OF STOCKPILES.

SECTION V – SOIL REMOVAL AND DISPOSAL

24. ALL EXCAVATED VOC-CONTAMINATED SOIL SHALL BE REMOVED FROM THE SITE WITHIN **THIRTY (30) DAYS** OF ITS EXCAVATION.

25. ALL VOC-CONTAMINATED SOIL REMOVED FROM THE SITE SHALL BE TRANSPORTED TO AN APPROVED TREATMENT/DISPOSAL FACILITY. IF THE RECEIVING FACILITY IS LOCATED WITHIN THE AQMD'S JURISDICTION, IT SHALL BE THE RESPONSIBILITY OF THE PLAN HOLDER TO ENSURE THAT THE RECEIVING FACILITY POSSESSES THE REQUIRED AQMD PERMITS AND PLANS.

SECTION VI - RECORDS AND REPORTING

26. A WRITTEN REPORT SHALL BE PROVIDED TO THE AQMD WITHIN 30 DAYS OF INITIAL DETECTION OF CONTAMINATED SOIL, WHICH INCLUDES THE FOLLOWING INFORMATION.

A) THE STATUS OF THE EXCAVATION PIT, AND ANY VOC CONTAMINATED SOIL REMAINING ON SITE.

B) A BRIEF SUMMARY INDICATING IF ADDITIONAL CLEAN UP EFFORTS ARE NECESSARY, THE ADDITIONAL QUANTITY OF VOC CONTAMINATED SOILS TO BE EXCAVATED AND THE PROJECTED SCHEDULE OF THE EXCAVATION.

27. RECORDS OF DISPOSAL SHALL BE MAINTAINED FOR ALL VOC-CONTAMINATED SOIL REMOVED FROM THIS SITE. SUCH RECORDS SHALL BE CLEARLY LABELED "**SCAQMD RULE 1166-VOC CONTAMINATED SOIL"** AND SHALL INCLUDE THE IDENTIFICATION AND THE LOCATION OF, 1) THE GENERATOR, 2) TRANSPORTER AND 3) RECEIVING FACILITY. IN ADDITION, SUCH RECORDS SHALL BE SIGNED AND DATED BY EACH OF THE ABOVE PARTIES INDICATING RECEIPT OR RELINQUISHMENT OF THE VOC-CONTAMINATED SOIL AT THE TIME CUSTODY IS TRANSFERRED.

28. RECORDS OF DISPOSAL OF VOC-CONTAMINATED SOIL SHALL BE MAINTAINED ON SITE DURING THE EXCAVATION AND LATER MAINTAINED FOR A PERIOD OF TWO (2) YEARS. THE RECORDS SHALL BE MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.

29. WITHIN **THIRTY (30) DAYS** AFTER THE EXCAVATION AT THE SITE IS COMPLETED, THE WRITTEN RECORDS UNDER CONDITIONS NO. 14, 22, AND 27 SHALL BE SUBMITTED TO THE AQMD AT THE FOLLOWING ADDRESS.

SOUTH COAST AIR QUALITY MGMT DISTRICT
ENGINEERING & COMPLIANCE DIVISION
TOXICS & WASTE MANAGEMENT UNIT
(RULE 1166 COMPLIANCE)
21865 E. COPLEY DR.
DIAMOND BAR, CA. 91765-4182

SECTION VII – VERIFICATION AND SIGNATURE

30. THIS PLAN IS NOT VALID UNTILL ALL PARTIES HAVE REVIEWED AND SIGNED THE VERIFICATION STATEMENT BELOW.

Site Name		Type of Business
Address	City	Zip
Responsible Party (Owner/Operator)		Phone
Address	City	Zip

I CERTIFY THAT I HAVE REVIEWED AND UNDERSTAND THE CONDITIONS CONTAINED WITHIN THIS PLAN. IN SIGNING BELOW, I ACKNOWLEDGE THAT UNDER THE PROVISIONS OF RULE 1166, I CAN BE HELD RESPONSIBILE FOR THE REQUIREMENTS SET FORTH IN THIS PLAN.

Responsible Party	Responsible Party Signature	Date Signed
General Contractor	General Contractor Signature	Date Signed
Excavation Contractor	Excavation Contractor Signature	Date Signed
Environmental Consultant	Environmental Consultant Signature	Date Signed

DEFINITIONS

Excavation	Is the process of digging out and removing materials including any material necessary to that process such as the digging out and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil.

Organic Vapor Analyzer (OVA)	For the purposes of this plan, an OVA is an hydrocarbon monitor utilizing flame ionization, photo ionization or other analytical methods complying with 40 CFR PART 60 APPENDIX A, EPA METHOD 21 SECTION 3, "DETERMINATION OF VOLATILE ORGANIC COMPOUND LEAKS, MONITORING INSTRUMENT SPECIFICATIONS. The monitor shall be capable of being calibrated using hexane at a range of 0 parts per million by volume (PPMV) to 50 PPMV, and at a detection range of at least 30 PPMV to 1100 PPMV
Responsible Party	For the purposes of this plan, Responsible Party is the party financially responsible for initiating the excavation. This may include the property owner or the tank operator. This excludes contractors working for the property owner or operator, and any other party that lacks the direct authority to immediately treat all VOC contaminated soils generated at the excavation site.
VOC Contaminated Soil	Is soil that registers a concentration of 50 PPM or greater of volatile organic compounds as measured before suppression materials have been applied and at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane.
Volatile Organic Compound (VOC)	Is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. Exempt compounds areas defined in Rule 102 – Definitions of Terms.

Once issued, this plan is subject to further review by the AQMD and may be revoked if excavation activities are found in violation of plan conditions or AQMD's Rules and Regulations. Failure to comply with one or more of the conditions contained within this plan constitutes a violation of Rules 221 and 1166.

Other governmental agencies may require approval before any excavation begins. It shall be the responsibility of the applicant to obtain that approval. The South Coast Air Quality Management District shall not be responsible or liable for any losses because of measures required or taken pursuant to the requirements of this approved 1166 Contaminated Soil Mitigation Plan.

Questions regarding this plan should be directed to Ranjit Vishwanath at (909) 396-2682.

Very truly yours,

David Jones
Air Quality Analysis and Compliance Supervisor

DJ:RV:6/3/03

SAMPLE--SAMPLE--SAMPLE--SAMPLE--SAMPLE--SAMPLE---

Rule 1166 Soil Monitoring Records

Company Name	**Facility/Site Information**
Plan #:	Name:
ID #:	Address:
Reference No(s).	City: Zip:

Monitor Information	**Calibration Data**	**Monitoring Personnel**	**Excavation Summary** (Upon completion of each page)	
Brand:	Gas:	Name:	Total Cubic Yds (This page)	
Model:	Date	Company:	Total Cubic Yds (To date)	
Type	By	Phone:	Removed from Site (To date)	

Time	VOC Concentration (PPMV) @ Excavated Load			Comment	Time	VOC Concentration (PPMV) @ Excavated Load			Comment
Every 15 min.	Reading	Hexane Factor	Adjusted Reading		Every 15 min.	Reading	Hexane Factor	Adjusted Reading	

I certify that the information contained in the above document is true and correct. I further certify that the above listed hydrocarbon monitor was operated in a manner consistent with the manufacturer's specifications and the conditions specified within this plan. In addition, I certify that the above readings represent the actual measurements I observed and recorded during the excavation process.

SIGNATURE:_____ DATE:_____

Fire Behavior Analysis Report
Cielo Vista

Prepared for:

Orange County Fire Authority

Planning and Development Services

Prepared By:

firesafe ::PLANNING SOLUTIONS

Revised: August 27, 2013

Table of Contents

Purpose of Report

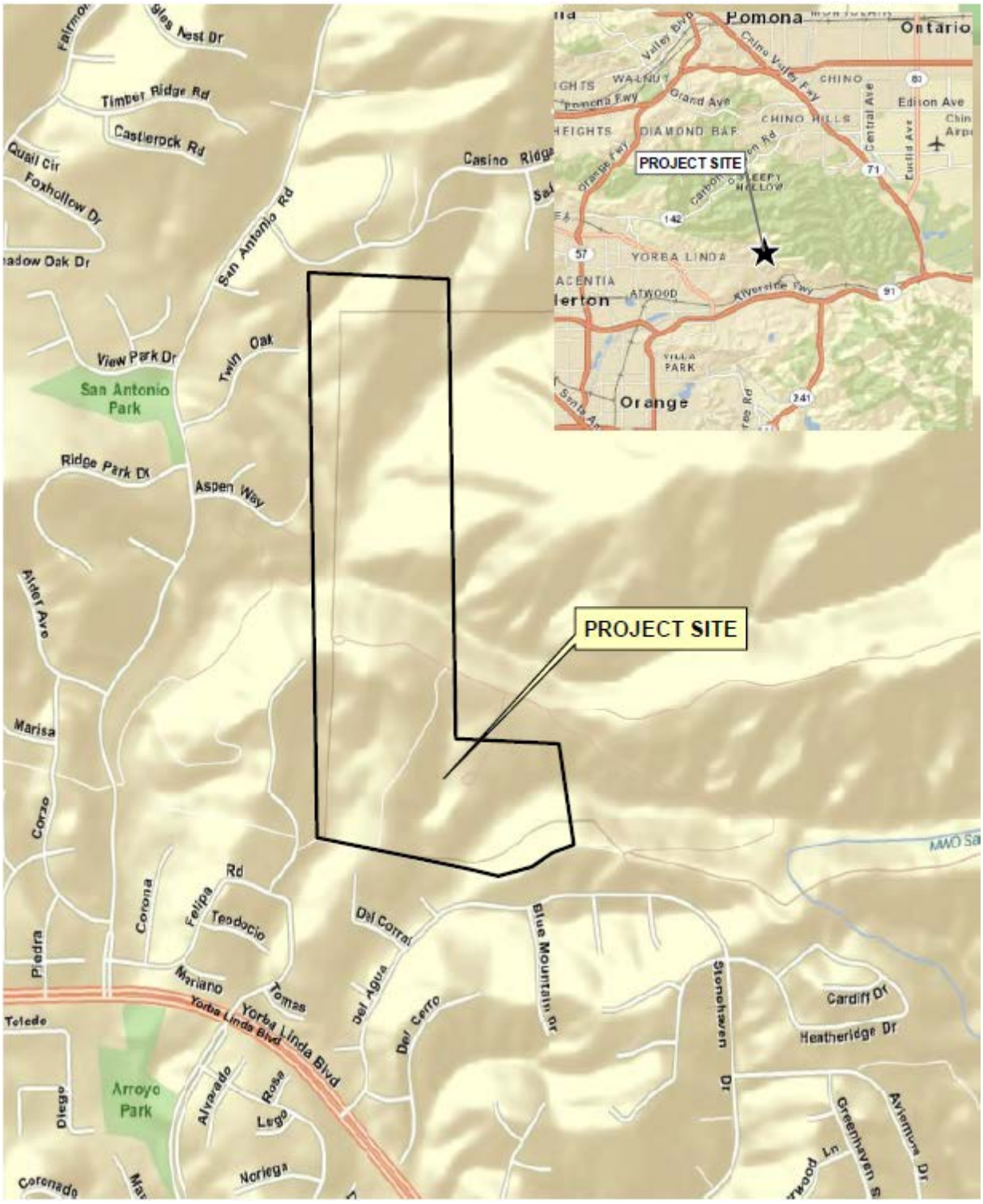
Firesafe Planning Solutions performed an assessment of the risks related wildland fire and to establish the appropriate criteria for a defensible space installation and maintenance program that will reduce the intensity of a wildfire approaching the Cielo Vista residential community. This report will provide the results of the assessment and provide objective support of the defensible space installation and maintenance program for this community that is equal to or greater than the risk which would be encountered in a worst case scenario. The study takes into consideration existing/future vegetative interface fuels, topography, and weather conditions during a fire. The report provides results of computer calculations that measured the fire intensity from a worst case scenario wildfire in both the extreme (Santa Ana- NE wind) and the predominate (Onshore – Southwest wind) conditions. The results of fire behavior calculations have been incorporated into the fire protection design built into the Cielo Vista development.

Geographic Description

The Cielo Vista site is located in a Fire Hazard Severity Zone in Orange County within the City of Yorba Linda's sphere of influence but within the unincorporated area of Orange County. The Cielo Vista Project proposes to develop a maximum of 112 single-family dwellings on approximately 84 acres located in unincorporated Orange County. The proposed dwellings and associated infrastructure would occupy approximately 47.6 acres of the project site, while approximately 36.3 acres of the site would be preserved as permanent open space. The permanent open space would consist of the site's natural habitat as well as the Project's fuel modification zones, but exclusive of private slopes, water quality basins and roadways.

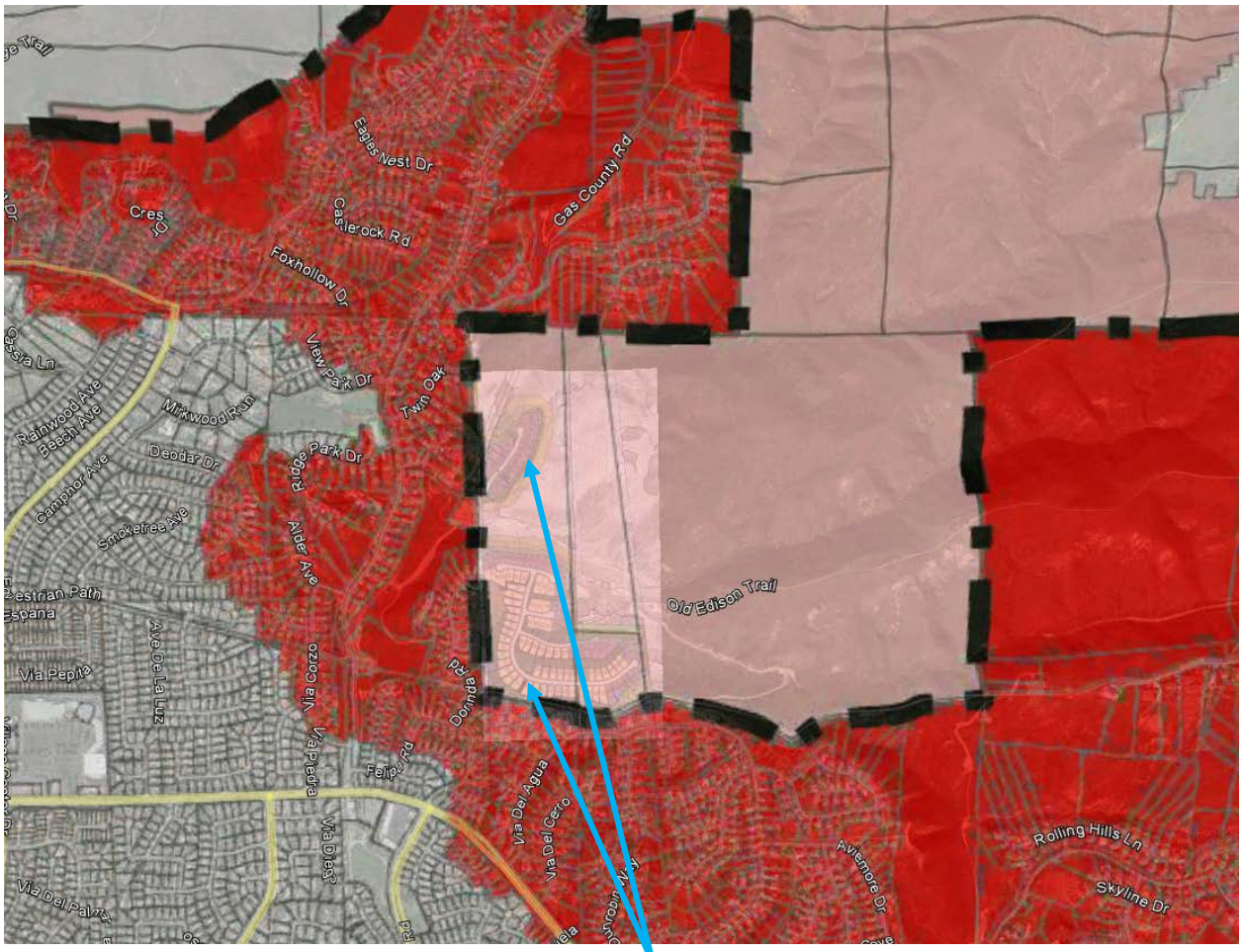
The proposed project is bordered by existing development to the west, north and south. The west and south sides of Cielo Vista has interface areas which are typical of existing development in the area. The east and north sides of the proposed community are bounded by open space areas which will create wildland interfaces at these locations. Further to the north is the existing Casino Ridge development.

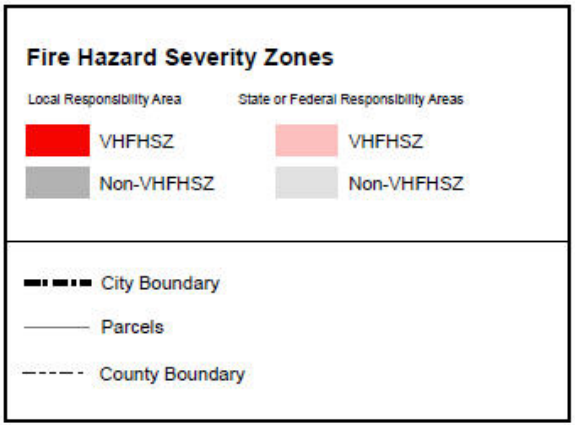
On the next page, the *Regional Location and Project Vicinity Map* from the draft EIR has been provide for reference. To the left is the project super imposed on an aerial photo of the project area.



Regional Location and Project Vicinity Map from the draft EIR

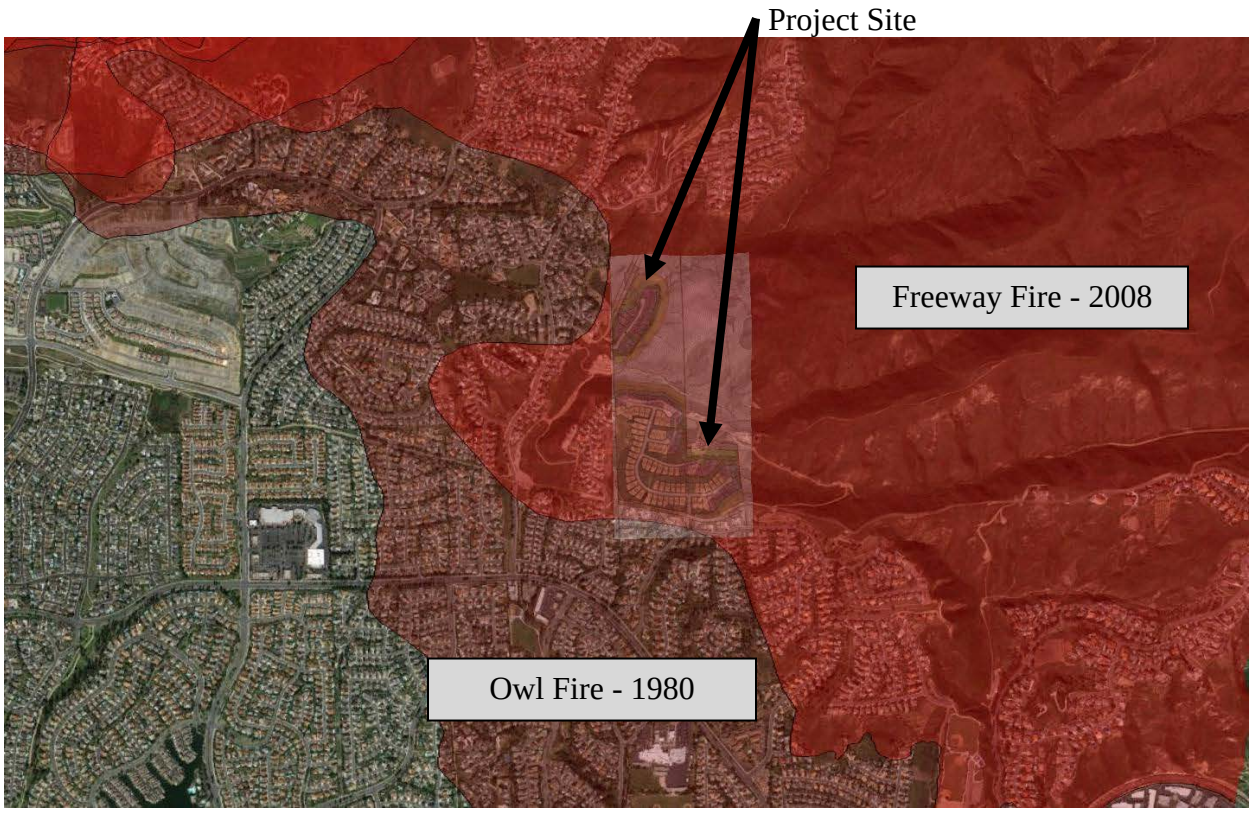
CAL FIRE Local Responsibility Area Very High Fire Hazard Severity Zone Map





As shown above, the project site is in the State Responsibility Area (SRA) as identified by CAL FIRE per state law and is completely within Very High Fire Hazard Severity Zone of that map.

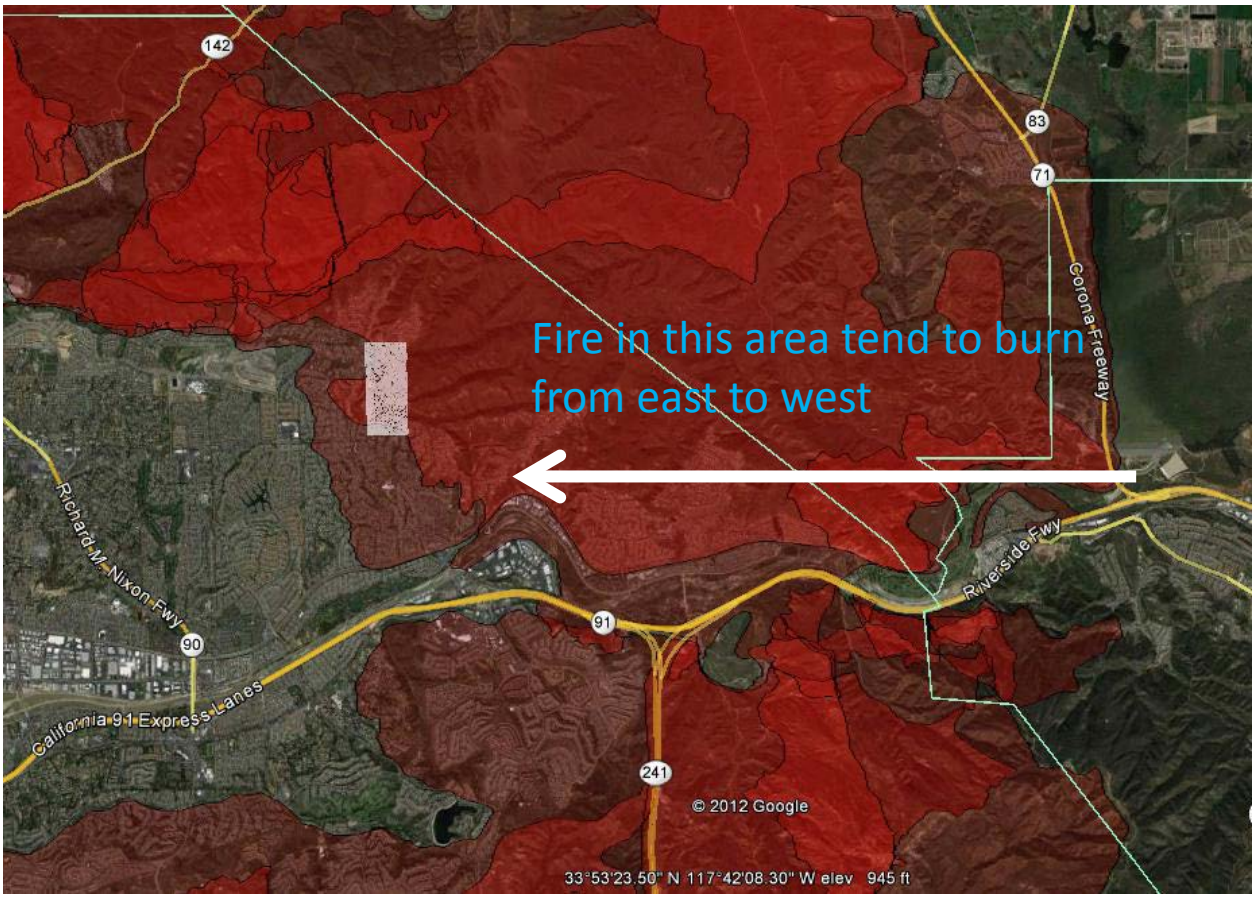
Fire History



Only two fires have occurred on the project site that are within the CalFire database. The first began on October 28, 1980; the Owl fire consumed over 18,330 acres in Orange and Riverside counties while the Freeway Complex started on November 15, 2008 and burned 30,305 acres. The Owl fire destroyed three structures, which were scheduled for demolition before the fire. The Freeway Complex destroyed 187 homes, damaged another 127 homes. Two commercial structures were destroyed and two others damaged. It should be noted that structured that survived the 1980 fire, were destroyed during the 2008 fire. According to the After Action Report from the Orange County Fire Authority, all structures damaged or destroyed were impacted by ember intrusion rather than by radiant heat or direct flame contact from the wildland. Some structures did burn through fire communicating from one burning structure to the next.

Historical fire corridors exist to the north and south of the project site. The large majority of the fires with in the area in the CalFire database have burned from the east to the west under high wind conditions and normally in the fall. The graphic on the next page shows some of these fires and the ultimate fire perimeters when they were finally contained.

Fire Travel within the Historic Fire Corridors



Fire Behavior

Firesafe Planning Solutions used a computer software program titled, "BehavePlus Fire Modeling System 5.0.4" to predict the level of wildfire intensity for a fire approaching Cileo Vista . BehavePlus, is a fire behavior prediction and fuel modeling system and is one of the most accurate methods for predicting wildland fire behavior. The BehavePlus fire behavior computer modeling system is utilized by wildland fire experts nationwide. Vegetative fuels are recognized as fuel models within the BehavePlus program. The fuel models in the computer program, are also referenced from the book titled, "Aids to Determining Fuel Models for Estimating Fire Behavior". The fuel models were designed to aid in determining fuel types and are used in calculating and estimating fire behavior. We used BehavePlus to measure the intensity of a fire moving towards this development.

The fire model describes the fire behavior only within the flaming front of the fire. The primary moving force in the fire is dead fuel less than ¼" in diameter. These are the finest fuels that carry the fire. Fuels larger than ¼" contribute to fire intensity, but not necessarily to fire spread as much as the fine fuels. The BehavePlus fire model describes a wildfire spreading through surface fuels, which are the burnable materials within 6' of the ground and contiguous to the ground.

This type of modeling will demonstrate that the proposed protection is the best fire defense system for Cielo Vista. The Modeling will show that the structures are significantly further away than the most extreme flame lengths and intensity that would be produced. Instead of estimating with the exact fuel models for calculating fire behavior, we have used worst case scenario factors and fuel models to ensure a further safety cushion in the computer fire behavior calculations and results analysis.

BehavePlus Related References:

1. Aids to Determining Fuel Models for Estimating Fire Behavior, Hal E. Anderson. General Technical Report INT-122 April 1982.United States Department of Agriculture - Forest Service, Intermountain Station, Ogden, Utah 84401.

2. BehavePlus: Fire Behavior Prediction and Fuel Modeling System - BURN Subsystem. General Technical Report INT-194. Patricia L. Andrews, United States Department of Agriculture - Forest Service, Intermountain Station, Ogden, Utah 84401

Wildland Interface Fuel Types

For the purposes of modeling in the plan, Fuel Models gs2, sh5, model 4 and SCAL18 were used:

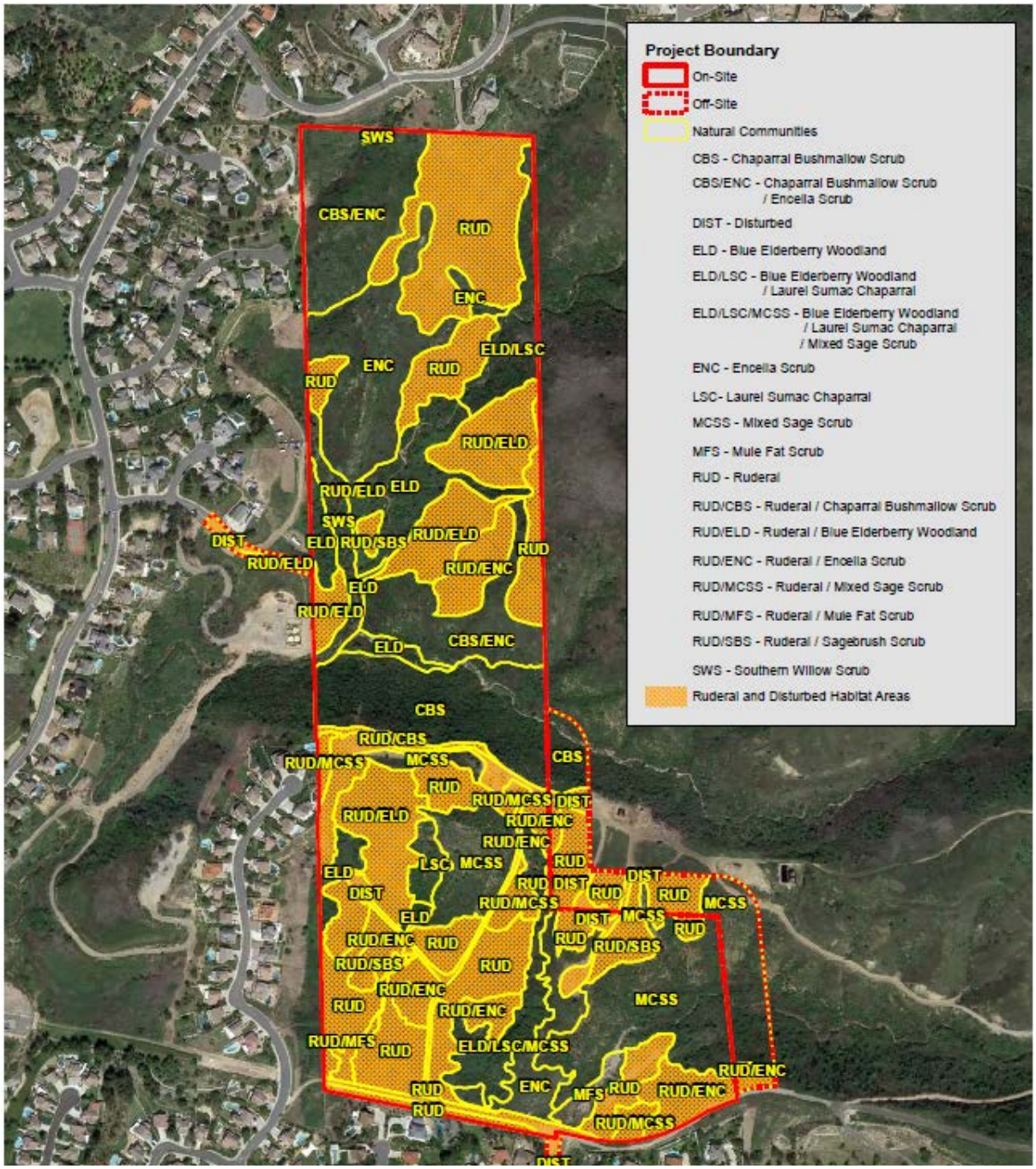
Fuel **Model GS2** is shrubs that are 1 to 3 feet high and a moderate grass load. Spread rate high; flame length moderate.

Fuel **Model SH5** is a heavy shrub load, depth 4-6 feet – representative of area of brush growth on and offsite (all aspects) where slope is not significant enough for Fuel Model 4 growth.

Fuel **Model 4** is a heavy southern mixed chaparral – representative of the north aspect natural hillside where brush is growing offsite of the project in a typical southern California wildland interface.

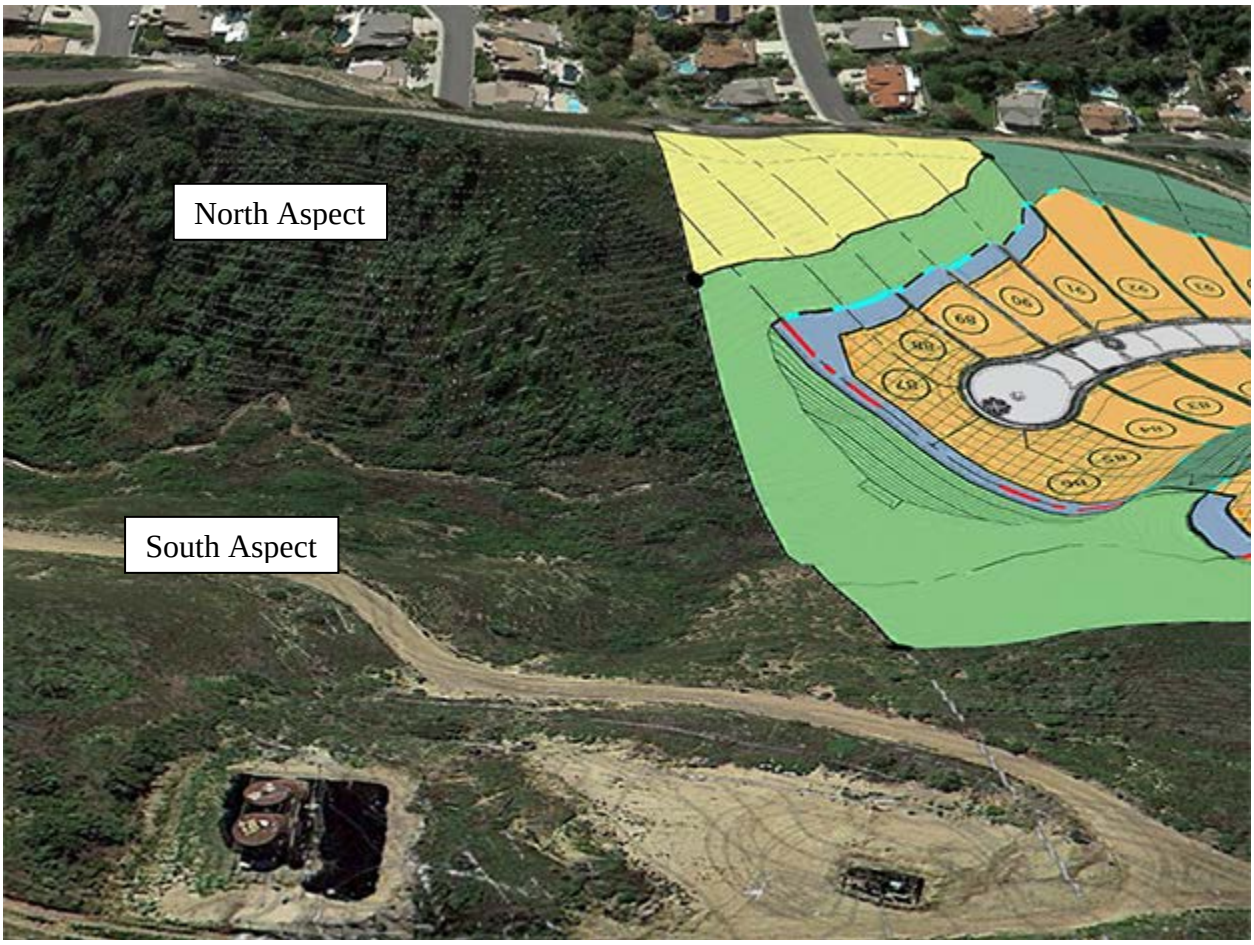
Fuel **Model SCAL18** is a southern California specific model for coastal sage scrub and northern mixed chaparral with and average fuel depth of 3 feet.

The map below shows the site overlaid on an aerial photo. Plant communities are shown in the legend. A larger copy is provided in the Appendix A



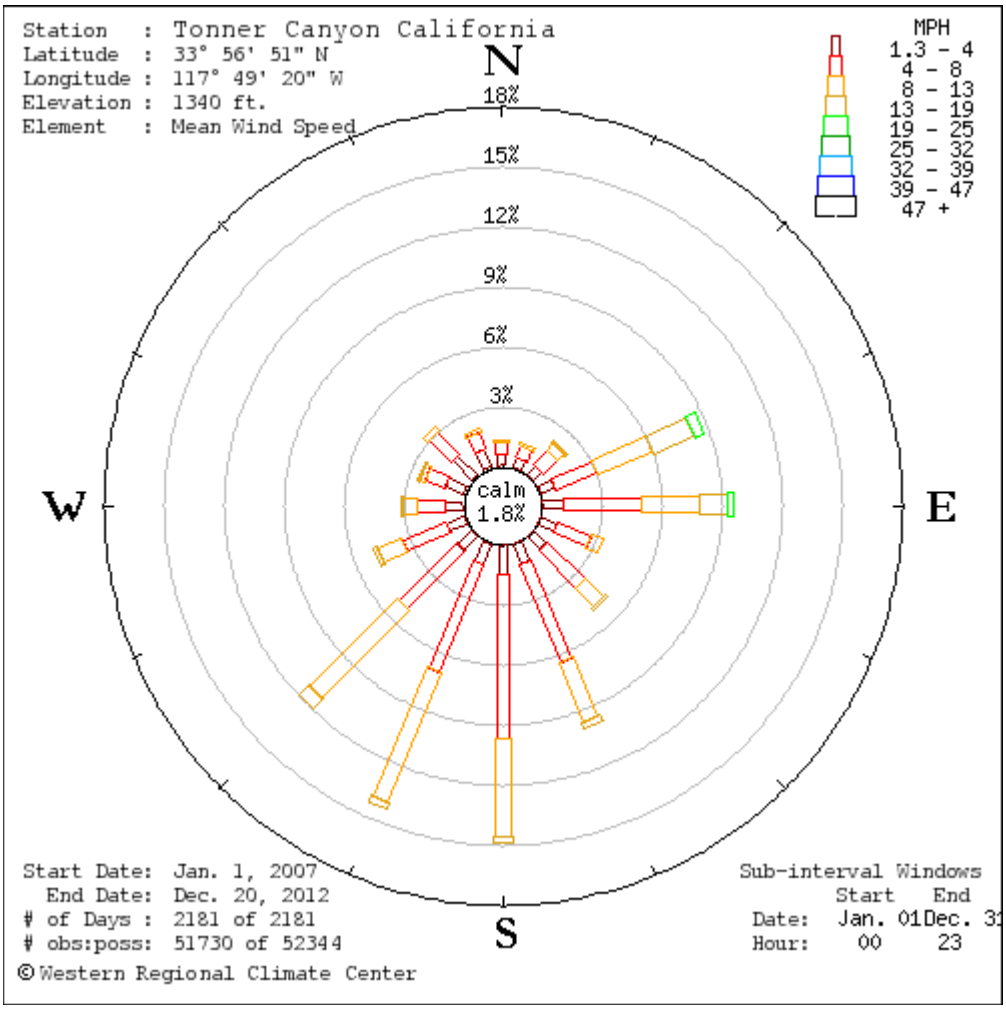
Fuels Summary

The predominate fuels in the project site are grasses, grass/scrub mixtures and chaparral. The only locations which have areas of moderate to heavy fuels are on the northern aspects of the steeper canyon. Some of these areas will be adjacent to the project site but none are below or immediately aligned to the with the wind/topograhy so as to create a condition where slope, wind and fuel are in full alignment. All of the fuels within the development area will be removed and replaced with plants from the approved palette. A series of photos are used to show the predominate vegetation on the site in Appendix B of this report. The graphic below illustrates the difference in fuel loading on the north and south aspects adjacent to the project site.



Wind Patterns and Weather Inputs

After a review of the local RAWS (Remote Access Weather Station) data, the most extreme wind patterns and speeds relating to wildfires were enter into the modeling programs (BEHAVE and Wind Ninja). All other lesser wind patterns and wind speeds normally produce less fire intensity based on a fire in wildland fuels. Several RAWS are available in the area of the project but the one closest only has two years of data so one a few miles away has been used. Since some data gaps exist, data from two sites have been used. First is Tonner Canyon, for which a wind rose has been completed and is shown the following page. This graphic clearly shows that the predominate wind is south to southwest and the strongest winds are from the east and east-northeast. The other graphic is from the RAWS in Brea which has five years of data. The summary is shown and graphed on the following page.



History for KCABREA1

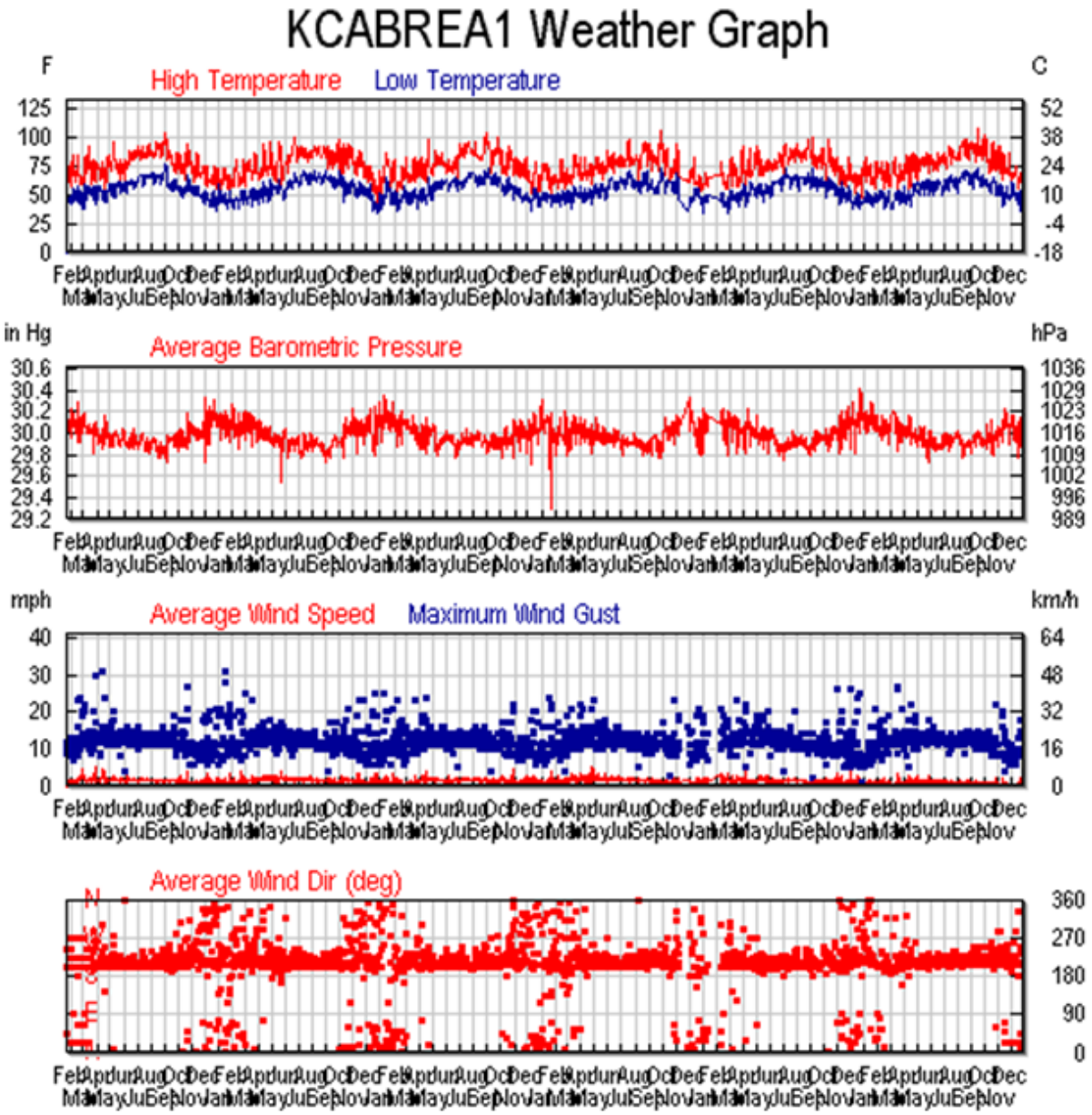
Northern Brea, Brea, CA — Current Conditions

Daily Summary for January 20, 2007 - December 21, 2012

January 20 2007 - TO - December 21 2012 Go

Daily | Weekly | Monthly | Yearly | **Custom**

	High:	Low:	Average:
Temperature:	**106.6** °F	**0.0** °F	**64.2** °F
Dew Point:	**72.8** °F	**-99.9** °F	**49.5** °F
Humidity:	100.0%	1.0%	64.9%
Wind Speed:	**14.0**mph from the North	-	**1.4**mph
Wind Gust:	**31.0**mph from the North	-	-
Wind:	-	-	SSW
Pressure:	**30.47**in	**29.09**in	-
Precipitation:	**61.60**in		



The graph above clearly shows the predominate wind direction is from the south to southwest. Storm come in from the northwest and the occasionally Santa Ana Wind event brings a east or northeast wind. The strongest wind gust measured 31 mph at this site.

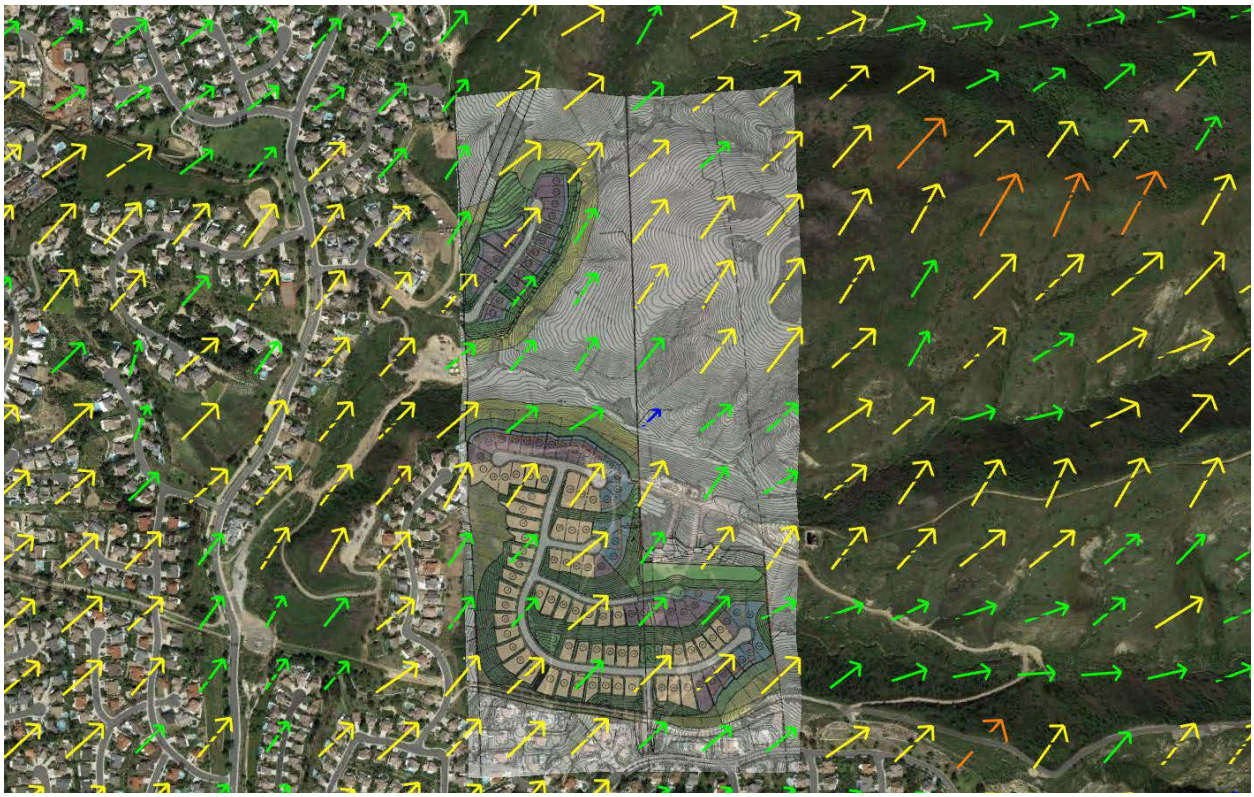
The two most extreme wind patterns/wildland fuel alignments are:

- A 50 mph northeast to easterly Santa Ana wind.
- A rare 25 mph dry south to southwest on-shore, for the normal prevailing wind.

Temperature and relative humidity max/min are also taken from the RAWS data.

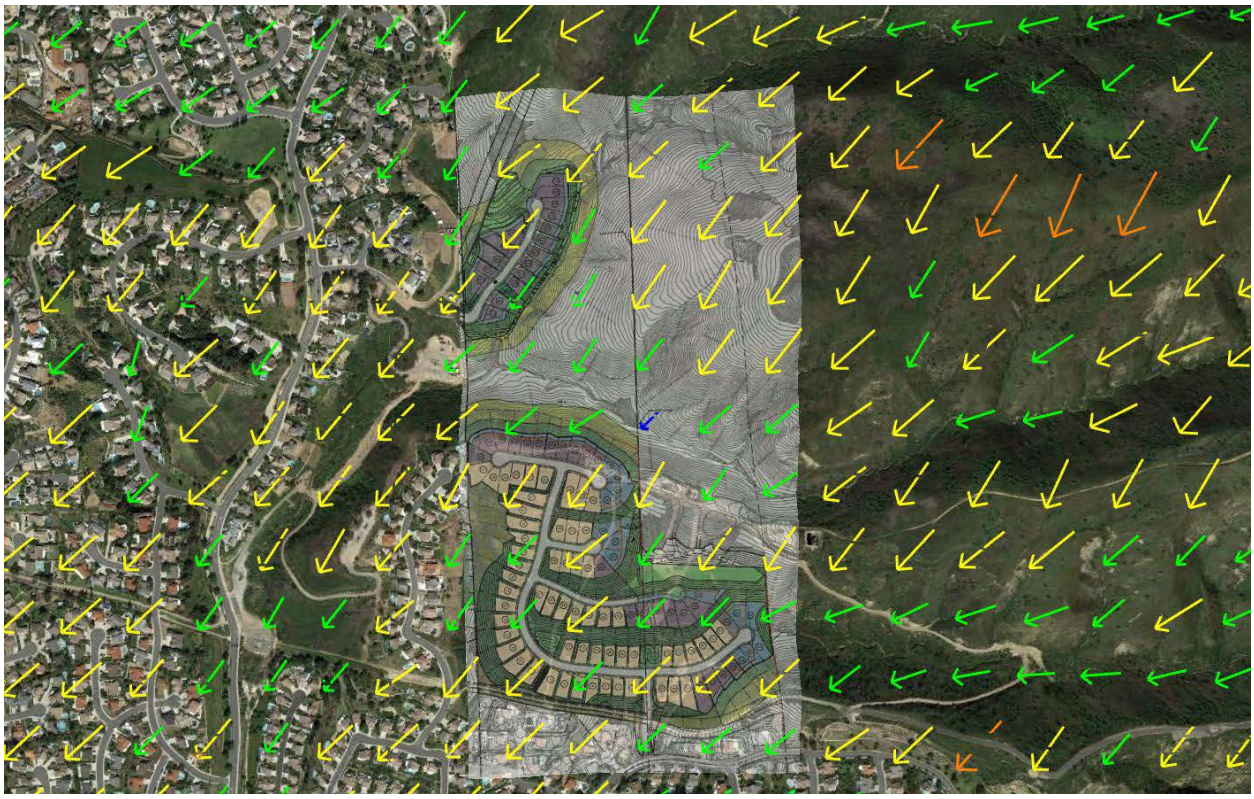
Using the Wind Ninja software, the wind and the relationship to the topography has been determined to NOT be a factor with this development. Limited wind channeling is achieved on any wind pattern at the project site. The changes in topography at the project site are simply too minor to overcome the wind in any scenario. The predominate wind (from the southwest) intersection the project boundaries from developed areas where no significant wildland fuel bed exist as shown below.

Southwest Wind

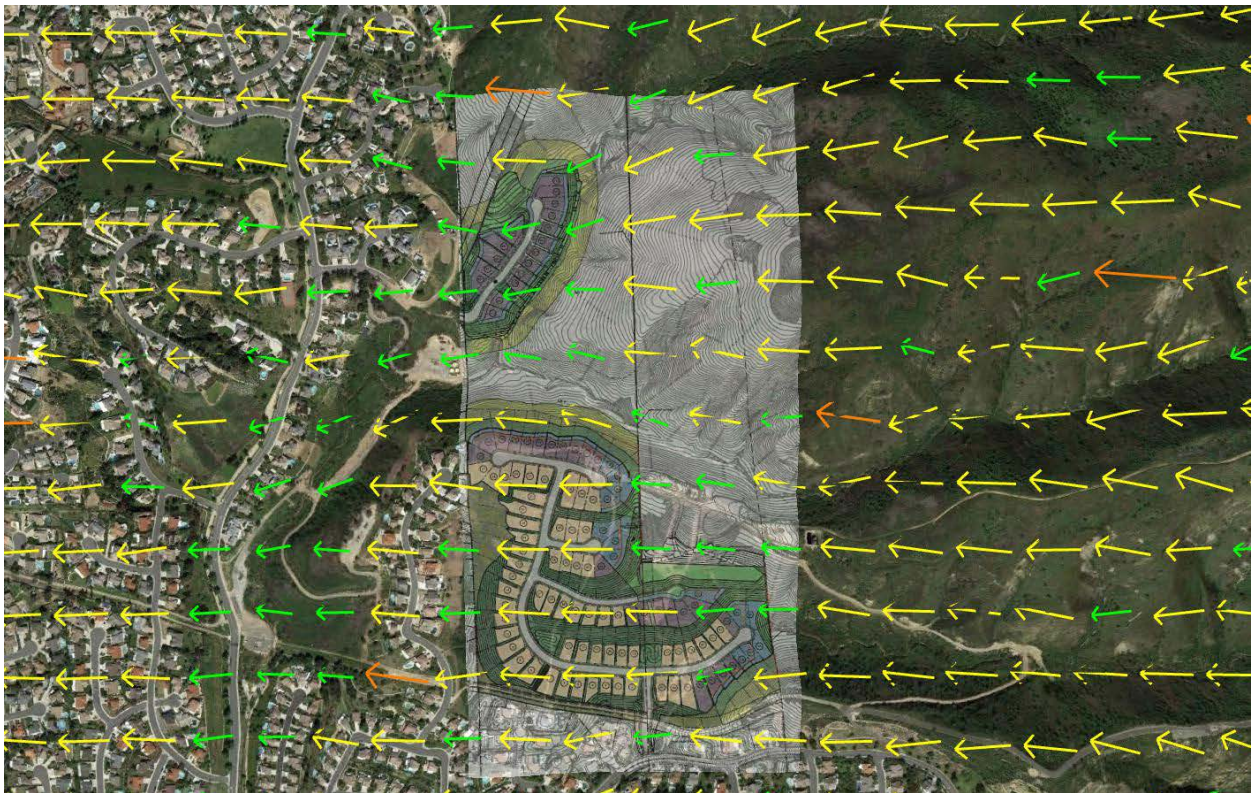


The graphics on the next page show a northeast wind (top) and an east wind (bottom). More wind channeling occurs with the NE wind than the E wind as the E wind runs parallel with the canyons thereby creating very little resistance to change the direction. Some ridgeline acceleration (orange arrows) occurs away from the development site and above the project site elevation. Some minor wind sheltering (green and blue arrows) occurs in the deeper drainages between the two development sites. Yellow arrows are average wind speed and the modeling showed no extreme acceleration (red arrows) near the project site.

Northeast Wind



East Wind



Note: no wind acceleration or wind channeling on the site.

Wind from the east will travel down the two canyons east of the project site as shown above. Any fire within these canyons will be influenced by the wind and by the topography of the canyon. Once again the difference in fuel load on the north and south aspects is clearly visible and it should also be noted that the slope of the northern aspects is also significantly greater.

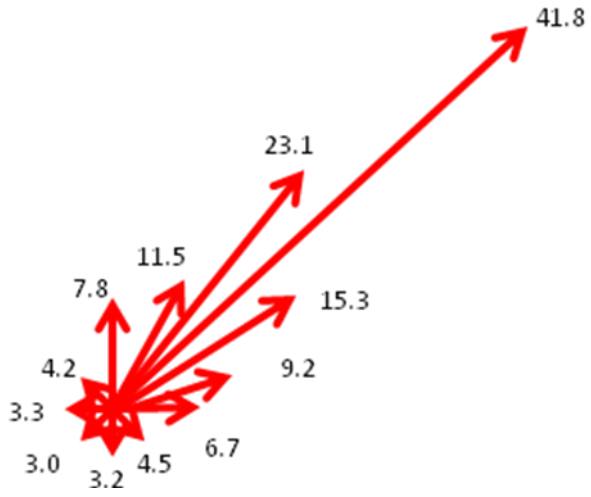
BehavePlus Fire Behavior Inputs and Results:

Inputs for the Behave Plus Fire Behavior Model were as follows:

Moisture scenarios used are extreme. One-hour fuels at 3%, ten-hour at 4% and hundred-hour at 5%. Herbaceous live fuels are modeled at fully cured (30%) and woody fuels at 50%. Model runs have been completed for various aspects on the two wind scenarios and for an east wind with slope influences. All scenarios assumed a 100% (1:1 slope), except the north aspect influence which used 200% as the worst case. Aspects are shown on the model scenario and the spread direction is shown in 15 degree increments to show the slope effect and when and/or if it over powers the wind.

Behave runs have been completed for both the NE Santa Ana wind and the onshore SW wind. The moisture scenario are unchanged to simulate the rear dry onshore that can occur when the Santa Ana winds break down and on shore flow is resumed but the air immediately offshore is the dry air that has been pushed out to see by the NE wind event. This condition is rare and only last for a short period of time as the air further out to sea, will have increased moisture level when then return to the land by the onshore breeze. An east wind has been modeled to show the effects of fuel and slope in the canyons to the east of the project site and to get a better idea of how the fire will behave in these interface areas.

The Behave outputs are attached in the appendixes but have been summarized here for discussion purposes. The fire that has been modeled here is a fast running wind driven fire that burns in an elliptical pattern shown below by the red arrows. To the right are the calculated flame lengths for each of the directions of spread for the worst case scenarios modeled. We find that a maximum flame length for SCAL18 of 41.8 feet is possible at the head of the fire, when the fire is running across the slope with a continuous fuel bed that is consistent enough to produce a self-sustaining, self propagating fire. It is important to note that flames only 15 degrees out of the perfect alignment of all the factors are about one-half the size if the flaming point of the fire. Another 15 degrees drops the flame lengths to less than 1/3 of the flaming point. Fire to the flanks and backing fire are small enough to extinguished using hand tools.



Flame Length (ft)			
Spread Dir	Fuel Model		
deg	SCAL18	gs2	sh5
0	3.2	2.1	4.2
15	3.1	2	4
30	3	1.9	3.9
45	3	1.9	3.8
60	3	1.8	3.8
75	3.1	1.9	3.9
90	3.3	1.9	4
105	3.5	2	4.2
120	3.8	2.1	4.5
135	4.2	2.3	4.9
150	4.9	2.6	5.6
165	6	2.9	6.5
180	7.8	3.5	8.1
195	11.5	4.5	10.8
210	23.1	6.5	16.8
225	41.8	11.6	37.3
240	15.3	23.1	34.2
255	9.2	10.3	16.1
270	6.7	6	10.5
285	5.4	4.3	7.9
300	4.5	3.4	6.4
315	4	2.9	5.5
330	3.6	2.5	4.9
345	3.4	2.3	4.5
360	3.2	2.1	4.2

A summary matrix of the modeling result is found on the next four pages

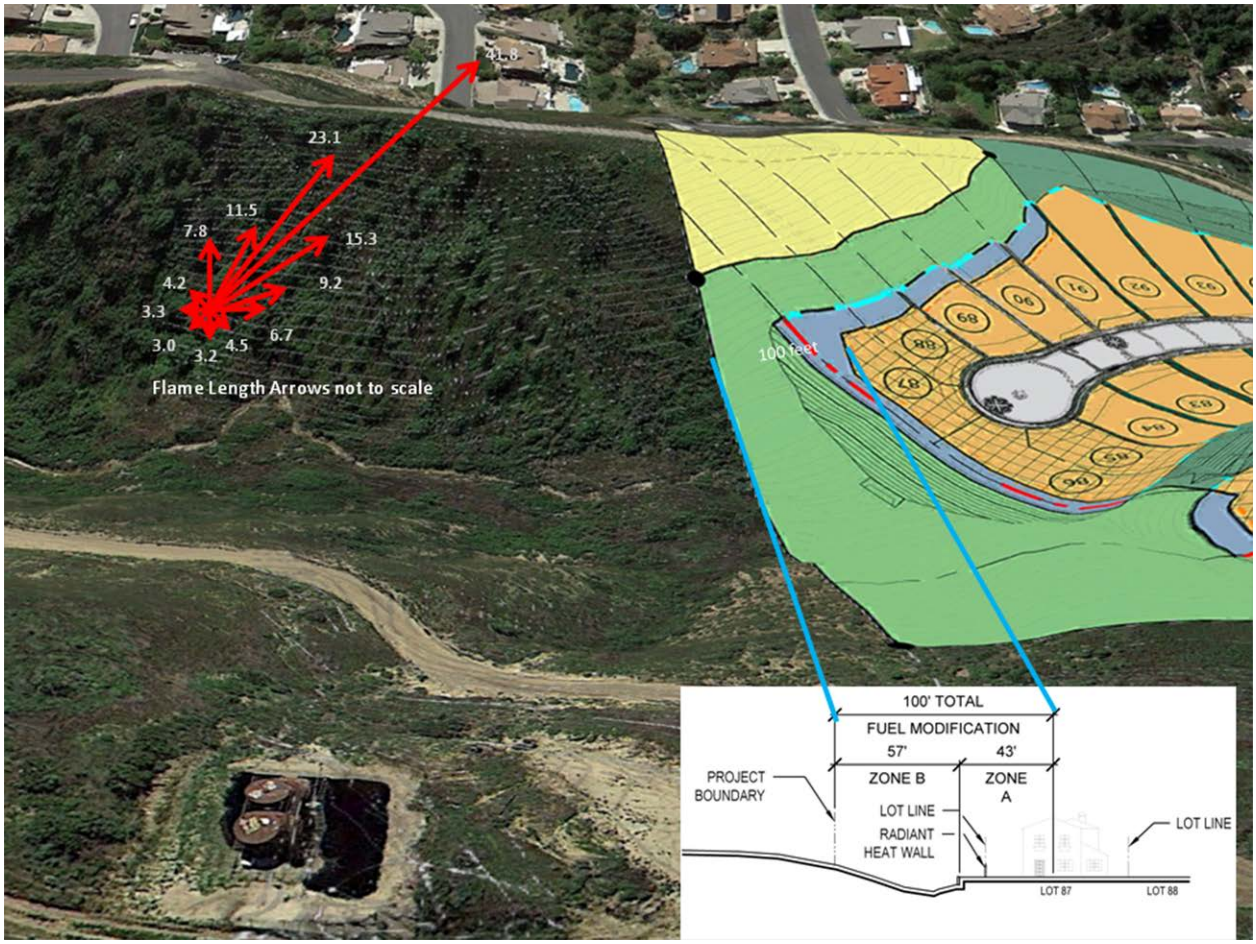
	SouthWest 30 mph			East 50mph			East 50 mph - N Aspect				East 50 mph - S Aspect	
Surface Rate of Spread (ch/h)												
Spread Dir	Fuel			Fuel			Fuel				Fuel	
deg	SCAL18	gs2	sh5	SCAL18	gs2	sh5	SCAL18	gs2	sh5	4	SCAL18	gs2
0	8.7	14.9	24.5	1.9	4.1	6	0.9	2.7	3.6	7.8	3.2	4.9
15	18.2	30.6	50.6	1.5	3.2	4.8	0.9	2.4	3.2	7	2.4	3.8
30	58	90.7	153.9	1.3	2.7	4	0.8	2.2	3	6.4	1.9	3.1
45	229.2	275.4	505.9	1.1	2.4	3.5	0.8	2.1	2.9	6.1	1.6	2.6
60	58	90.7	153.9	1	2.2	3.2	0.8	2	2.9	6.1	1.4	2.4
75	18.2	30.6	50.6	1	2.1	3.1	0.9	2.1	3	6.2	1.3	2.2
90	8.7	14.9	24.5	1	2	3	1	2.2	3.3	6.6	1.2	2.1
105	5.2	8.9	14.6	1	2.1	3.1	1.1	2.4	3.6	7.3	1.2	2.1
120	3.5	6.1	10	1	2.2	3.2	1.4	2.7	4.2	8.4	1.2	2.2
135	2.6	4.5	7.4	1.1	2.4	3.5	1.7	3.3	5.2	10.1	1.2	2.3
150	2.1	3.6	5.9	1.3	2.7	4	2.4	4.1	6.8	12.9	1.4	2.6
165	1.8	3	5	1.5	3.2	4.8	3.7	5.6	9.5	17.6	1.5	3
180	1.5	2.7	4.4	1.9	4.1	6	6.5	8.4	15	26.7	1.8	3.6
195	1.4	2.4	4	2.6	5.5	8	15.3	14.3	28.3	46.9	2.3	4.7
210	1.3	2.3	3.8	3.8	8.1	11.9	70	31.2	74.3	107.2	3.1	6.5
225	1.3	2.3	3.7	6.4	13.6	20.1	252.8	111.6	419.8	431.3	4.5	10.1
240	1.3	2.3	3.8	13.8	28.9	42.6	28.5	497.7	347.2	1296.4	7.5	18.5
255	1.4	2.4	4	48.1	97.3	145.2	9.5	85.5	67	208.7	15.5	45.2
270	1.5	2.7	4.4	322.9	504.5	814.2	4.7	26.8	26.5	70.9	49.5	202.7
285	1.8	3	5	48.1	97.3	145.2	2.9	12.9	14.4	35.6	258	268.7
300	2.1	3.6	5.9	13.8	28.9	42.6	2	7.8	9.2	21.9	60.2	53.9
315	2.6	4.5	7.4	6.4	13.6	20.1	1.5	5.3	6.6	15.2	17.4	20.6
330	3.5	6.1	10	3.8	8.1	11.9	1.2	4	5.1	11.5	8.1	11
345	5.2	8.9	14.6	2.6	5.5	8	1	3.2	4.2	9.2	4.7	6.9
360	8.7	14.9	24.5	1.9	4.1	6	0.9	2.7	3.6	7.8	3.2	4.9

	SouthWest 30 mph			East 50mph			East 50 mph - N Aspect				East 50 mph - S Aspect	
Fireline Intensity (Btu/ft/s)												
Spread Dir	Fuel Model			Fuel Model			Fuel Model				Fuel	
deg	SCAL18	gs2	sh5	SCAL18	gs2	sh5	SCAL18	gs2	sh5	4	SCAL18	gs2
0	652	156	866	143	43	212	70	28	127	469	239	52
15	1363	321	1791	114	34	168	65	25	114	416	177	40
30	4348	953	5446	96	29	141	62	23	107	384	140	32
45	17182	2893	17901	84	25	124	61	22	103	368	118	28
60	4348	953	5446	77	23	114	63	21	104	364	103	25
75	1363	321	1791	73	22	108	67	22	107	373	94	23
90	652	156	866	72	21	106	74	23	115	397	89	22
105	388	94	518	73	22	108	85	25	129	437	88	22
120	264	64	353	77	23	114	102	29	150	502	89	23
135	196	48	263	84	25	124	131	35	183	604	93	24
150	156	38	209	96	29	141	180	44	239	770	102	27
165	131	32	176	114	34	168	274	59	337	1055	115	31
180	115	28	155	143	43	212	487	88	531	1596	137	38
195	106	26	142	193	58	285	1146	150	1000	2805	172	49
210	100	24	135	285	85	420	5247	327	2627	6412	230	69
225	99	24	132	483	143	710	18950	1172	14854	25794	336	106
240	100	24	135	1031	304	1507	2134	5229	12283	77530	561	194
255	106	26	142	3604	1022	5139	709	898	2370	12481	1163	475
270	115	28	155	24210	5300	28809	356	281	938	4240	3713	2129
285	131	32	176	3604	1022	5139	218	136	508	2130	19342	2823
300	156	38	209	1031	304	1507	152	82	326	1307	4513	566
315	196	48	263	483	143	710	115	56	233	907	1303	217
330	264	64	353	285	85	420	93	42	180	685	605	115
345	388	94	518	193	58	285	79	33	148	553	355	73
360	652	156	866	143	43	212	70	28	127	469	239	52

	SouthWest 30 mph			East 50mph			East 50 mph - N Aspect				East 50 mph - S Aspect	
Flame Length (ft)												
Spread Dir	Fuel Model			Fuel Model			Fuel Model				Fuel	
deg	SCAL18	gs2	sh5	SCAL18	gs2	sh5	SCAL18	gs2	sh5	4	SCAL18	gs2
0	8.9	4.6	10.1	4.4	2.5	5.3	3.2	2.1	4.2	7.6	5.6	2.8
15	12.4	6.4	14.1	4	2.3	4.8	3.1	2	4	7.2	4.9	2.4
30	21.2	10.6	23.5	3.7	2.1	4.4	3	1.9	3.9	7	4.4	2.2
45	39.9	17.6	40.7	3.5	2	4.1	3	1.9	3.8	6.8	4	2.1
60	21.2	10.6	23.5	3.3	1.9	4	3	1.8	3.8	6.8	3.8	2
75	12.4	6.4	14.1	3.2	1.9	3.9	3.1	1.9	3.9	6.9	3.6	1.9
90	8.9	4.6	10.1	3.2	1.8	3.8	3.3	1.9	4	7.1	3.6	1.9
105	7	3.6	8	3.2	1.9	3.9	3.5	2	4.2	7.4	3.5	1.9
120	5.8	3	6.7	3.3	1.9	4	3.8	2.1	4.5	7.9	3.5	1.9
135	5.1	2.7	5.8	3.5	2	4.1	4.2	2.3	4.9	8.6	3.6	2
150	4.6	2.4	5.3	3.7	2.1	4.4	4.9	2.6	5.6	9.6	3.8	2.1
165	4.2	2.2	4.9	4	2.3	4.8	6	2.9	6.5	11.1	4	2.2
180	4	2.1	4.6	4.4	2.5	5.3	7.8	3.5	8.1	13.4	4.3	2.4
195	3.8	2	4.4	5.1	2.9	6.1	11.5	4.5	10.8	17.3	4.8	2.7
210	3.7	2	4.3	6.1	3.5	7.2	23.1	6.5	16.8	25.4	5.5	3.2
225	3.7	1.9	4.3	7.7	4.4	9.2	41.8	11.6	37.3	48.1	6.5	3.9
240	3.7	2	4.3	10.9	6.2	13	15.3	23.1	34.2	79.9	8.3	5.1
255	3.8	2	4.4	19.5	10.9	22.9	9.2	10.3	16.1	34.5	11.6	7.7
270	4	2.1	4.6	46.8	23.2	50.7	6.7	6	10.5	21	19.7	15.3
285	4.2	2.2	4.9	19.5	10.9	22.9	5.4	4.3	7.9	15.3	42.2	17.4
300	4.6	2.4	5.3	10.9	6.2	13	4.5	3.4	6.4	12.2	21.6	8.3
315	5.1	2.7	5.8	7.7	4.4	9.2	4	2.9	5.5	10.3	12.2	5.3
330	5.8	3	6.7	6.1	3.5	7.2	3.6	2.5	4.9	9.1	8.6	4
345	7	3.6	8	5.1	2.9	6.1	3.4	2.3	4.5	8.2	6.7	3.2
360	8.9	4.6	10.1	4.4	2.5	5.3	3.2	2.1	4.2	7.6	5.6	2.8

	SouthWest 30 mph			East 50mph			East 50 mph - N Aspect				East 50 mph - S Aspect	
Direction of Maximum Spread												
Spread	Fuel Model			Fuel Model			Fuel Model				Fuel	
Dir												
deg	SCAL18	gs2	sh5	SCAL18	gs2	sh5	SCAL18	gs2	sh5	4	SCAL18	gs2
0	45	45	45	270	270	270	221	239	232	237	286	279
15	45	45	45	270	270	270	221	239	232	237	286	279
30	45	45	45	270	270	270	221	239	232	237	286	279
45	45	45	45	270	270	270	221	239	232	237	286	279
60	45	45	45	270	270	270	221	239	232	237	286	279
75	45	45	45	270	270	270	221	239	232	237	286	279
90	45	45	45	270	270	270	221	239	232	237	286	279
105	45	45	45	270	270	270	221	239	232	237	286	279
120	45	45	45	270	270	270	221	239	232	237	286	279
135	45	45	45	270	270	270	221	239	232	237	286	279
150	45	45	45	270	270	270	221	239	232	237	286	279
165	45	45	45	270	270	270	221	239	232	237	286	279
180	45	45	45	270	270	270	221	239	232	237	286	279
195	45	45	45	270	270	270	221	239	232	237	286	279
210	45	45	45	270	270	270	221	239	232	237	286	279
225	45	45	45	270	270	270	221	239	232	237	286	279
240	45	45	45	270	270	270	221	239	232	237	286	279
255	45	45	45	270	270	270	221	239	232	237	286	279
270	45	45	45	270	270	270	221	239	232	237	286	279
285	45	45	45	270	270	270	221	239	232	237	286	279
300	45	45	45	270	270	270	221	239	232	237	286	279
315	45	45	45	270	270	270	221	239	232	237	286	279
330	45	45	45	270	270	270	221	239	232	237	286	279
345	45	45	45	270	270	270	221	239	232	237	286	279
360	45	45	45	270	270	270	221	239	232	237	286	279

The fire behavior relative to the topography and structures within the project is an important factor in the development of the fire protection system for this development. Shown below, the north aspect due east of the southerly portion of the project site has significant fuels but is not in a location that will create an expose to the project site. The red arrows (not to scale) show that an east wind carrying fire down this canyon would be influenced by the slope and fuel to have the largest flame length be upslope away from the project site structures. Flames coming at the project site would be significantly less. The vegetation in the bottom of the canyon and on the south aspect, simply do not have enough fuel to produce the large flame lengths of the north aspect. The largest flame length impacting the fuel modification zone would be less than 25 feet and well within the 2:1 ratio needed for protecting the structures. In fact, the ration would be more in line with the 4:1 ratio required for a "safety zone" where personnel and equipment would be safe without the use of radiant heat shelters.



Fire Behavoir Summary

While the modeling indicates that flame lengths of just under 50 feet are possible under perfect conditions, this is unlikely due to predominate winds that drive wildland fires and arrangment of the slopes and fuel relative to the structures. The fuels are not aligned with the slope and wind and fuels are not continueous enough to drive fire behavior to the level of the equilibrium spread rates used in the modeling in most of the areas adjacent to the fuel modification zones. Flanking fire of six to eight feet maximum is expected at the property line of the lots within the development or at the base of the fuel modification zones or radiant heat walls. In all areas, the 2:1 safety ratio is achieved and in most areas the ratio is 4:1 or more.

Most of the fuels that would have been an issue with the development will be removed and replaced with approved vegetation as a part of the grading and project development.

Associated with the fuel modification plan, the Project would incorporate a landscape plan that utilizes a plant palette consisting of fire resistant plants, native and appropriate non-native drought tolerant species in accordance with Orange County Fire Authority (OCFA) guidelines. The Project's fuel modification plan would provide fire protection for the Project, as well for the existing residences to the south and west of the project site. A detailed description of the fire protection plan to be implemented for the Project and illustrations of the Project's fuel modification zones is included in Section 4.7, *Hazards and Hazardous Materials*, in this Draft EIR.

The technical results provided as part of the Fire Behavior Analysis within this report were obtained using Behave Plus version 5.0.5. and Wind Ninja software.

Tim Chavez
Wildland Interface Specialist

Fuel Modification Zones/Fire Protection Features

The Project would implement a fire protection plan that would comply with or exceed the Orange County Fire Authority's (OCFA) standards for Very High Fire Hazard Severity Zone/Special Fire Protection Areas. Fire protection measures as part of the project would include, but are not limited to, fire-resistant structures adjoining natural open space areas and fuel modification/management to help suppress wildland fires. Several areas of the project site would require fuel modification. Fuel modification would occur within four zones with each zone designed specifically to help suppress a fire in different ways. The zones would include requirements for minimum structure setbacks, permanent irrigation systems, fire resistant plants from an approved plant list by the County, landscape and planting maintenance (i.e., thinning and removal of dead plants). On the following page is a description of the fuel modification zones.

ZONE A - NON-COMBUSTILBE CONSTRUCTION:

10'-0" to 95'-0" setback zone for non-combustible construction only. Zone A shall be maintained by the Homeowners Association.

ZONE B - WET ZONE (100% REMOVAL UNDESIRABLE SHRUBS):

First 5'-0" to 186'-0" from Zone A. Zone B shall be cleared of all undesirable plant species, irrigated, and planted with species from Attachment 8. Exceptions to save desirable species may be submitted for approval by the OCFA on a site specific basis.

ZONE C - THINNING ZONE (50% THINNING NATIVE SHRUBS):

21'-0" - 100'-0" out from Zone B. Zone C shall be non-irrigated and required horizontal and vertical spacing of plant groups in accordance with Attachement 6 and removal of all dead and dying vegetation and undesirable species from Attachment 7. Minimum thinning percentage of plant removal is 50%. Zone C area shall be maintained the Homeowners Association.

SPECIAL MAINTENANCE AREA - WET ZONE AND DRY ZONE:

The Special Maintenance Areas have maintenance requirements to reduce the chances of ignition from wildfires. They need maintenance just as fuel modification zones do and shall be maintained on a year round basis, with removal of all dead and dying plant material, replacement of dead or diseased species with plant material with the same growth characteristics from the approved landscape plans. Irrigation shall be verified on a regular basis to ensure it is in a working a condition and the plants shall be irrigated as necessary to keep them healthy with their appropriate moisture content. A copy of the approved Landscape Plans shall be provided to the HOA by the developer and remain on record indefinitely with the HOA. Copies of plans shall be provided to the contracted maintenance company. It is the responsibility of the HOA to forward a copy of the approved Landscape Plans to any new property management company. The HOA shall inspect the special maintenance areas twice a year to ensure the special maintenance areas retain the original design of the areas.

The following are further Special Maintenance Area (SMA) requirements:

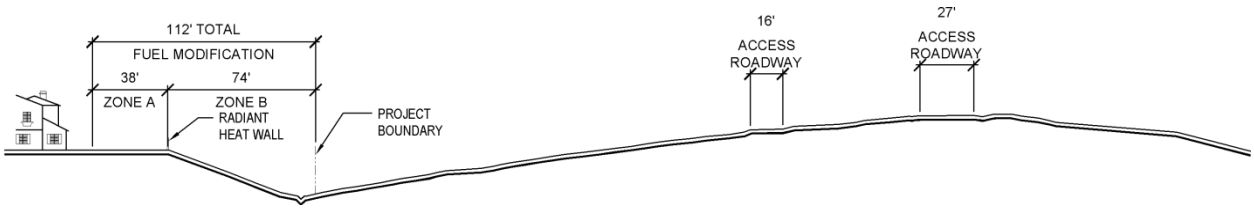
- Other than trees, a large percentage of the special maintenance area shall consist of a ground cover that naturally grows no taller than 2 feet in height.

- The areas are completely irrigated and have plants that need irrigation to retain healthy fuel moisture.
- Any dead and dying specimens and branches shall be removed.
- Leaf litter on top of vegetative cover shall be removed.
- Landscape design Plans shall be retained by the HOA indefinitely and the slopes shall always remain as they were designed.
- As plants migrate or new plants seed-in, those shall be removed to retain the original design.
- Future changes to slope designs shall be approved by OCFA.
- The maintenance requirements of the special maintenance areas shall be factored into the funding with the fuel modification zones.
- Special Maintenance Areas shall be designed and also maintained as to not provide direct flame or an excessive amount of radiant heat on structures.
- Special Maintenance Areas will have a limited use of native grasses as approved by OCFA.

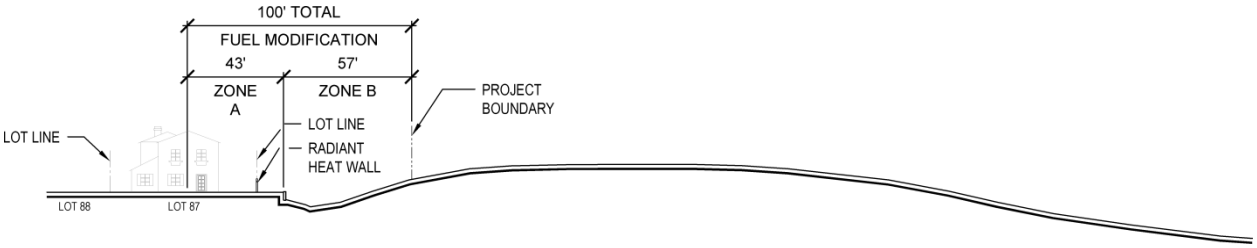
PRIVATE HOMEOWNER SIDE YARD SLOPES:

Planting Plans for the private homeowner side yard slopes shall be reviewed by the HOA and shall be devoid of eucalyptus, juniper, cedar, cypress, washingtonia robusta (mexican fan palm), acacia (except for acacia desert carpet) and pine trees, California sagebrush, chamise, buckwheat and black and white sage (Salvia spp.). Additionally California Fescue (Festuca californica) shall not be planted or included within any seed mix as recorded within the CC&R's.

Two areas within the project site will not be capable of providing a typical 170 foot fuel modification zone. These areas would be protected in an equal but alternative method by increasing the irrigated zone(s) to 100 feet and providing a six foot high radiant heat wall at the bottom of the fuel modification zone (indicated by dotted red line).

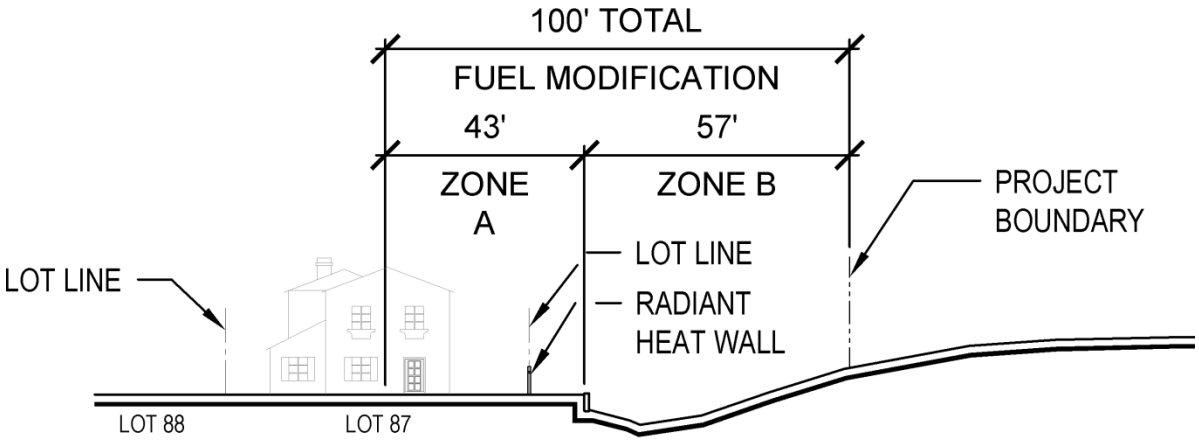


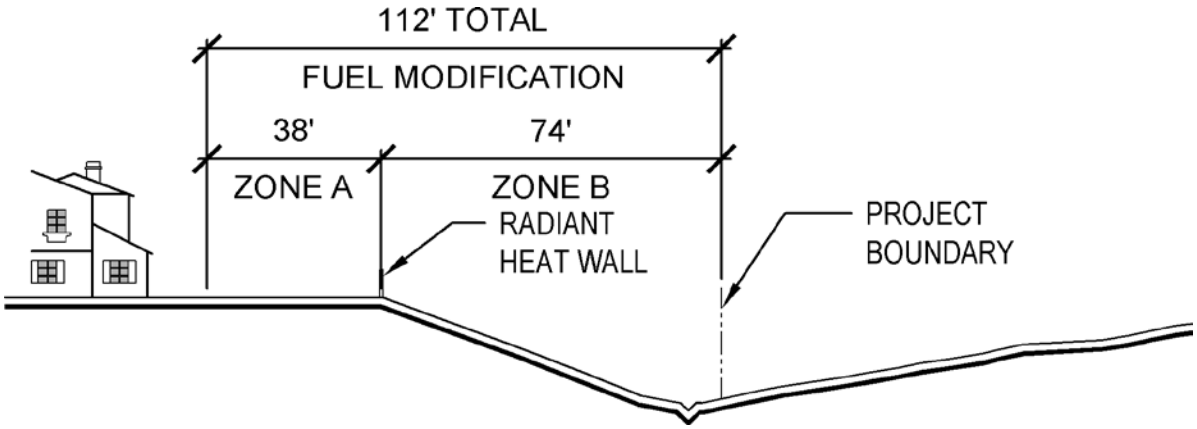

122' ZONE B
222' ZONE B
10' ZONE A
20' ZONE A
70
69
68
86
85
84
83
82
81
87
88
89
90
91
92
93
100' TOTAL FUEL MODIFICATION
PROJECT BOUNDARY


100' TOTAL
FUEL MODIFICATION
43'
57'
ZONE A
ZONE B
LOT LINE
RADIANT HEAT WALL
PROJECT BOUNDARY
LOT LINE
LOT 88
LOT 87

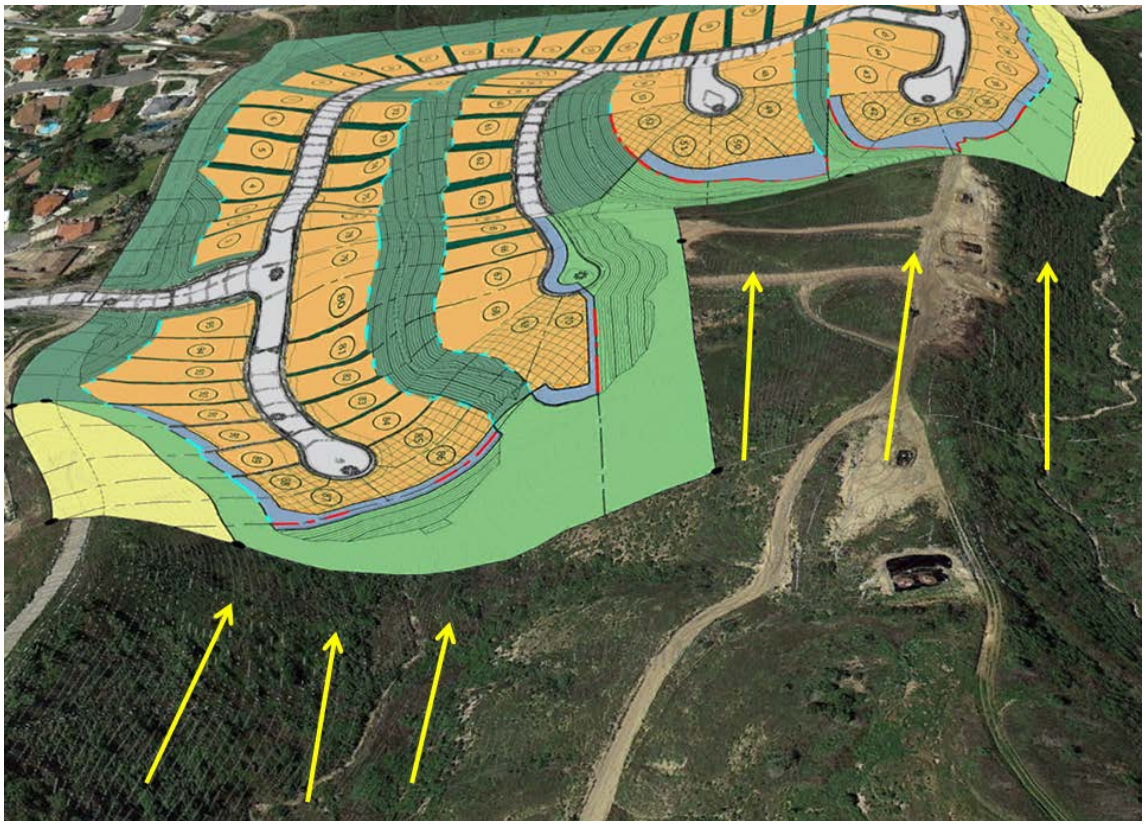
Radiant Heat Walls

As indicated in the defensible space design, a block wall/radiant heat wall will be constructed when a fuel modification zone is not possible without offsite improvements. In all cases, the wall has been placed where the fuels below the structure is not of a continuous nature, not in alignment with the slope and Santa Ana winds or the predominate wind (S). In most cases, the radiant heat wall is at the base of the irrigated zone and down slope from the native vegetation

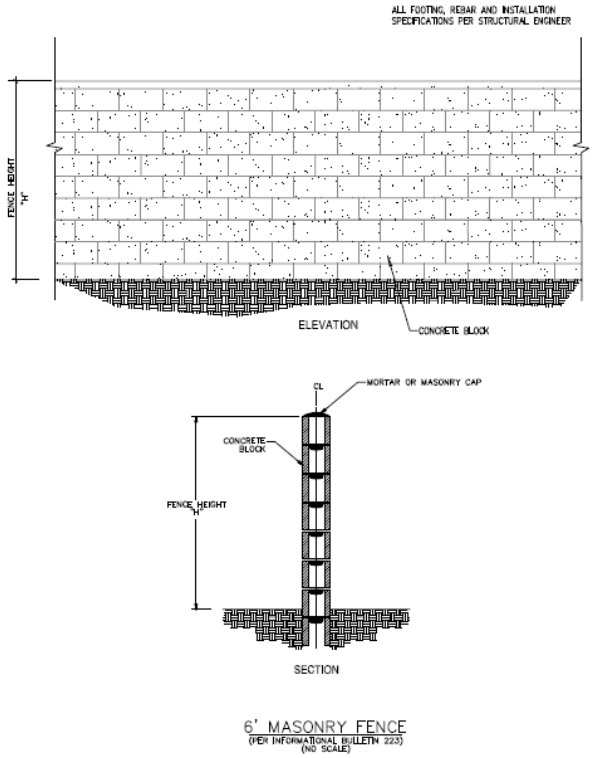


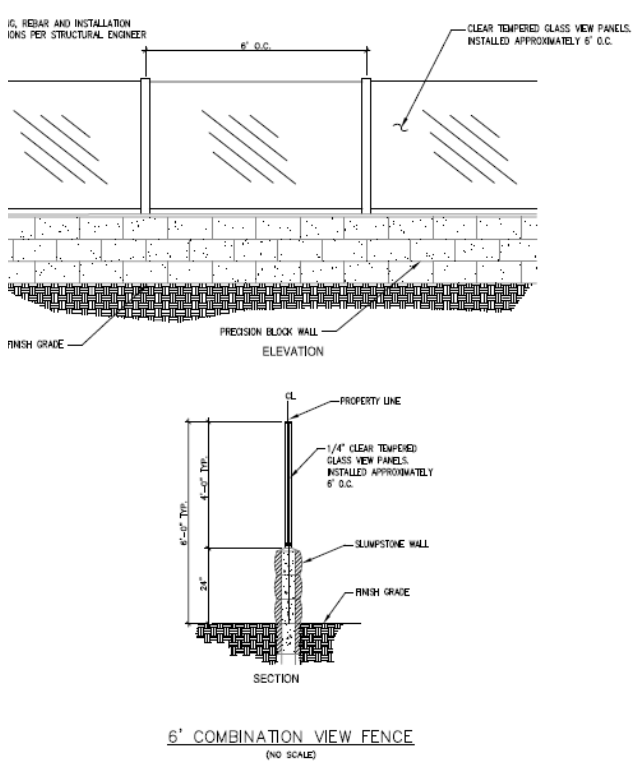


The radiant heat walls are perpendicular to the wind but parallel with the slope. This is shown on the graphic on the following page where the radiant heat wall locations are in red and the east wind shown in yellow. The radiant heat walls are at the property line and will be constructed on what is essentally the native slope that is shown in the graphic.



These walls will be either block or tempered glass over block similar to those shown below.





These types of walls are extremely effective when used at the top of the slope in light to moderate fuels. The extreme fire behavior that can be produced by high winds also bends the fire over making it travel more parallel to the ground. The harder the wind, the more the flame angle will be and the more effective the radiant heat wall will become.

Report Summary

The Cielo Vista project will have a number of features and factors which make the community safer than any other development currently in the area. These include:

- New homes will provide a buffer against the flame front for home to the west (historic fire comes from the east)
- All homes lost in Freeway Complex in this area were lost to ember intrusion not the flaming fire front but the new project will have a minimum 2:1 ratio of flame length to fuel modification zone. Most areas will be 4:1 ratio.
- All homes will be fully protected by automatic fire sprinklers and are unlikely to produce ember plumes as they will not likely burn to a point of having a downwind ember cast
- Evacuation routes have at least two directions of travel from the project entrance(s) and many options within a relative short distance
- Water system, wide roads, wildland access points, Full 170 foot fuel modification (or equivalent) make this project as defendable as possible and will not need a large number of resources during a fire.

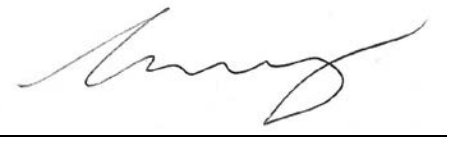
The Cielo Vista project is has been designed and protected by the most recently adopted codes and practices. Firesafe has used the BEHAVE model to measure the intensity of a fire moving towards this development to design a protection system that will ensure that the project will be safe from wildland fires even without fire department suppression activities . Flame lengths and fire intensity are ultimately reduced by the installation and maintenance of the fuel modification plan through the use of the irrigated Zone A and B, the removal of fuels in the Zone C and the radiant heat walls surrounding the homes on the perimeter where 170 foot zone cannot be achieved.

Based on the scientific fire bahavior analysis, exterior portions of future structures or attic spaces will not ignite from the exterior fire exposure from a wildland vegetation fire. This is primarily because the greatest fire energy is too far away from the structures due to the low plant densities within the fuel modification zones and the construction feature requirements.

The codes enforced by the Orange County Fire Authority for Fuel Modification were developed to handle the exact type of fuels that are interfacing with this future development.

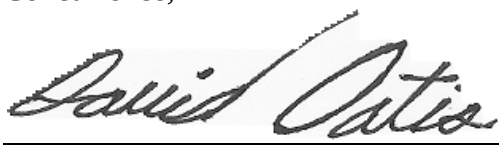
We recommend approval of this Fire Behavior Report as an accurate and acceptable assessment of the hazard and risk factors for the Cielo Vista development as they relate to wildland fire protection.

Respectfully;



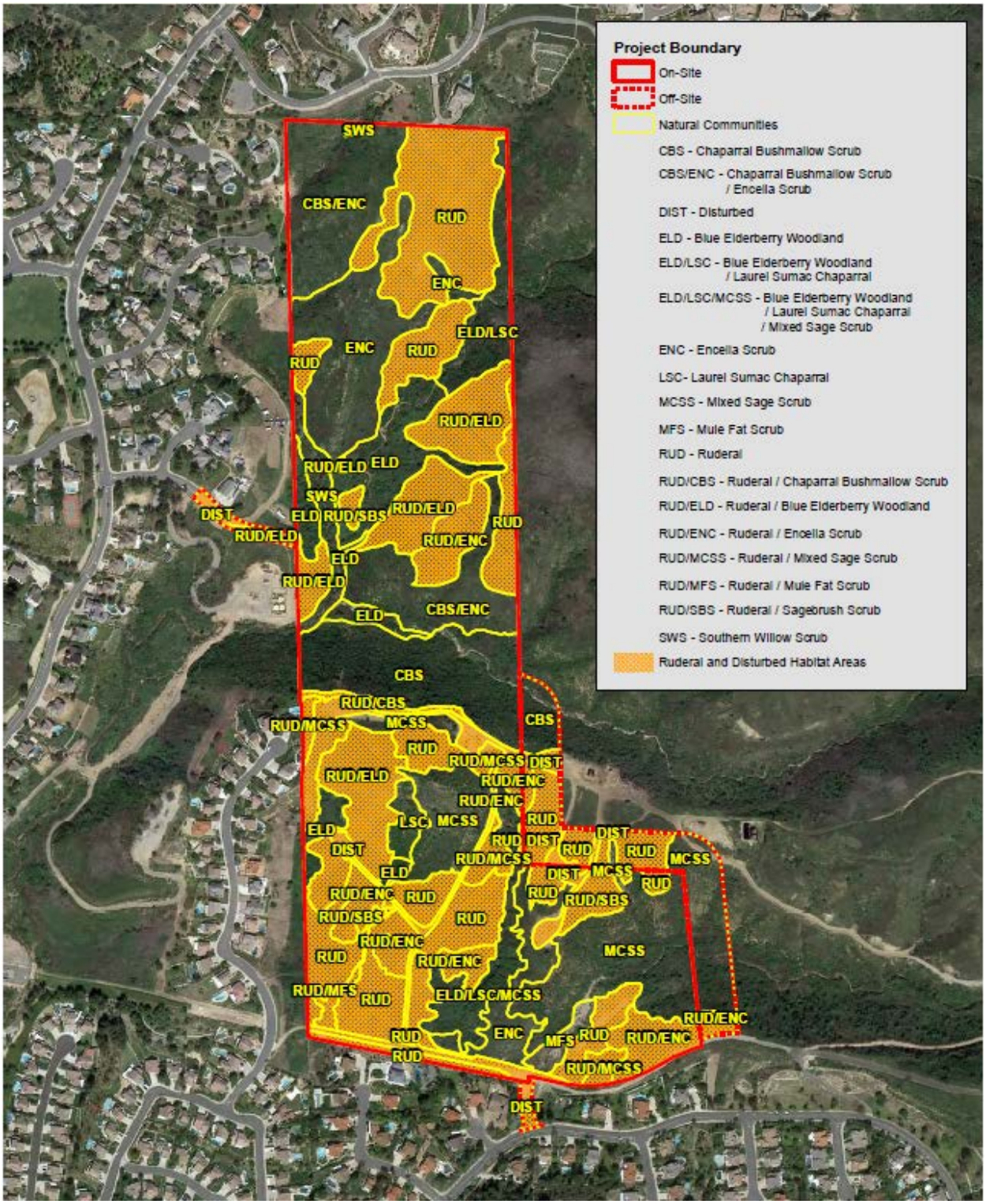
Tim Chavez
Wildland Interface Specialist

Concurrence;



David Oatis
Principal, Firesafe Planning Solutions

Appendix A
Plant Communities



Appendix B

Site Photos

PCR

0 350 700 Feet

Aerial Photograph

Cielo Vista Project

Source: ESRI Street Map, 2009; PCR Services Corporation, 2012.

FIGURE 2-2

Photograph 1: Northerly view of project site from Via Del Agua at primary entrance to Planning Area 1.

Photograph 3: Northwesterly view from southern-central portion of project site (Planning Area 4) towards adjacent residential uses along Dorinda Road.

Photograph 2: Easterly view of project site from Dorinda Road. Dorinda Road is adjacent to Planning Area 1, just west of the project site.

Photograph 4: Southerly view from central portion of project site (Planning Area 1).

Photograph 5: Easterly view of existing on-site oil well located within central portion of Planning Area 1.

Photograph 7: Northwesterly view towards Aspen Way. Aspen Way would provide access to Planning Area 2.

Photograph 6: Westerly view of existing on-site oil well located within northern portion of Planning Area 1.

Photograph 8: Easterly view of project site from terminus of Aspen Way at entrance point to Planning Area 2.

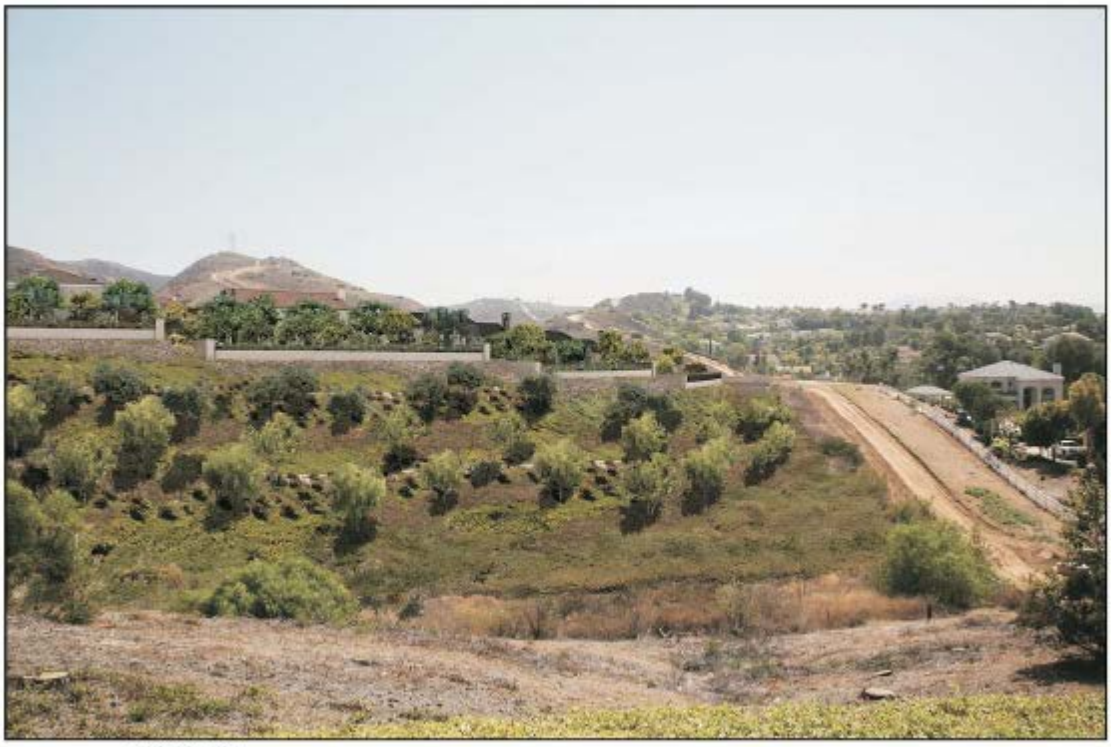
Photograph 9: Easterly view towards project site from end of cul-de-sac of Dorinda road (Planning Area 1).

Photograph 10: Northerly view towards project site (Plannning Area 1) from Via Del Agua/Via De Lakosa intersection.

Photograph 11: Southerly view of project site from Casino Ridge Road.

Visual Simulations of Project Interface

Existing View



Proposed View

Dorinda Road looking southeast

Existing View

Proposed View

Dorinda Road looking northeast

Existing View

Proposed View

Aspen Way looking to the northeast towards Casino Ridge.

Appendix C
Behave Reports

FIRE MASTER PLAN

CIELO VISTA
Tentative Tract Map 17341
Unincorporated County of Orange
(Previously approved s.r. 186560) **S.R. 190617**

NORTH

0 40' 80' 160'

SCALE: 1"=80'

PROJECT BOUNDARY

PROJECT BOUNDARY

EXISTING RESIDENTIAL
NOT A PART

OCFA 'K' TURNAROUND USING PAVEMENT AT RESIDENT DRIVE

30' HOSE PULL

FH

LOT E

LOT D

ATTIC AUTOMATIC FIRE SPINKLERS ARE REQUIRED FOR ALL HOMES ON ASPEN WAY

ASPEN WAY

EXIST FH

PROJECT BOUNDARY

PROJECT BOUNDARY

LOT D

OCFA 'K' TURNAROUND USING PAVEMENT AT RESIDENT DRIVES

STREET E

STREET B

STREET D

STREET C

STREET A

EXISTING OPEN SPACE
NOT A PART

EXISTING RESIDENTIAL
NOT A PART

PROJECT BOUNDARY

PROJECT BOUNDARY

EXISTING RESIDENTIAL
NOT A PART

EXISTING RESIDENTIAL
NOT A PART

EXISTING OPEN SPACE
NOT A PART

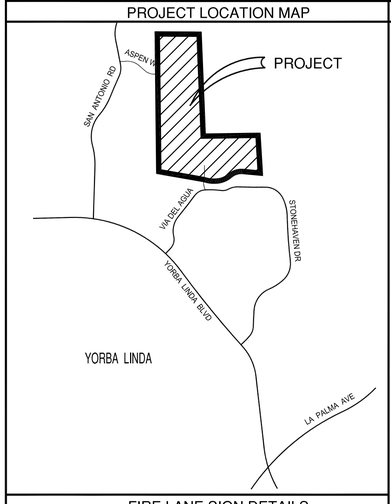
VIA DEL AGUA

STONEHAVEN

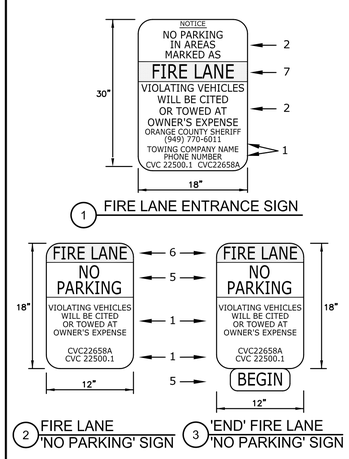
EXISTING FIRE ACCESS

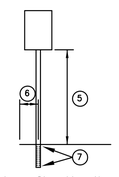
EXIST FH

PROJECT LOCATION MAP



FIRE LANE SIGN DETAILS





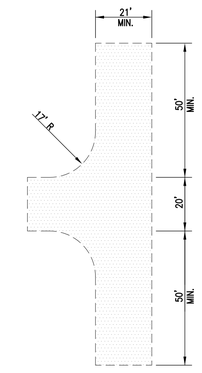
Fire Lane Sign Mounting

SIGN INSTALLATION NOTES:

1. 1" RED LETTERING ON WHITE REFLECTIVE BACKGROUND.
2. 1-3/8" BOLD RED LETTERING ON WHITE REFLECTIVE BACKGROUND.
3. 1-3/8" BOLD CONDENSED RED LETTERING ON WHITE REFLECTIVE BACKGROUND.
4. 2" RED LETTERING ON WHITE REFLECTIVE BACKGROUND
5. 2" BOLD CONDENSED RED LETTERING ON WHITE REFLECTIVE BACKGROUND.
6. 2" BOLD CONDENSED WHITE REFLECTIVE LETTERING ON RED BACKGROUND.
7. 2-1/4" BOLD WHITE REFLECTIVE LETTERING ON RED BACKGROUND.
8. HEIGHT OF SIGN IN SIDEWALK OR PEDESTRIAN AREA SHALL BE 7'-0"; 5'-0" IN ALL OTHER AREAS.
9. DEPTH OF SIGN SHALL BE 18 INCHES FROM STANDARD CURB AND 24 INCHES WITH ROLLED CURB TO CENTER OF POST.
10. BURY DEPTH SHALL BE A MINIMUM OF 24 INCHES.

THE SIGNS SHALL BE SECURELY MOUNTED FACING THE DIRECTION OF TRAVEL AND CLEARLY VISIBLE TO ONCOMING TRAFFIC ENTERING THE DESIGNATED AREA. SIGNS SHALL BE OF DURABLE MATERIAL AND INSTALLED PER ATTACHMENT 14.

OCFA HAMMERHEAD DETAIL



FIRE MASTER PLAN NOTES

1. OCFA SITE INSPECTIONS ARE REQUIRED FOR THIS PROJECT. PLEASE SCHEDULE ALL FIELD INSPECTIONS AT LEAST 48 HOURS IN ADVANCE. INSPECTIONS CANCELED AFTER 1 P.M. ON THE DAY BEFORE THE SCHEDULED DATE WILL BE SUBJECT TO A RE-INSPECTION FEE. CALL OCFA INSPECTION SCHEDULING AT (714) 573-6150.
2. A LUMBER DROP INSPECTION SHALL BE PERFORMED PRIOR TO BRINGING COMBUSTIBLE MATERIALS ON-SITE (OR DRYWALL FOR STRUCTURES OF NON-COMBUSTIBLE CONSTRUCTION). ALL-WEATHER ACCESS ROADS CAPABLE OF SUPPORTING 68,000 LBS., TOPPED WITH ASPHALT, CONCRETE, OR EQUIVALENT SHALL BE IN PLACE AND HYDRANTS OPERATIONAL AT TIME OF LUMBER DROP INSPECTION.
3. FOR PROJECTS IN A FHSZ/WUI, A VEGETATION CLEARANCE INSPECTION IS REQUIRED PRIOR TO A LUMBER DROP INSPECTION. USE THE FUEL MODIFICATION PLAN SERVICE REQUEST NUMBER TO SCHEDULE THE VEGETATION CLEARANCE INSPECTION.
4. PHASED INSTALLATION OF FIRE ACCESS ROADS REQUIRES ADDITIONAL INSPECTIONS NOT COVERED BY THE FEES PAID AT PLAN SUBMITTAL. CONTACT INSPECTION SCHEDULING TO ARRANGE FOR ADDITIONAL INSPECTIONS THAT MAY BE NEEDED AND ANY FEES THAT MAY BE DUE.
5. AN ORIGINAL APPROVED, SIGNED, WET-STAMPED OCFA FIRE MASTER PLAN SHALL BE AVAILABLE ON-SITE AT TIME OF INSPECTION.
6. ACCESS ROADS AND HYDRANTS SHALL BE MAINTAINED AND REMAIN CLEAR OF OBSTRUCTIONS AT ALL ITEMS DURING AND AFTER CONSTRUCTION. AREAS WHERE PARKING IS NOT PERMITTED SHALL BE CLEARLY IDENTIFIED AT ALL TIMES. OBSTRUCTION OF FIRE LANES AND HYDRANTS MAY RESULT IN CANCELLATION OR SUSPENSION OF INSPECTIONS.
7. TEMPORARY FUEL TANKS OF 60 OR MORE GALLONS SHALL BE REVIEWED, INSPECTED, AND PERMITTED BY THE OCFA PRIOR TO USE.
8. THE PROJECT ADDRESS SHALL BE CLEARLY POSTED AND VISIBLE FROM THE PUBLIC ROAD DURING CONSTRUCTION.
9. ALL GATES IN CONSTRUCTION FENCING SHALL BE EQUIPPED WITH EITHER A KNOX OR BREAKAWAY PADLOCK.
10. BUILDINGS OF FOUR OR MORE STORIES SHALL BE PROVIDED WITH STAIRS AND A STANDPIPE BEFORE REACHING 40 FEET IN HEIGHT.

GENERAL REQUIREMENTS

11. FIRE LANE WIDTHS SHALL BE MEASURED FROM TOP FACE OF THE CURB TO TOP FACE OF THE CURB FOR FIRE LANES WITH STANDARD CURBS AND GUTTERS AND FROM FLOW-LINE TO FLOW-LINE FOR FIRE LANES WITH MODIFIED CURB DESIGNS (E.G., ROLLED, RAMPED, ETC). THE DEVELOPER IS RESPONSIBLE TO VERIFY THAT ALL APPROVED PUBLIC WORKS OR GRADING DEPARTMENT STREET IMPROVEMENT PLANS OR PRECISE GRADING PLANS CONFORM TO THE MINIMUM STREET WIDTH MEASUREMENTS PER THE APPROVED OCFA FIRE MASTER PLAN AND STANDARDS IDENTIFIED IN OCFA GUIDELINE B-09 FOR ALL PORTIONS OF THE FIRE ACCESS ROADS.
12. PERMANENT, TEMPORARY, AND PHASED EMERGENCY ACCESS ROADS SHALL BE DESIGNED AND MAINTAINED TO SUPPORT AN IMPOSED LOAD OF 68,000 LBS. AND SURFACED TO PROVIDE ALL-WEATHER DRIVING CAPABILITIES.
13. FIRE LANE SIGNS AND RED CURBS SHALL MEET THE SPECIFICATIONS SHOWN IN OCFA GUIDELINE B-09 AND SHALL BE INSTALLED AS DESCRIBED THEREIN. ADDITIONAL FIRE LANE MARKINGS MAY BE REQUIRED AT THE TIME OF INSPECTION DEPENDING ON FIELD CONDITIONS.
14. ALL FIRE HYDRANTS SHALL HAVE A "BLUE REFLECTIVE PAVEMENT MARKER" INDICATING THEIR LOCATION PER THE OCFA STANDARD. ON PRIVATE PROPERTY MARKERS ARE TO BE MAINTAINED IN GOOD CONDITION BY THE PROPERTY OWNER.
15. ADDRESS NUMBERS SHALL BE LOCATED AND BE OF A COLOR AND SIZE SO AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE ROADWAY FROM WHICH THE BUILDING IS ADDRESSED IN ACCORDANCE WITH OCFA GUIDELINE B-09. ADDRESS NUMBERS SHALL BE ILLUMINATED AT NIGHT. WAYFINDING SIGNS, WHEN REQUIRED BY THE LOCAL AHJ, SHALL COMPLY WITH THE STANDARDS OF THAT AGENCY. WHEN WAYFINDING SIGNS ARE ALSO REQUIRED BY THE OCFA, THEY MAY BE DESIGNED TO LOCAL AHJ REQUIREMENTS PROVIDED THAT SUCH STANDARDS FACILITATE LOCATION OF STRUCTURES, SUITES, AND DWELLING UNITS BY EMERGENCY PERSONNEL.
16. ACCESS GATES SHALL BE APPROVED PRIOR TO INSTALLATION AND SHALL BE IN COMPLIANCE WITHIN CHAPTER 5 OF THE CFC AND OCFA GUIDELINES.
17. APPROVED ACCESS WALKWAYS SHALL BE PROVIDED TO ALL REQUIRED OPENINGS AND ALL RESCUE WINDOWS.
18. VEGETATION SHALL BE SELECTED AND MAINTAINED IN SUCH A MANNER AS TO ALLOW IMMEDIATE ACCESS TO ALL HYDRANTS, VALVES, FIRE DEPARTMENT CONNECTIONS, PULL STATIONS, EXTINGUISHERS, SPRINKLER RISERS, ALARM CONTROL PANELS, RESCUE WINDOWS, AND OTHER DEVICES OR AREAS USED FOR FIREFIGHTING PURPOSES. VEGETATION OR BUILDING FEATURES SHALL NOT OBSTRUCT ADDRESS NUMBERS OR INHIBIT THE FUNCTIONING OF ALARM BELLS, HORNS, OR STROBES.
19. DUMPSTERS AND TRASH CONTAINERS LARGER THAN 1.5 CUBIC YARDS SHALL NOT BE STORED IN BUILDINGS OR PLACED WITHIN 5 FEET OF COMBUSTIBLE WALLS, OPENINGS OR COMBUSTIBLE ROOF EAVE LINES UNLESS PROTECTED BY AN APPROVED SPRINKLER SYSTEM.
20. ANY FUTURE MODIFICATION TO THE APPROVED FIRE MASTER PLAN OR APPROVED SITE PLAN, INCLUDING BUT NOT LIMITED TO ROAD WIDTH, GRADE, SPEED HUMPS, TURNING RADII, GATES OR OTHER OBSTRUCTIONS, SHALL REQUIRE REVIEW, INSPECTION, AND APPROVAL BY THE OCFA.
21. APPROVAL OF THIS PLAN SHALL NOT BE CONSTRUED AS APPROVAL OF ANY INFORMATION OR PROJECT CONDITIONS OTHER THAN THOSE ITEMS AND REQUIREMENTS IDENTIFIED IN OCFA GUIDELINE B-09 AND RELATED PORTIONS OF THE CFC AND CBC. THIS PROJECT MAY BE SUBJECT TO ADDITIONAL REQUIREMENTS NOT STATED HEREIN UPON EXAMINATION OF ACTUAL SITE AND PROJECT CONDITIONS OR DISCLOSURE OF ADDITIONAL INFORMATION.

PROJECT SPECIFIC REQUIREMENTS:

22. THIS PROPERTY IS LOCATED IN A FIRE HAZARD SEVERITY ZONE OR WILDLAND-URBAN INTERFACE FIRE AREA AND STRUCTURES ARE SUBJECT TO THE CONSTRUCTION REQUIREMENTS PRESCRIBED IN CHAPTER 7A OF THE 2010 CBC. CONSTRUCTION MATERIALS/METHODS ARE REVIEWED AND INSPECTED BY THE BUILDING DEPARTMENT.
23. ONE OR MORE STRUCTURES SHALL ON THIS PLAN ARE LOCATED ADJACENT TO A FUEL MODIFICATION AREA. CHANGES TO THE FUEL MODIFICATION ZONE LANDSCAPING, NEW STRUCTURES, OR ADDITION/ALTERATION TO EXISTING STRUCTURES REQUIRES REVIEW AND APPROVAL BY THE OCFA.
24. AN NFPA 13D AUTOMATIC FIRE SPRINKLER SYSTEM WILL BE INSTALLED IN EACH RESIDENTIAL STRUCTURE.
25. FIRE FLOW MODELING SHALL BE PROVIDED TO OCFA TO DEMONSTRATE 1,500 GPM @20 PSI FOR A 2-HOUR DURATION PRIOR TO ISSUANCE OF PRECISE GRADING PERMIT. FIELD VERIFICATION OF FIRE FLOW AT 1,500 GPM @ 20 PSI FOR 2-HOUR DURATION SHALL BE REQUIRED PRIOR TO LUMBER DROP BEING ALLOWED ONTO SITE.

COMBUSTIBLE CONSTRUCTION LETTER

July 23, 2013

Planning and Development Services Section
Orange County Fire Authority
1 Fire Authority Road
Irvine, CA. 92602

Subject: Combustible Construction Letter OCFA Service Request Number 190617 , Cielo Vista, TTM 17341, Unincorporated Orange County, CA.

The purpose of this letter is to notify you that tentative tract map 17341 shall install all required paved fire access roads that meet OCFA access requirements per the approved plans. All fire hydrants and water supply for firefighting purposes shall be installed per the approved plans and shall meet all fire flows requirements, prior to any combustible construction materials being delivered for construction.

Should you have any questions or need further information, please contact me at (949) 521-0852

Sincerely,

David Oatis

David Oatis, Firesafe Planning Solutions, as agent for: Cielo Vista

FIRE LANE ENFORCEMENT LETTER

July 23, 2013

Planning and Development Services Section
Orange County Fire Authority
1 Fire Authority Road
Irvine, CA. 92602

Re: Cielo Vista, Unincorporated Orange County, CA. OCFA Service Request Number 190617, Parking Enforcement Plan

The fire lane parking enforcement plan for the above referenced project is stated as follows:

All fire lanes within tentative tract map 17341 shall be maintained and in no event shall parking be permitted along any portion of a street or drive that required fire lanes or any area designated as a fire lane for turn-around or drive through purposes.

The Cielo Vista Homeowner's Association shall adopt reasonable rules and regulations regarding the parking of vehicles along the streets, roads and or drives within the project that are not in conflict with applicable law.

In furtherance thereof, the Cielo Vista Homeowner's Association, through its officers, committees and agents will establish the "parking" and "no parking" areas within the property in accordance with Section 22658.2 of the California Vehicle Code and OCFA Guideline B-09. The law shall be enforced through such rules and regulations by all lawful means, including, written warnings, citing, levying fines and towing vehicles in violation.

The Cielo Vista Homeowner's Association will contract with a certified patrol and towing company to remove vehicles that violate no parking restrictions. First time violators will receive a written warning and with subsequent violations, the vehicle shall be subject to towing. The vehicle owner shall be responsible for all costs incurred in remedying such violation, including without limitation towing cost, citations and legal fees.

Sincerely,

David Oatis

David Oatis, Firesafe Planning Solutions, as agent for: Cielo Vista

LEGEND

- OCFA FIRE ENGINE
- OCFA HOSE PULL REQUIREMENT (300' MAX)
- INDICATES FIRE ACCESS ROUTES
- OCFA HAMMERHEAD
- EX FH — EXISTING FIRE HYDRANT BY PRIOR APPROVAL
- FH — PROPOSED PUBLIC FIRE HYDRANT
- BLUE DOT REFLECTIVE HYDRANT MARKER PER OCFA STANDARDS, 2 FEET FROM CENTERLINE
- 20 — LOT NUMBER
- INDICATES O.C.F.A. REQUIRED TURNING RADII (R=30', R=17')

CONSTRUCTION REQUIREMENTS:
All structures within the Cielo Vista project will be constructed per the 2010 California Residential Code Section R327. Additionally all structures shall be protected with NFPA 13-D Automatic Fire Sprinklers. Refer to the Cielo Vista Fire Protection Plan OCFA Service Request 184101 for specific code section requirements for each lot.

LOTS WITH FIRE SPRINKLERS ATTIC PROTECTION:
Lots 39-42, 49-52, 69, 70, 85-88 and 96 thru 112 shall be protected with NFPA 13-D Automatic Fire Sprinklers including attics and small spaces.

CONSTRUCTION NOTES

1. INSTALL FIRE LANE ENTRY SIGN PER DETAIL
2. INSTALL 'NO PARKING - FIRE LANE' SIGN PER DETAIL
3. INSTALL 'BEGIN NO PARKING FIRE LANE' SIGN PER DETAIL
4. INSTALL BLUE FIRE HYDRANT MARKER PER OCFA GUIDELINE B-09

SCANNED COPY OF OCFA APPROVAL STAMP

ORANGE COUNTY FIRE AUTHORITY
REVIEWED by Planning & Development
Approval subject to field inspection and required test, notations hereon, conditions in correspondence and conformance with applicable regulations. The stamping of these plans shall not be held to permit or approve the violation of any law.
OCFA Service Request # 190617
Fee Codes: 02 195, 05472
Plan Type: FIRE MASTER REVISION
By: BSullivan Date: 7/26/13
(Employee # 2060)
REVISED 186560
ONLY STAMPED SHEETS REVIEWED BY ORANGE COUNTY FIRE AUTHORITY
Call 48 hrs. in advance to schedule inspections:
714-573-6150

NO.	DESCRIPTION
1	ADDED LOTS 85 AND 86, SHORTENED CUL DE SAC ON STREET B

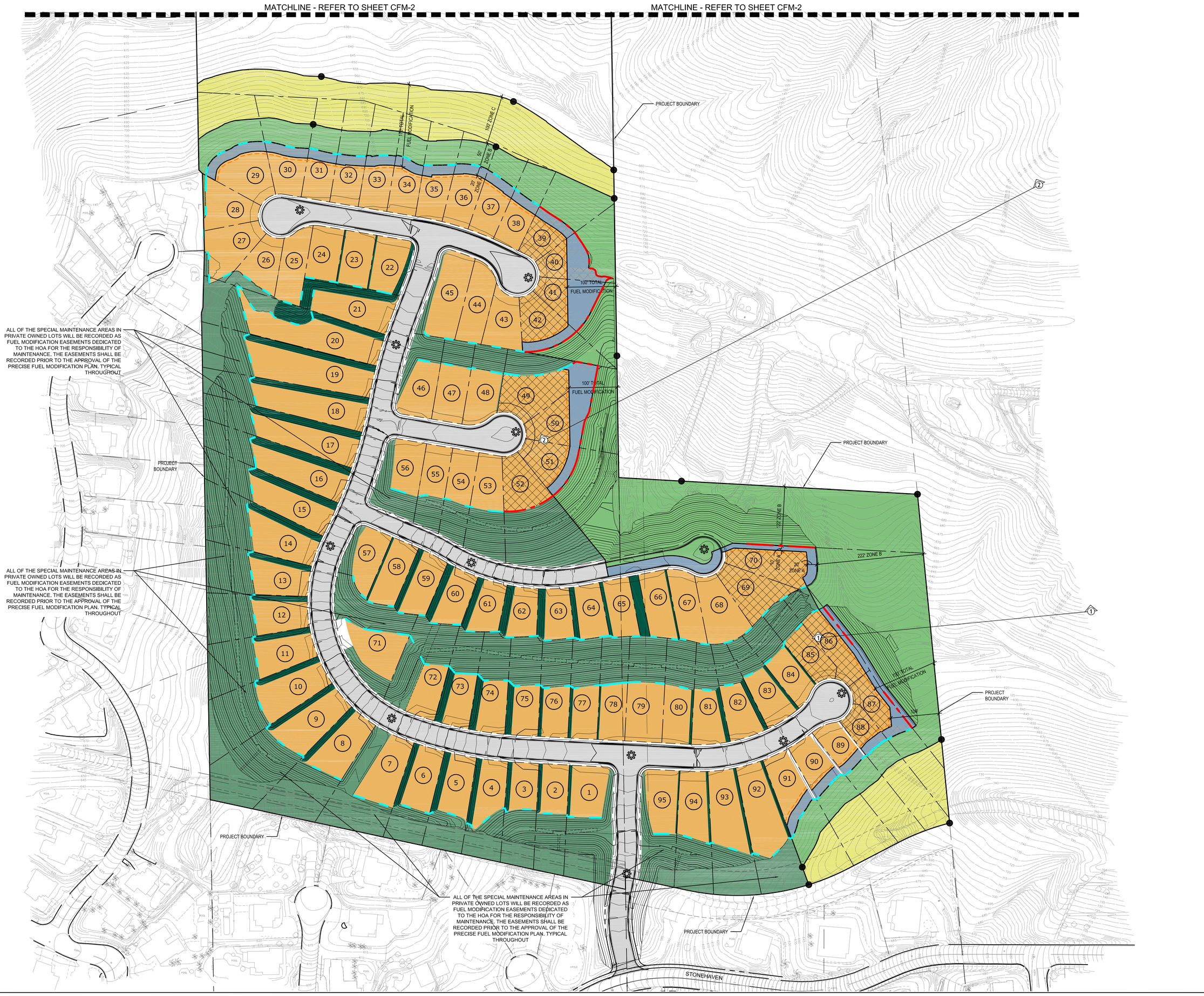
REVISION

PREPARED BY:
firesafe :: PLANNING SOLUTIONS
302 N. El Camino Real, Suite 202
San Clemente, CA 92672
(949) 240-5911 (949) 240-8291 FAX

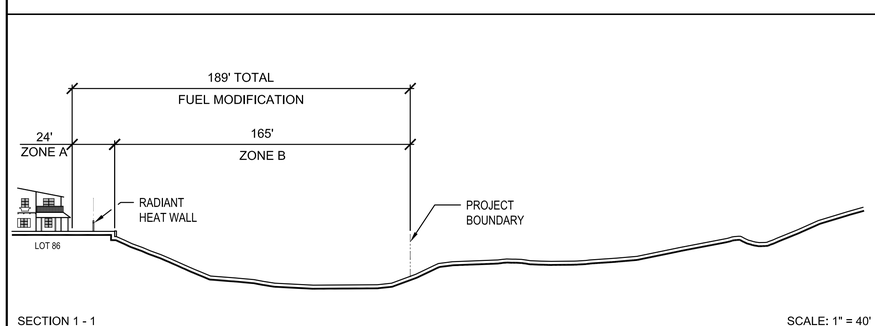
PREPARED FOR:
SAGE COMMUNITY GROUP
3 CORPORATE PLAZA, SUITE 102
NEWPORT BEACH, CA 92660
(949) 644-3514

CIVIL ENGINEER:
CHARLES HARTMAN & ASSOC.
PLANNING - ENGINEERING - SURVEYING
27127 CALLE ARROYO - SUITE 1904
SAN JUAN CAPISTRANO, CA 92675 (949) 661-6695

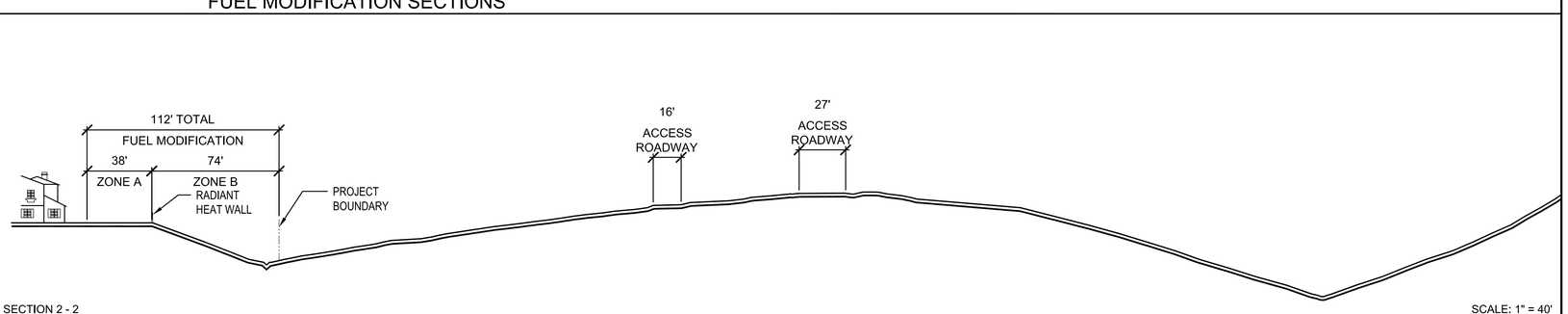
FIRE MASTER PLAN
CIELO VISTA
Tentative Tract Map 17341
(PREVIOUSLY APPROVED S.R. 186560)
S.R. 190617
UNINCORPORATED ORANGE COUNTY



FUEL MODIFICATION SECTIONS



SECTION 1 - 1 SCALE: 1" = 40'



SECTION 2 - 2 SCALE: 1" = 40'

⚠1 ALTERNATE MEANS & METHODS REQUEST LETTER

firesafe PLANNING SOLUTIONS

December 7, 2012

Bret Anderson
Senior Fire Prevention Specialist
Planning and Development Services Section
Orange County Fire Authority
1 Fire Authority Road
Irvine, CA 92856-0086

SUBJECT: Cielo Vista - Vesting Tentative Tract Map 17341
Alternate Means and Methods for Fuel Modification
Yorba Linda, California
OCFA SR# 184100

On behalf of the Sage Development Group, we hereby submit a request for use of Alternate Means and Methods (AM&M), per the 2010 California Fire Code. Our request relates to decreased total Fuel Modification distance.

The following information is being provided to assist in your evaluation of this proposed AMM.

A. Project information:

- Project name: Cielo Vista
- Contact person: David Oatis, Firesafe Planning Solutions, (949) 240-5911
- 302 N. El Camino Real Suite 202, San Clemente, CA 92672
- Current landowner: Amos A. Travis & Virginia Richards Trust
- Project Agent: Sage Community Group
- Development type: Single Family Residences

B. Code Sections for which the modification is requested:

- 2010 California Fire Code (CFC) Section 104.9 Alternate Materials and Methods.

C. General Description:

The Cielo Vista project is located within Orange County, adjoining the City of Yorba Linda. Regional access to the project site is provided via State Route (SR) 91 (91 Freeway) located approximately two miles southwest of the site. The nearest arterial to the project site is Yorba Linda Boulevard, which is located approximately 0.25 miles to the south of the site. From Yorba Linda Boulevard, the site is accessed by Via del Agua and by San Antonio through Aspen Way. The Casino Ridge residential community adjoins the project site to the north with open space area between the Cielo Vista development area and the Casino Ridge community. To the south and west Cielo Vista is adjoined by existing residential neighborhoods. An undeveloped parcel commonly referred to as the Murdock Property, adjoins the project site on the east with open space in between.

D. Fuel Modification Zones

The Cielo Vista project has open space areas to the north and east. Along these areas there will be Fuel Modification from a minimum of 100' to 170'. The majority of the Fuel Modification will be a total of 170' consisting of a minimum 10' to 20' Zone A, 50' to 159' Zone B and a 1' to 100' Zone C in these areas. The northwestern edge of the project directly adjoins an existing maintained development. In this area the total Fuel Modification is approximately 41' up to the Project Boundary, with a 10' Zone A and 31' Zone B. Along the eastern edge of the project there are limited areas where the total Fuel Modification will be a minimum of 100'. In this area the Fuel Modification will be comprised of only wet zones with a Zone A of 10' to 95' and a Zone B of 5' to 122'. There will also be a radiant heat wall along the minimum 100' fuel modification.

E. Hardship:

Our hardship is: Attempts to obtain off-site easements for Fuel Modification along the eastern boundary have been unsuccessful to date which has limited the total Fuel Modification distance within the project boundary.

F. Proposed alternative fire protection measures:

- A Radiant Heat wall will be provided along the perimeter of the Fuel Modification to the east, along the 100' of Fuel Modification.
- All structures adjoining the Fuel Modification shall have low profile vents facing the fuel modification for all attic ventilation.
- All structures with the Cielo Vista community will be protected with NFPA 13-D Automatic Fire Sprinklers.
- Structures with deficient Fuel Modification (Lots 39-42, 49-52, 69, 70, and 85 - 88) shall be protected with NFPA 13-D Automatic Fire Sprinklers including attics and small spaces.
- Areas where the Fuel Modification is a minimum of 100' shall be comprised entirely of wet Zones A and B.
- All new landscaping plans proposed within the Cielo Vista Community (development areas and fuel modification zones) shall be devoid of eucalyptus, juniper, cedar, cypress, acacia (except for acacia desert carpet) and pine trees, California sagebrush, chamise, buckwheat and black and white sage (Salvia spp.). Additionally California Fescue (Festuca californica) shall not be planted or included within any seed mix. This landscape palette restriction is to be recorded as part of all applicable CC&Rs documents, and applies to all interior areas.

Thank you in advance for your consideration of this proposed AMM request. Please feel free to call me with any questions or requests for additional information.

Sincerely,

David Oatis
Firesafe Planning Solutions for:
Sage Development Group

ALTERNATE MEANS & METHODS APPROVAL LETTER

ORANGE COUNTY FIRE AUTHORITY
Fire Prevention Department
P. O. Box 57115, Irvine, CA 92619-7115 • 1 Fire Authority Road, Irvine, CA 92602
Planning and Development Services • www.ocfa.org • (714) 573-6100 / Fax (714) 368-8843

March 13, 2013

Firesafe Planning Solutions
302 N. El Camino Real, Suite 202
San Clemente, 92672

Subject: **Alternative Materials and Methods Response**
Service Request # 184100
Cielo Vista Conceptual Fuel Modification
Tentative Tract 17341
County of Orange (Adjoining Yorba Linda)

Dear Applicant,

In accordance with Section 104.9 of the 2010 California Fire Code (CFC), you are requesting an Alternative Materials and Methods (AM & M) for the proposed project detailed below. We have reviewed your AM & M request and OCFA Fuel Modification Guideline C-05 and are granting approval upon the conditions described in your request letter and this OCFA response letter.

Project Description:

The Cielo Vista project is a future community consisting of 112 residential single family homes. The community will be bordered on the North and the East by a wildland interface. On the West and South sides of the proposed community there will be a combination of re-vegetated irrigated slopes and natural vegetation occurring between the proposed community and the existing built-out residential communities. The land is designated on the CalFire Fire Hazard Severity Zone (FHSZ) map as a Very High, Fire Hazard Severity Zone which occurs in a State responsibility Area (SRA).

Code Intent:

2010 California Fire Code (CFC), Chapter 49, and OCFA Vegetation Management Guideline Technical Design for Fuel Modification C-05.

Hardship:

The developer states they are unable to obtain off-site easements for the purposes of fuel modification. The want to maximize the number of buildable lots within their tract boundary and are using a performance based approach to build specific lots as close as possible to the tract boundary.

Justification and Conditions:

1. Technical fire modeling of the available fuels was projected and the results are in the technical report. The technical report indicates that the width of the maintained fuel modification zones will protect the structures from direct flame impingement and from receiving radiant and convective heat sufficient to ignite the structures.
2. The land is designated on the CalFire Fire Hazard Severity Zone (FHSZ) map as a Very High, Fire Hazard Severity Zone in a State responsibility Area (SRA). This requires all structures to be constructed with all code sections from Chapter 7A of the CBC/Residential Code 327. These code design construction requirements are in place to help prevent the intrusion of flame and embers and to prevent exterior ignition of the homes.
3. Block wall fencing is strategically placed where fuel modification zones are not 170 feet in width. This will help reduce the spread of fire, to reduce the direct impacts of flame, heat, and embers on the structures and to assist emergency responders in fighting the fire.
4. Sprinkler system coverage shall be extended into the attic spaces of perimeter home lots 39-42, 49-52, 69, 70, 84 and 87. These homes are the first homes in the community that will be subjected to unobstructed flying embers. This will be another layer of protection if embers do find their way into attic spaces of perimeter homes.
5. Selected structures will be required to have low profile ember intrusion attic vents as seen in the legend on the plan.
6. Areas in which the fuel modification zone is less than 170 feet or have a reduced Zone "A" width are compensated through providing an increased irrigated Zone "B" width.

OCFA Response:

Your request has been approved as allowed by Section 104.9 of the 2010 CFC.

Respectfully:
Bret Anderson
Senior Fire Prevention Specialist

Concurrence
Vahid Toossi, P.E.
Fire Protection Engineer

SYMBOL LEGEND

ACCESS POINT
Location of emergency and maintenance access easements within every 500 lineal feet of the fuel modification area. Access easements shall have a minimum 10-foot width; alternatively, 5-foot wide easements provided every 250 feet may be acceptable. Any gates installed into the fuel modification area and shall be a minimum of 36 inches wide. The easements shall be maintained free of vegetation or any structures greater than 5 inches in height.

IDENTIFICATION MARKER
Permanent identification markers shall be constructed to identify the limits of applicable Fuel Modification zones. marker design shall be 2" dia. x 8'-0" long galvanized pipe, embed minimum 2'-6" into solid ground. 1" reflector tape 1 tape band at top for Zone B and 2 tape bands at top for Zone C. Expose pipe 2'-0" above vegetation minimum.

FUEL MODIFICATION SECTION LOCATIONS:
Refer to this sheet for Fuel Modification Sections.

FUEL MODIFICATION LIMITS

RADIANT HEAT WALL
Constructed per the requirements on the detail provided on this plan.

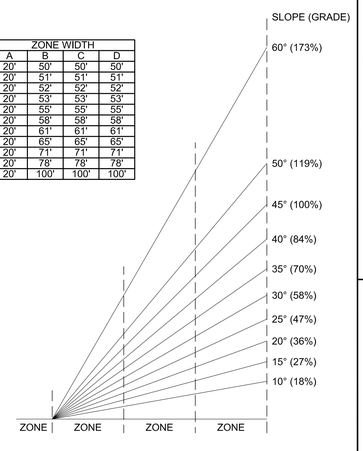
LOW PROFILE VENTING
Structures adjoining the Fuel Modification shall have low profile vents on the side facing the fuel modification as indicated on this plan.

PRIVATE HOMEOWNER PAD REAR YARD FENCING
Indicates location of rear yard fence to separate the private homeowner pad and the slopes which will be maintained by the HOA. Final design and location by Landscape Architect, not a part of this review.

INCLINE MEASUREMENT

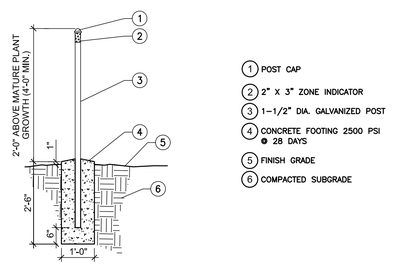
ATTACHMENT 3
INCLINE MEASUREMENT FOR SELECTED SLOPES
(SEE ATTACHMENT 4)

SLOPE	ZONE WIDTH A	B	C	D
0°	20'	50'	50'	50'
10°	20'	51'	51'	51'
15°	20'	52'	52'	52'
20°	20'	53'	53'	53'
25°	20'	55'	55'	55'
30°	20'	58'	58'	58'
35°	20'	61'	61'	61'
40°	20'	65'	65'	65'
45°	20'	71'	71'	71'
50°	20'	78'	78'	78'
60°	20'	100'	100'	100'



IDENTIFICATION MARKER DETAIL

ATTACHMENT 4
ZONE MARKER DETAILS
(MARKER DISTANCE SHALL BE INCREASED ON SLOPES TO ACCOMMODATE INCLINE MEASUREMENTS IN ACCORDANCE WITH ATTACHMENT 3)



PLANT REMOVAL LIST

ATTACHMENT 7
UNDESIRABLE PLANT SPECIES (TARGET SPECIES)
FIRE PRONE PLANT SPECIES (MANDATORY REMOVAL) FROM FUEL MANAGEMENT ZONES

Botanical Name	Common Name
Cynara Cardunculus	Artichoke Thistle
Ricinus Communis	Castor Bean Plant
Cirsium Vulgare	Wild Artichoke
Brassica Nigra	Black Mustard
Silybum Marianum	Milk Thistle
Sacsola Austalls	Russian Thistle/Tumblewood
Nicotiana Bigelevil	Indian Tobacco
Nicotiana Glauca	Tree Tobacco
Lactuca Serriola	Prickly Lettuce
Conyza Canadensis	Horseweed
Heterothaca Grandiflora	Telegraph Plant
Anthemix Cotula	Mayweed
Urtica Urens	Burning Nettle
Cardaria Draba	Noary Cress, Perennial Peppergrass
Brassica Rapa	Wild Turnip, Yellow Mustard, Field Mustard
Adenostoma Fasciculatum	Chamise
Adenostoma Sparsifolium	Red Shanks
Cortaderia Selloana	Pampas Grass
Artemisia Californica	California Sagebrush
Eriogonum Fasciculatum	Common Buckwheat
Salvia Mellifera	Black Sage
Ornamental:	
Cortaderia	Pampas Grass
Cupressus sp	Cypress
Eucalyptus sp	Eucalyptus
Juniperus sp	Juniper
Pinus sp	Pine

ADDITIONAL NOTE FOR CIELO VISTA
All new landscaping plans proposed within the Cielo Vista Community (development areas and fuel modification zones) shall be devoid of eucalyptus, juniper, cedar, cypress, washingtonia robusta (mexican fan palm), acacia (except for acacia desert carpet) and pine trees, California sagebrush, chamise, buckwheat and black and white sage (Salvia spp.). Additionally California Fescue (Festuca californica) shall not be planted or included within any seed mix. This landscape palette restriction is to be recorded as part of all applicable CC&Rs documents, and applies to all interior areas, including Private Homeowner Lots.

ADDITIONAL NOTES

- THERE IS NO EXISTING FEDERALLY PROTECTED ANIMAL OR BIRD HABITAT WITHIN THE FUEL MODIFICATION AREAS WE ARE PROPOSING.
- THERE IS NO RESTRICTION REGARDING THE DATES OF PLANT DENSITY THINNING THROUGHOUT THE YEAR.
- MAINTENANCE IS REQUIRED IN THE LATE SPRING AND EARLY FALL EACH YEAR.
- THE PROJECT LANDSCAPE ARCHITECT HAS RESEARCHED THE SOIL AND STEEPNESS OF THE SLOPES AND THERE ARE NO GEOLOGICAL ISSUES PREVENTING THE REQUIRED MAINTENANCE TO BE PERFORMED.
- A 20' WIDE, 13'-6" VERTICAL CLEARANCE SHALL BE MAINTAINED AT ALL TIMES ON FIRE ACCESS ROADS. REFER TO CIELO VISTA FIRE MASTER PLAN OCFA REVISION SR#190617, PREVIOUSLY APPROVED SR#185955.
- THE CIELO VISTA COMMUNITY HOA SHALL JOIN THE FIREWISE COMMUNITIES/USA PROGRAM THROUGH ORANGE COUNTY FIRE AUTHORITY LIAISON.

⚠1 FUEL MODIFICATION LEGEND

ZONE A - NON-COMBUSTILBE CONSTRUCTION:
10'-0" to 95'-0" setback zone for non-combustible construction only. Zone A shall be maintained by the Homeowners Association.

ZONE B - WET ZONE (100% REMOVAL UNDESIRABLE SHRUBS):
First 5'-0" to 186'-0" from Zone A. Zone B shall be cleared of all undesirable plant species, irrigated, and planted with species from Attachment 8. Exceptions to save desirable species may be submitted for approval by the OCFA on a site-specific basis.

ZONE C - THINNING ZONE (50% THINNING NATIVE SHRUBS):
21'-0" - 100'-0" out from Zone B. Zone C shall be non-irrigated and requires horizontal and vertical spacing of plant groups in accordance with Attachment 6 and removal of all dead and dying vegetation and undesirable species from Attachment 7. Minimum thinning percentage of plant removal is 50%. Zone C area shall be maintained the Homeowners Association.

SPECIAL MAINTENANCE AREA (SMA)- WET ZONE:
The Special Maintenance Areas have maintenance requirements to reduce the chances of ignition from wildfires. They need maintenance just as fuel modification zones do and shall be maintained on a year round basis, with removal of all dead and dying plant material, replacement of dead or diseased species with plant material with the same growth characteristics from the approved landscape plans. Irrigation shall be verified on a regular basis to ensure it is in a working a condition and the plants shall be irrigated as necessary to keep them healthy with their appropriate moisture content. A copy of the approved Landscape Plans shall be provided to the HOA by the developer and remain on record indefinitely with the HOA. Copies of plans shall be provided to the contracted maintenance company. It is the responsibility of the HOA to forward a copy of the approved Landscape Plans to any new property management company. The HOA shall inspect the special maintenance areas twice a year to ensure the special maintenance areas retain the original design of the areas.
The following are further Special Maintenance Area (SMA) requirements:
- Other than trees, a large percentage of the special maintenance area shall consist of a ground cover that naturally grows no taller than 2 feet in height.
- The areas are completely irrigated and have plants that need irrigation to retain healthy fuel moisture.
- Any dead and dying specimens and branches shall be removed.
- Leaf litter on top of vegetative cover shall be removed.
- Landscape design Plans shall be retained by the HOA indefinitely and the slopes shall always remain as they were designed.
- As plants migrate or new plants seed-in, those shall be removed to retain the original design.
- Future changes to slope designs shall be approved by OCFA.
- The maintenance requirements of the special maintenance areas shall be factored into the funding with the fuel modification zones.
- Special Maintenance Areas shall be designed and also maintained as to not provide direct flame or an excessive amount of radiant heat on structures.
- Special Maintenance Areas will have a limited use of native grasses as approved by OCFA.

PRIVATE HOMEOWNER SIDE YARD SLOPES:
Planting Plans for the private homeowner side yard slopes shall be reviewed by the HOA and shall be devoid of eucalyptus, juniper, cedar, cypress, washingtonia robusta (mexican fan palm), acacia (except for acacia desert carpet) and pine trees, California sagebrush, chamise, buckwheat and black and white sage (Salvia spp.). Additionally California Fescue (Festuca californica) shall not be planted or included within any seed mix as recorded within the CC&R's.

CONSTRUCTION REQUIREMENTS:
All structures within the Cielo Vista project will be constructed per the 2010 California Residential Code Section R327. Additionally all structures shall be protected with NFPA 13-D Automatic Fire Sprinklers. Refer to the Cielo Vista Fire Protection Plan OCFA Service Request 184101 for specific code section requirements for each lot.

LOTS WITH FIRE SPRINKLERS ATTIC PROTECTION:
Structures with deficient fuel modification Lots 39-42, 49-52, 69, 70 and 85-88 shall be protected with NFPA 13-D Automatic Fire Sprinklers including attics and small spaces.Lots 96 - 112 shall be protected with NFPA 13-D Automatic Fire Sprinklers including attics and small spaces to mitigate for roadway access longer than 800'

SCALE: 1" = 80'-0"
0 80' 160' 240' 320'
NORTH

CIELO VISTA - CONCEPTUAL FUEL MOD	PLAN SET: "B"
PLAN CONTROL	DATE: 07/23/2013

OCFA APPROVAL

SCANNED COPY OF OCFA APPROVAL STAMP

ORANGE COUNTY FIRE AUTHORITY
REVIEWED by Planning & Development
Approval subject to field inspection and required test, notations hereon, conditions in correspondence and conformance with applicable regulations. The stamping of these plans shall not be held to permit or approve the violation of any law.
OCFA Service Request # 188168
Fee Codes: 120, 422
Plan Type: Conceptual Fuel Mod
By: B. Anderson Date: 8-27-13
(Employee # 3776)
Division 70 Sr. # 184100
ONLY STAMPED SHEETS REVIEWED BY ORANGE COUNTY FIRE AUTHORITY
Call 48 hrs. in advance to schedule inspections:
714-573-6150

NO.	DATE	REVISIONS
⚠1	7/23/2013	Site plan revised to allow for lots 85 and 86 to be buildable, and lots have bee renumbered. Fuel Modification Zones and interior Special Maintenance Areas have been revised to reflect new site plan. AMM letter revised to match revised lot numbers.
2		
3		
4		

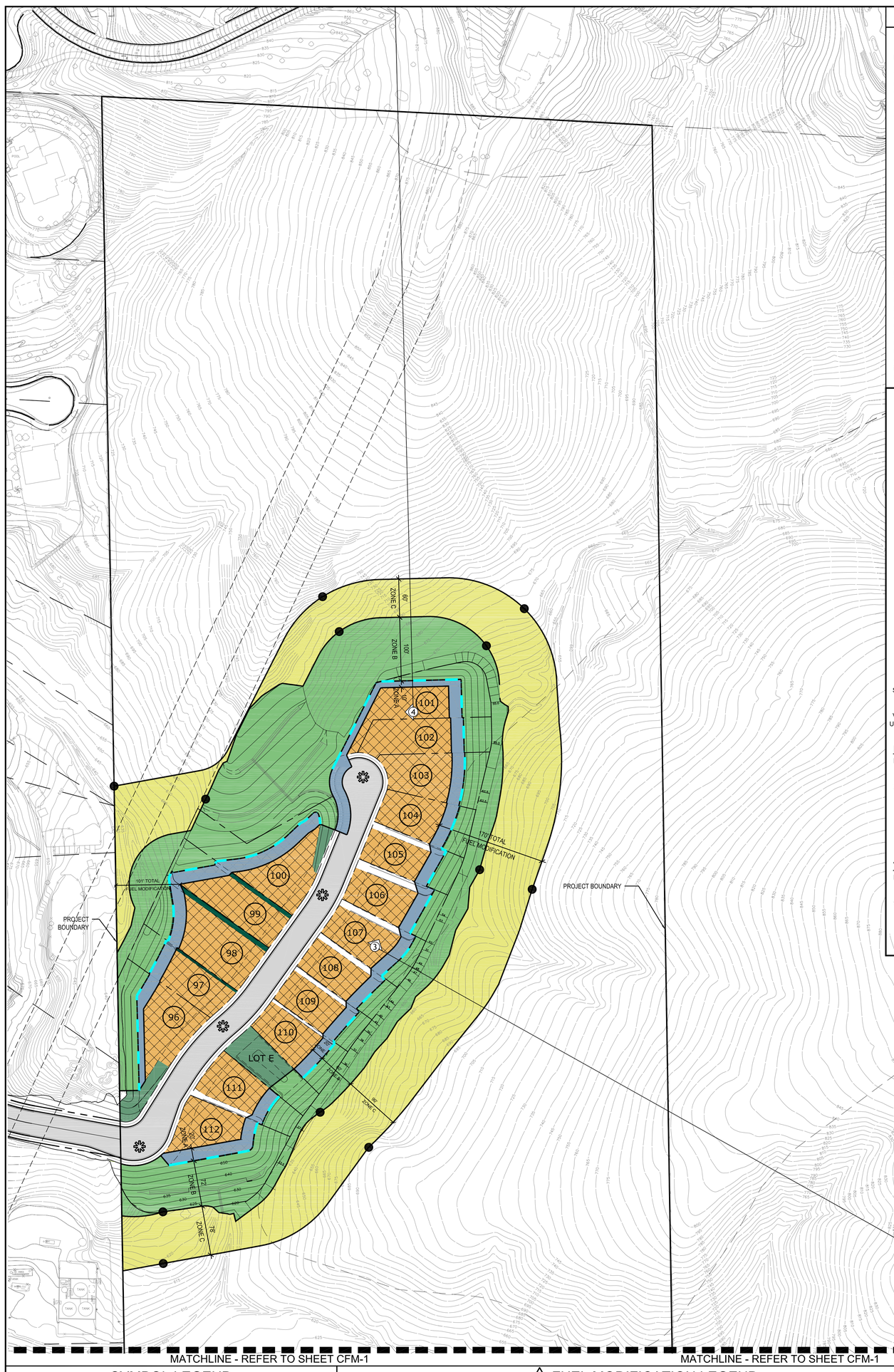
PREPARED FOR:
SAGE COMMUNITY GROUP
3 CORPORATE PLAZA, SUITE 102
NEWPORT BEACH, CA 92660
PHONE: (949) 644-3514

ENGINEER:
CHARLES HARTMAN & ASSOC.
PLANNING - ENGINEERING - SURVEYING
27127 CALLE ARROYO - SUITE 1904
SAN JUAN CAPISTRANO, CA 92675 (949) 661-6695

PREPARED BY:
firesafe PLANNING SOLUTIONS
302 N. EL CAMINO REAL, SUITE 202
SAN CLEMENTE, CA 92672
(949) 240-5911 (949) 240-8291 FAX
WWW.FIRESAFEPLANNING.COM

CONCEPTUAL FUEL MODIFICATION
CIELO VISTA
VTTM NO. 17341 - LOTS 1-112
UNINCORPORATED ORANGE COUNTY, CA
OCFA REVISION SR# 188168 - PREVIOUSLY APPROVED184100
ORANGE COUNTY FIRE AUTHORITY

SHEET
CFM-1
OF 2



OCFA MAINTENANCE GUIDELINES

ATTACHMENT 5
SAMPLE CC&R MAINTENANCE LANGUAGE

It is recommended that the following language be included in the CC&Rs recorded for a common interest development:

The duty of the homeowners' association to perform "Fire Prevention Maintenance" (as defined below) for all Fuel Modification Zones and manufactured interior slopes within the development shall be included as an express obligation in the recorded CC&Rs for the development. Similarly, each Owner whose Lot (or Condominium) is subject to Fuel Modification Zone restrictions (e.g., non-combustible structure setback, etc.) shall be obligated to comply with such restrictions.

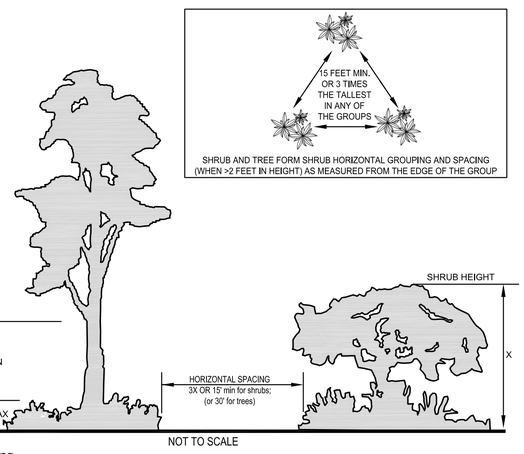
1. The OCFA will be designated as a third party beneficiary of a homeowner association's duty to perform "Fire Prevention Maintenance" (as defined below) for all portions of the Association Property (or Common Area) that constitute fuel modification zones and designated interior/manufactured slopes to be maintained by the homeowners' association, and of any Owner's duty to comply with any fuel modification zone restrictions applicable to their lot (or condominium). Additionally, OCFA shall have the right, but not the obligation, to enforce the homeowners' association's duty to perform such Fire Prevention Maintenance, and to enforce compliance by any owner with any fuel Modification zone restrictions applicable to their lot (or Condominium). In furtherance of such right the OCFA shall be entitled to recover its costs of suit, including its actual attorneys' fees, if it prevails in an enforcement action against a homeowners' association and/or an individual owner. (A sample third party beneficiary provision to be incorporated into the CC&Rs is attached hereto as Addendum "1").

2. As used herein, "Fire Prevention Maintenance" shall mean the following:
   (i) All portions of the Association Property (or Common Area) that constitute fuel modification zones or designated interior/manufactured slopes shall be regularly maintained by the homeowners association on a year-round basis in accordance with the fuel modification plan on file with the property manager for the development.
   (ii) The irrigation system for fuel modification zones or designated interior/manufactured slopes shall be kept in good condition and proper working order at all times. The irrigation system shall not be turned off except for necessary repairs and maintenance.

ADDENDUM "1"

Enforcement by the OCFA: The OCFA is hereby designated as an intended third party beneficiary of the Association's duties to perform "Fire Prevention Maintenance" for all portions of the Association Property (or Common Areas) consisting of fuel modification zones or designated interior/manufactured slopes in accordance with the fuel modification plan, and of each Owner's duty to comply with any fuel modification zone or designated interior/manufactured slopes restrictions applicable to his Lot (or condominium) as set forth in the fuel modification plan. In furtherance thereof, the OCFA shall have the right, but not the obligation, to enforce the performance by the association of its duties and any other fire prevention requirements which were imposed by the OCFA or other public agency as a condition of approval for the development (e.g. , prohibition of parking in fire lanes, maintenance of the blue reflective markers indicating the location of fire hydrants, etc.) and shall also have the right, but not the obligation, to enforce compliance by any owner with any fuel modification zone or designated interior/manufactured slopes restrictions applicable to his lot (or condominium) as set forth in the fuel modification plan. If in its sole discretion, the OCFA shall deem it necessary to take legal action against the association or any owner to enforce such duties or other requirements, and prevails in such action, the OCFA shall be entitled to recover the full costs of said action including its actual attorneys' fees, and to impose a lien against the association property, or an owner's lot (or condominium), as the case may be, until said costs are paid in full.

ATTACHMENT 6
HORIZONTAL SPACING AND VERTICAL SEPARATION REQUIREMENTS FOR INSTALLATION AND MAINTENANCE IN ALL FUEL MODIFICATION ZONES



Horizontal Spacing

Less than 2 Feet in Height (Ground Cover / Grasses):
- No horizontal spacing or vertical separation is required. Ground cover / Grasses should cover the entire ground between groups of shrubs or trees. Ground cover shall not exceed 2 feet in height.

2 Feet in Height or Greater:

Shrub and Tree Group Size:
- All Shrubs and Trees can be in groups of 3 specimens or less. No horizontal spacing is required inside the group.

Shrub / Tree-form Shrub Group Spacing:
- Groups of shrubs shall be spaced by the greater of the following two measurements: A distance of 15 feet minimum (or) 3 times the height of the tallest specimen in any of the groups.
- No vegetation over 2 feet in height is allowed within 15 feet from the edge of tree canopy(s).

Tree Group Spacing:
- Groups of Trees shall be spaced by a distance of 30 feet minimum regardless of height.

Vertical Separation

Less than 10 Feet in Height:
- When the fuel modification zone is within 30 feet of the structure, a vertical separation of 2 feet minimum is required from the vegetation below.

10 Feet in Height or Greater:
- A vertical separation of 4 feet minimum is required to be maintained from the vegetation below.
- Trees only: All vegetation located underneath trees, shall be a maximum of 2 feet in height.

FUEL MODIFICATION MAINTENANCE NOTES

Zone A – Irrigated Structure Setback Zone (See Attachment 2 of OCFA Guideline C-05) :
The purpose of the setback zone is to provide a defensible space for fire suppression forces and to protect structures from radiant and convective heat. **In no case shall Zone A be less than a 10-foot minimum width at the side-yard condition only. The entire zone is to be located on a level, graded area at the top or base of the slope.**

If Zone A is located within the lot containing the protected structure and another entity is maintaining the B-C zones, it shall be located at the most distal level 10 to 95 feet prior to the beginning of the slope. If Zone A is located outside of the lot containing the protected structure, it shall begin at the lot property line. The latter condition is preferred as it allows for combustible construction within privately owned individual lots. Typically, Zone A will not be approved when proposed more than 100 feet from the protected structure. Zone A may incorporate trails, roadways, and other level noncombustible surfaces that create defensible space for fire crews heat reduction between the protected structure and the fire.

Zone A – Specific Maintenance Requirements:
A. Automatic irrigation systems to maintain healthy vegetation with high moisture content and be regularly irrigated.
B. Pruning of foliage to reduce fuel load, maintain vertical continuity, and removal of plant litter and dead wood in accordance with Attachment 6 of the OCFA Guideline C-05.
C. Complete removal of undesirable plant species (See Attachment 7 of the OCFA Guideline C-05). There is also minimal allowance for retention of selected native vegetation.
D. Plants in this zone shall be highly fire resistant and selected from the Attachment 8 for the setback zone and given geographical area. (Refer to Attachment 8 and Section 3 of the OCFA Guideline C-05).
E. Tree species within Zone A are not allowed within 10 feet of combustible structures (measured from the edge of a full growth crown).
F. Maintenance includes thinning and removal of over-growth, replacement of dead/dying fire resistant plantings, and maintenance of the operation of the irrigation system.
G. Devices that burn solid fuels are not permitted in any fuel modification zone.
H. No combustible construction shall be allowed within Zone A.

Zone B – Irrigated Zone:
This portion of fuel modification consists of irrigated landscaping. This irrigated zone is a minimum of 50 to a maximum of 186 feet in width and may be increased as conditions warrant. The plans must delineate that portion of the fuel modification area that will be permanently and regularly irrigated. The landscape architect shall select plant species, design an irrigation system, and design a maintenance program which sensitively addresses water conservation practices and includes methods of erosion control to protect against slope failure. All irrigation shall be kept a minimum of 20 feet from the drip line of any existing native Quercus (oak) species.

Zone B shall be cleared of all undesirable plant species, irrigated, and planted with species from Attachment 8. Exceptions to save desirable species may be submitted for approval by the OCFA on a site-specific basis.

Zone B – Specific Maintenance Requirements:
A. Groundcover shall be installed and maintained at a height not to exceed 2 feet.
B. In order to maintain proper coverage, native grasses shall be allowed to go to seed. Native grasses shall be cut after annual seeding. Cut heights shall be approximately 4 -inches.
C. Apply irrigation rates to maintain healthy vegetation with high moisture content based on plant species specific needs.
D. All plant species designed for Zone B shall be selected from Attachment 8. Existing fuel modification maintenance programs are limited to the plants listed on the approved plans unless a revision is requested. Planting and maintenance shall be in accordance with planting restrictions from Attachments 6, 7, and 8 of the OCFA Guideline C-05.
E. Groups of trees, tree-form shrubs, and shrubs that naturally exceed 2 feet in height shall be vertically pruned, and horizontally spaced in accordance with Attachment 6 of the OCFA Guideline C-05.
F. Removal of dead and dying vegetation and undesirable plant species from Attachment 7 of the OCFA Guideline C-05.
G. Devices that burn solid fuels are not permitted in any fuel modification zone.
H. Combustible construction is not allowed within Zone B.

Zones C – Thinning Zone – Non-Irrigated:
Zone C is 21 to 100 feet in width and requires horizontal and vertical spacing of plant groups in accordance with Attachment 6 and removal of all dead and dying vegetation and undesirable species from Attachment 7. Minimum thinning percentage of plant removal is 50%.

Thinning zones reduce the fuel load of a wildland area adjacent to the irrigated zones and urban development, reducing heat and ember production from wildland fires. Thinning zones adjoin Zone B and can extend 100 feet or more into wildland areas. The total percentage of vegetation to be removed is determined by many factors, including topography, exposure, vegetation type, and vegetation density. Sometimes a greater thinning percentage than the minimum may be temporarily needed to meet spacing requirements from Attachment 6 or the removal of dead and undesirable species.

Zone C – Specific Maintenance Requirements:
A. Removal of dead and dying vegetation and undesirable plant species from Attachment 7 of the OCFA Guideline C-05.
B. In order to maintain proper coverage, native grasses shall be allowed to go to seed. Native grasses shall be cut after annual seeding. Cut heights shall be approximately 4 inches.
C. Groups of trees, tree-form shrubs, and shrubs that naturally exceed 4 feet in height shall be vertically pruned, and horizontally spaced in accordance with Attachment 6 of the OCFA Guideline C-05.
D. Plants species introduced into Zone C shall be selected from Attachment 8. Existing fuel modification maintenance programs are limited to the plants listed on the approved plans unless a revision is requested. Planting and maintenance shall be in accordance with planting restrictions from Attachments 7 and 8 of the OCFA Guideline C-05. (See Section 3)
E. Reduce fuel loading by reducing fuel in each remaining shrub or tree without substantial decrease in the canopy cover or removal of tree holding root systems. Maintain sufficient cover to prevent erosion without requiring planting. Roots of species listed in Attachment 7 shall be removed from the zone unless an erosion analysis has been performed by a qualified professional or Geologist indicating the need to retain the root systems. Geology reports affecting the fuel modification program shall be provided to the OCFA.

Fuel Modification Implementation & Required Inspections

A. Prior to Rough Grading Permit Issuance: The developer/builder shall have approved/stamped Conceptual or Precise Fuel Modification Plan.

B. Prior to Precise Grading Permit Issuance: The developer/builder shall have approved/stamped Precise Fuel Modification Plan, with applicable note stating maintenance language will be provided in CC&Rs and reviewed prior to issuance of certificate of occupancy (Refer to Attachment 5 of the OCFA Guideline C-05).

C. Prior to Building Permit Issuance: Prior to dropping lumber, the developer/builder shall implement those portions of the approved fuel modification plan determined to be necessary by the OCFA prior to the introduction of any combustible materials into the area. Removal of undesirable species may meet this requirement or a separation of combustible vegetation for a minimum distance of 100 feet from the location of the structure and lumber stock-pile. This generally involves removal and thinning of plant materials indicated on the approved plan. An inspection and/or release letter to the building department is required.

D. Prior to Issuance of Certification of Occupancy: The fuel modification zones adjacent to structures must be installed, irrigated, and inspected. This includes physical installation of features identified in the approved precise fuel modification plan (including, but not limited to, plant establishment, thinning, irrigation, zone markers, access easements, etc). An OCFA Inspector will provide written approval of completion at the time of this final inspection. A written disclosure may be requested by the OCFA Inspector indicating that the homeowner is aware of the fuel modification zone on their land and that they are aware of the associated restrictions of the zone. Copies of buyer or builder signed emergency and maintenance access easements shall be presented upon occupancy final (See Section 1G).

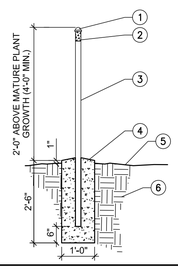
E. Prior to Home Owner Association (HOA) Maintenance Acceptance from Developer:
This inspection/meeting must include the Fire Inspector and the following representatives:
- Landscape design professional
- Installing landscape contractor
- HOA management representative
- HOA landscape maintenance contractor

The fuel modification areas shall be maintained as originally installed and approved. A copy of the approved plans must be provided to the HOA representatives at this time. Landscape professionals must convey ongoing maintenance requirements to HOA representatives. The CC&R language for maintenance must also be provided and approved by the OCFA (Refer to Attachment 5).

F. Annual Inspection and Maintenance: The property owner is responsible for all maintenance of the fuel modification. All areas must be maintained indefinitely in accordance with notes on the approved fuel modification plans. This includes a minimum of two growth reduction maintenance activities throughout all fuel modification zones each year. Perform maintenance sometime within time periods of mid to late spring and once again in early to mid fall. Other activities include maintenance of irrigation systems, replacement of dead or dying vegetation with approved species, removal of dead plant material, removal of trees and shrubs not on the approved plans, and removal of undesirable highly combustible species. The OCFA may conduct inspections of established fuel modification areas. Ongoing maintenance shall be conducted a minimum of twice each year regardless of the dates of these inspections. The property owner shall retain all approved fuel modification plans. The plans should be used to perform the maintenance. As property is transferred, property owners shall disclose the location and regulations of fuel modification zone to the new property owners.

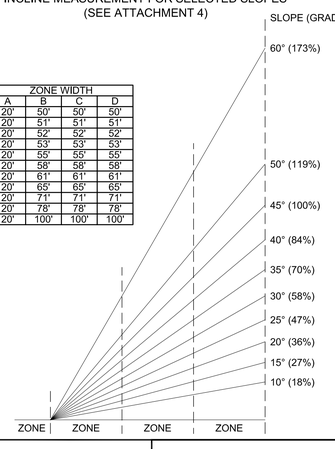
IDENTIFICATION MARKER DETAIL

ATTACHMENT 4
ZONE MARKER DETAILS
(MARKER DISTANCE SHALL BE INCREASED ON SLOPES TO ACCOMMODATE INCLINE MEASUREMENTS IN ACCORDANCE WITH ATTACHMENT 3)



INCLINE MEASUREMENT

ATTACHMENT 3
INCLINE MEASUREMENT FOR SELECTED SLOPES
(SEE ATTACHMENT 4)



SLOPE	ZONE WIDTH A	B	C	D
0°	20'	50'	50'	50'
10°	20'	51'	51'	51'
15°	20'	52'	52'	52'
20°	20'	53'	53'	53'
25°	20'	55'	55'	55'
30°	20'	58'	58'	58'
35°	20'	61'	61'	61'
40°	20'	65'	65'	65'
45°	20'	71'	71'	71'
50°	20'	78'	78'	78'
60°	20'	100'	100'	100'

SAMPLE
FUEL MODIFICATION AND CONSTRUCTION FOR ALL LOTS -PRIVATE HOME OWNER DISCLOSURE EXHIBIT, TYPICAL

LEGEND

ZONE "A"
-SET BACK ZONE
NON-COMBUSTIBLE PROPERTY OWNER OR MAINTAINED PER OCFA MAINTENANCE GUIDELINES, AREA PLANTED WITH APPROVED PLANT MATERIAL.

ZONE "B"
- FULLY IRRIGATED WET ZONE
(100% REMOVAL OF UNDESIRABLE PLANT SPECIES)
HOMEOWNERS ASSOCIATION MAINTAINED PER OCFA MAINTENANCE GUIDELINES, AREA PLANTED WITH APPROVED PLANT PALETTE ONLY.

ZONE "C"
- FULLY IRRIGATED WET ZONE
(100% REMOVAL OF UNDESIRABLE PLANT SPECIES)
HOMEOWNERS ASSOCIATION MAINTAINED PER OCFA MAINTENANCE GUIDELINES, AREA PLANTED WITH APPROVED PLANT PALETTE ONLY.

ENHANCED CONSTRUCTION ZONE
All residential structures adjoining a Fuel Modification edge within this project shall comply with all the requirements of the 2010 California Residential Code Section R327.

INDICATES LOW PROFILE VENTING
Structures adjoining the Fuel Modification shall have low profile vents for attic ventilation on the side(s) of the structure facing the fuel modification as indicated on the fuel modification plan. All other vents throughout the entire project requiring Section R327 shall be a minimum/maximum of ⅜" venting.

NOTES:
1. HOMEOWNER / PROPERTY OWNER IS RESPONSIBLE TO MAINTAIN "A" ZONE SETBACK, "B" WET ZONE AND "C" DRY ZONE IF IN PRIVATE BACKYARD PER APPROVED FUEL MODIFICATION PLAN GUIDELINES.

I UNDERSTAND AND AGREE TO COMPLY WITH ALL FUEL MODIFICATION AND EXPOSED SIDES CONSTRUCTION REQUIREMENTS FROM THE APPROVED FUEL MODIFICATION PLAN WHICH APPLY TO THIS PROPERTY:

BUYER SIGNATURE — DATE

BUYER SIGNATURE — DATE

SYMBOL LEGEND

ACCESS POINT
Location of emergency and maintenance access easements within every 500 lineal feet of the fuel modification area. Access easements shall have a minimum 10-foot width; alternatively, 5-foot wide easements provided every 250 feet may be acceptable. Any gates installed into the fuel modification area and shall be a minimum of 36 inches wide. The easements shall be maintained free of vegetation or any structures greater than 5 inches in height.

IDENTIFICATION MARKER
Permanent identification markers shall be constructed to identify the limits of applicable Fuel Modification zones, marker design shall be 2" dia. x 8'-0" long galvanized pipe, embed minimum 2'-6" into solid ground. 1" reflector tape 1 tape band at top for Zone B and 2 tape bands at top for Zone C. Expose pipe 2'-0" above vegetation minimum.

FUEL MODIFICATION SECTION LOCATIONS:
Refer to this sheet for Fuel Modification Sections.

FUEL MODIFICATION LIMITS

RADIANT HEAT WALL
Constructed per the requirements on the detail provided on this plan.

LOW PROFILE VENTING
Structures adjoining the Fuel Modification shall have low profile vents on the side facing the fuel modification as indicated on this plan.

PRIVATE HOMEOWNER PAD REAR YARD FENCING
Indicates location of rear yard fence to separate the private homeowner pad and the slopes which will be maintained by the HOA. Final design and location by Landscape Architect, not a part of this review.

⚠1 FUEL MODIFICATION LEGEND

ZONE A - NON-COMBUSTILBE CONSTRUCTION:
10'-0" to 95'-0" setback zone for non-combustible construction only. Zone A shall be maintained by the Homeowners Association.

ZONE B - WET ZONE (100% REMOVAL UNDESIRABLE SHRUBS):
First 5'-0" to 186'-0" from Zone A. Zone B shall be cleared of all undesirable plant species, irrigated, and planted with species from Attachment 8. Exceptions to save desirable species may be submitted for approval by the OCFA on a site-specific basis.

ZONE C - THINNING ZONE (50% THINNING NATIVE SHRUBS):
21'-0" - 100'-0" out from Zone B. Zone C shall be non-irrigated and requires horizontal and vertical spacing of plant groups in accordance with Attachment 6 and removal of all dead and dying vegetation and undesirable species from Attachment 7. Minimum thinning percentage of plant removal is 50%. Zone C area shall be maintained by the Homeowners Association.

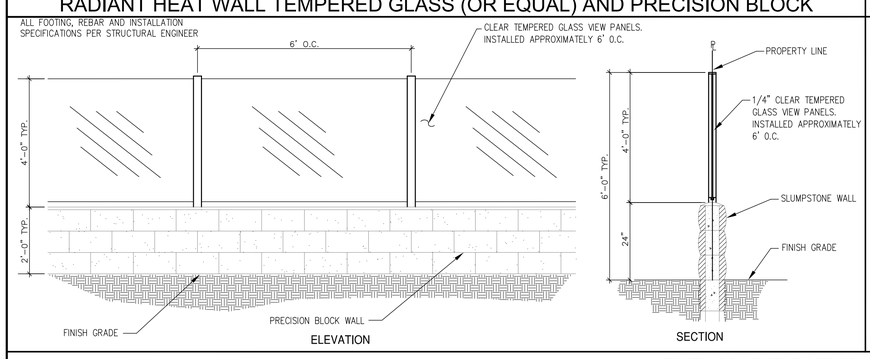
PRIVATE HOMEOWNER SIDE YARD SLOPES:
Planting Plans for the private homeowner side yard slopes shall be reviewed by the HOA and shall be devoid of eucalyptus, juniper, cedar, cypress, washingtonia robusta (mexican fan palm), acacia (except for acacia desert carpet) and pine trees, California sagebrush, chamise, buckwheat and black and white sage (Salvia spp.). Additionally California Fescue (Festuca californica) shall not be planted or included within any seed mix as recorded within the CC&R's.

CONSTRUCTION REQUIREMENTS:
All structures within the Cielo Vista project will be constructed per the 2010 California Residential Code Section R327. Additionally all structures shall be protected with NFPA 13-D Automatic Fire Sprinklers. Refer to the Cielo Vista Fire Protection Plan OCFA Service Request 184101 for specific code section requirements for each lot.

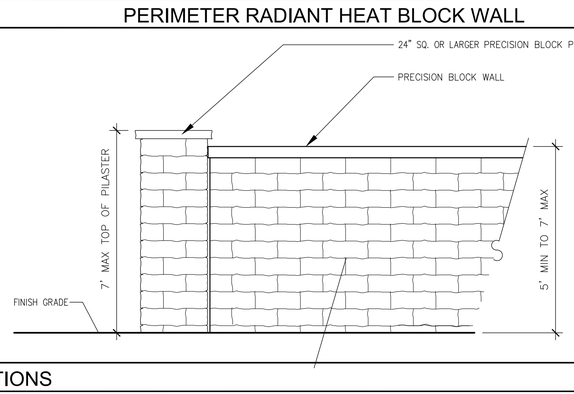
LOTS WITH FIRE SPRINKLERS ATTIC PROTECTION:
Structures with deficient fuel modification Lots 39-42, 49-52, 69, 70 and 85-88 shall be protected with NFPA 13-D Automatic Fire Sprinklers including attics and small spaces.Lots 96 - 112 shall be protected with NFPA 13-D Automatic Fire Sprinklers including attics and small spaces to mitigate for roadway access longer than 800'

SPECIAL MAINTENANCE AREA (SMA)- WET ZONE:
The Special Maintenance Areas have maintenance requirements to reduce the chances of ignition from wildfires. They need maintenance just as fuel modification zones do and shall be maintained on a year round basis, with removal of all dead and dying plant material, replacement of dead or diseased species with plant material with the same growth characteristics from the approved landscape plans. Irrigation shall be verified on a regular basis to ensure it is in a working a condition and the plants shall be irrigated as necessary to keep them healthy with their appropriate moisture content. A copy of the approved Landscape Plans shall be provided to the HOA by the developer and remain on record indefinitely with the HOA. Copies of plans shall be provided to the contracted maintenance company. It is the responsibility of the HOA to forward a copy of the approved Landscape Plans to any new property management company. The HOA shall inspect the special maintenance areas twice a year to ensure the special maintenance areas retain the original design of the areas.
The following are further Special Maintenance Area (SMA) requirements:
- Other than trees, a large percentage of the special maintenance area shall consist of a ground cover that naturally grows no taller than 2 feet in height.
- The areas are completely irrigated and have plants that need irrigation to retain healthy fuel moisture.
- Any dead and dying specimens and branches shall be removed.
- Leaf litter on top of vegetative cover shall be removed.
- Landscape design Plans shall be retained by the HOA indefinitely and the slopes shall always remain as they were designed.
- As plants migrate or new plants seed-in, those shall be removed to retain the original design.
- Future changes to slope designs shall be approved by OCFA.
- The maintenance requirements of the special maintenance areas shall be factored into the funding with the fuel modification zones.
- Special Maintenance Areas shall be designed and also maintained as to not provide direct flame or an excessive amount of radiant heat on structures.
- Special Maintenance Areas will have a limited use of native grasses as approved by OCFA.

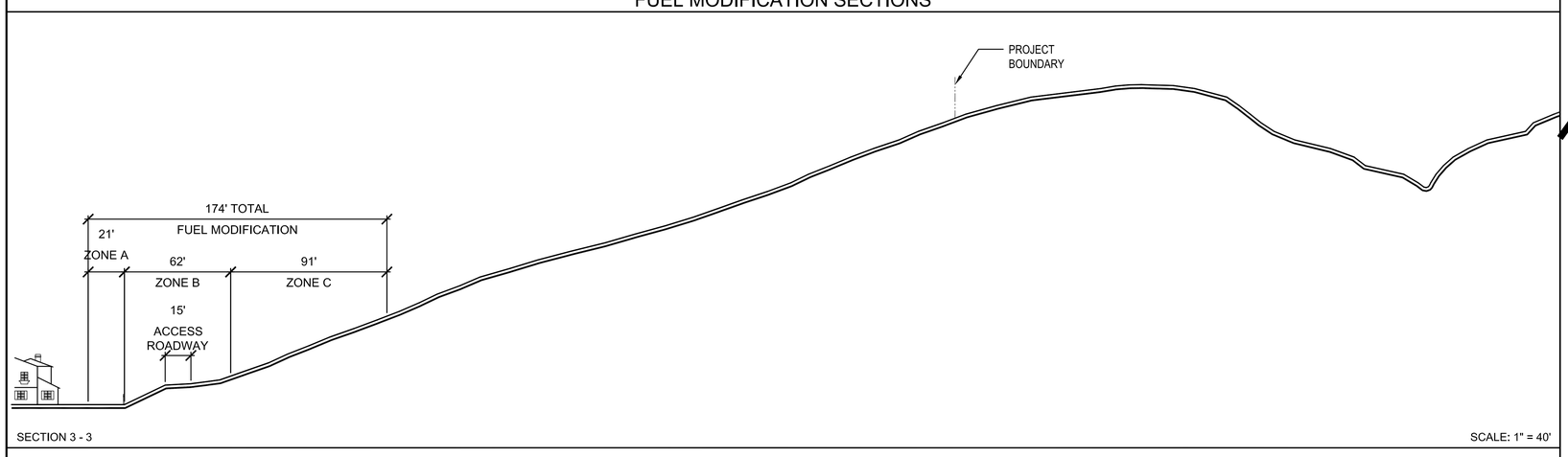
RADIANT HEAT WALL TEMPERED GLASS (OR EQUAL) AND PRECISION BLOCK



PERIMETER RADIANT HEAT BLOCK WALL



FUEL MODIFICATION SECTIONS



⚠1 BUILDING OFFICIAL LETTER

firesafe :PLANNING SOLUTIONS

February 19, 2013

County of Orange Building Official
OC Planning
300 N. Flower Street, 1st Floor
Santa Ana, CA 92702-4048
Attn: Hadi Tabatabaee PE, CBO, CGBP, CASP

Subject: Cielo Vista – Tentative Tract Map 17341
Non-Buildable Lots as Part of the Conceptual Fuel Modification Plan
Unincorporated Orange County

Dear Mr. Tabatabaee,

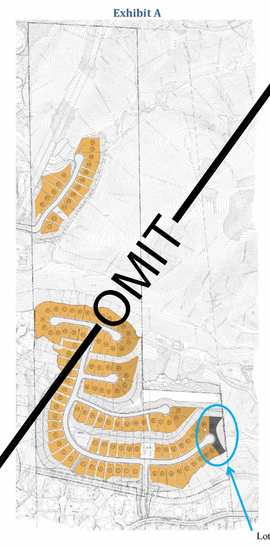
Firesafe Planning Solutions has been contracted to create a Conceptual Fuel Modification Plan for the Cielo Vista planned community (TTM 17341) in Unincorporated Orange County. As requested by OCFA this letter is to inform you that lots 85 and 86 within the Cielo Vista Community are currently non-buildable due to lack of fuel modification at the current time. Once off-site fuel modification is obtained or a re-design of the plan is accomplished then lots 85 and 86 become buildable. Exhibit A provided with this letter indicates the location of lots 85 and 86.

Feel free to contact me should you have any questions

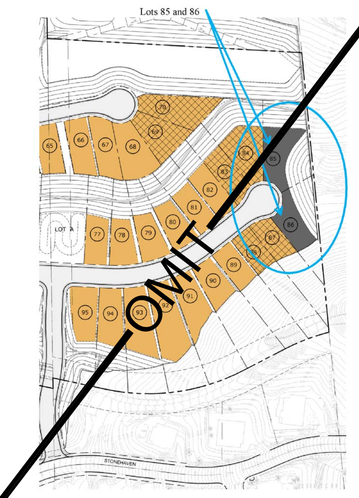
Sincerely,

David Oatis – Principal
As agent for Cielo Vista

Exhibit A



302 N. El Camino Real, Suite 202 – San Clemente, CA 92629 – (949)240-5911



302 N. El Camino Real, Suite 202 – San Clemente, CA 92629 – (949)240-5911

PLANT REMOVAL LIST

ATTACHMENT 7
UNDESIRABLE PLANT SPECIES (TARGET SPECIES)
FIRE PRONE PLANT SPECIES (MANDATORY REMOVAL) FROM FUEL MANAGEMENT ZONES.

Botanical Name	Common Name
Cynara Cardunculus	Artichoke Thistle
Ricinus Communis	Castor Bean Plant
Cirsium Vulgare	Wild Artichoke
Brassica Nigra	Black Mustard
Silybum Marianum	Milk Thistle
Sacsola Austails	Russian Thistle/Tumblewood
Nicotiana Bigelevil	Indian Tobacco
Nicotiana Glauca	Tree Tobacco
Lactuca Serriola	Prickly Lettuce
Conyza Canadensis	Horseweed
Heterothaca Grandiflora	Telegraph Plant
Anthemix Cotula	Mayweed
Urtica Urens	Burning Nettle
Cardaria Draba	Noary Cress, Perennial Peppergrass
Brassica Rapa	Wild Turnip, Yellow Mustard, Field Mustard
Adenostoma Fasciculatum	Chamise
Adenostoma Sparsifolium	Red Shanks
Cortaderia Selloana	Pampas Grass
Artemisia Californica	California Sagebrush
Eriogonum Fasciculatum	Common Buckwheat
Salvia Mellifera	Black Sage
Ornamental:	
Cortaderia	Pampas Grass
Cupressus sp	Cypress
Eucalyptus sp	Eucalyptus
Juniperus sp	Juniper
Pinus sp	Pine

ADDITIONAL NOTE FOR CIELO VISTA
All new landscaping plans proposed within the Cielo Vista Community (development areas and fuel modification zones) shall be devoid of eucalyptus, juniper, cedar, cypress, washingtonia robusta (mexican fan palm), acacia (except for acacia desert carpet) and pine trees, California sagebrush, chamise, buckwheat and black and white sage (Salvia spp.). Additionally California Fescue (Festuca californica) shall not be planted or included within any seed mix. This landscape palette restriction is to be recorded as part of all applicable CC&Rs documents, and applies to all interior areas.

SCANNED COPY OF OCFA APPROVAL STAMP

SCALE: 1" = 80'-0"
0 80' 160' 240' 320'
NORTH

FIRE ORANGE COUNTY 02/27/13 REVIEWED CALIFORNIA AUTHORITY
188168

CIELO VISTA - CONCEPTUAL FUEL MOD	PLAN SET: "B"
PLAN CONTROL	DATE: 07/23/2013

NO.	DATE	REVISIONS
⚠1	7/23/2013	Site plan revised to allow for lots 85 and 86 to be buildable, and lots have bee renumbered. Fuel Modification Zones and interior Special Maintenance Areas have been revised to reflect new site plan. AMM letter revised to match revised lot numbers.
2		
3		
4		

PREPARED FOR:
SAGE COMMUNITY GROUP
3 CORPORATE PLAZA, SUITE 102
NEWPORT BEACH, CA 92660
PHONE: (949) 644-3514

ENGINEER:
CHARLES HARTMAN & ASSOC.
PLANNING - ENGINEERING - SURVEYING
27127 CALLE ARROYO - SUITE 1904
SAN JUAN CAPISTRANO, CA 92675 (949) 661-6695

PREPARED BY:
firesafe :PLANNING SOLUTIONS
302 N. EL CAMINO REAL, SUITE 202
SAN CLEMENTE, CA 92672
(949) 240-5911 (949) 240-8291 FAX
WWW.FIRESAFEPLANNING.COM

CONCEPTUAL FUEL MODIFICATION
CIELO VISTA
VTTM NO. 17341 - LOTS 1-112
UNINCORPORATED ORANGE COUNTY, CA
OCFA REVISION SR# 188168 - PREVIOUSLY APPROVED184100
ORANGE COUNTY FIRE AUTHORITY

SHEET
CFM-2
OF 2