VCP "256380, Bellingham"
aka Starvin Sams Mini Mart 14
VCP NW1487

TOSCO 6380
Bellingham
LUST 4/71259

Store # 256380 Date: 10/29/97
Unit # 6380 Code. SI Color
Description. SOIL GAS SURVEY RESULTS

009403

Soil Gas Survey Results

UNOCAL Service Station 6380
200 S 36th St
Bellingham, Washington

ENTERED 8-9-2005

Prepared for

Tosco Marketing Company

October 29, 1997

Prepared by

Pacific Environmental Group, Inc.
2025 Gateway Place, Suite 440
San Jose, California 95110

Project 311-163.1A

PACIFIC ENVIRONMENTAL GROUP, INC.

SOIL GAS SURVEY RESULTS
FOR
UNOCAL SERVICE STATION 6380
BELLINGHAM, WASHINGTON

INTRODUCTION

This report presents the results of a soil gas survey completed at UNOCAL Service Station 6380. The soil gas survey was performed by Pacific Environmental Group, Inc. (PACIFIC) on September 17, 1997. The work was performed in accordance with a scope of work prepared by Tosco Marketing Company (Tosco), dated August 25, 1997.

The purpose of the soil gas survey is to provide baseline data regarding the occurrence of petroleum hydrocarbon vapors in soil near potential source areas at the site referenced above. This report presents a discussion of field data collection methods and analytical procedures, and the survey results. The following information is attached to this report; a Field Data Sheet, a Site Plan, a Soil Gas Sampling Analysis Report, and chain-of-custody documentation for the soil gas samples.

FIELD AND LABORATORY PROCEDURES

The scope of work included the following procedures: (1) perform a presurvey site visit to mark soil gas probe locations for utility clearance, (2) collect organic vapor measurements from beneath product dispensers and within manways for the underground storage tank (UST) turbines, (3) collect soil vapor samples from near USTs, product islands, and product lines, and (4) submit soil gas samples to Sequoia Analytical Laboratories for chemical analyses. These procedures are described below in further detail.

Prefield Preparation

Prior to initiating the soil gas survey, PACIFIC personnel performed a site visit to mark proposed probe locations, check accessibility, and to notify the UNOCAL station manager of the proposed survey schedule. Probe locations were selected based on PACIFIC's understanding of underground facilities as shown on the attached Site Plan which was provided by Tosco. In some cases probe locations were adjusted in the field to avoid overhead or under-

ground obstructions that were not noted on the site plan. Underground Service Alert was notified to clear each probe location for underground utilities.

Field Data Collection

The level of volatile organic vapors were measured from beneath product dispensers and within turbine manways using a HNU PI-101 photo-ionization detector (PID). A PACIFIC field technician opened each product dispenser and turbine manway and collected a PID measurement from soil immediately below each dispenser or turbine at a height of approximately 1/2-inch above the exposed soil. If native soil was not exposed, then this observation was recorded on the Field Data Sheet and PID measurements were not collected.

PID measurements and field observations are recorded on the attached Field Data Sheet. The location of each PID reading is shown on the attached site plan.

Soil Gas Survey

On September 17, 1997, a PACIFIC staff technician directed the installation of 7 soil gas probes in the vicinity of USTs, product islands, and product lines at the site referenced above. The approximate location and designation of each soil gas probe is shown on the attached Site Plan. Sample collection depths are noted on the attached Field Data Sheet.

Two samples were collected from the area of the UST complex at depths ranging from 3 feet to 15 feet.

Two soil gas samples were collected adjacent to the product dispenser islands at depths of approximately 3 feet. Additionally, 3 soil gas samples were collected along the product lines at depths of approximately 3 feet.

The soil gas survey consisted of driving a 1/2-inch diameter hollow steel probe into unsaturated soils at each sampling location. The end of the driven probe was fitted with a small screened interval with protective cover. The probes were driven into the soil with pneumatic equipment. Upon reaching the desired depth the outer protective casing was retracted to allow the screened interval to be exposed to the soils. Soil gas samples were drawn from the probe by means of a vacuum pump through a probe head fitting and a silastic tubing sample line. The soil gas probe was purged of vapors for approximately 3 minutes prior to sample collection. A soil gas sample was then collected into a clean 1-liter Tedlar bag. Each Tedlar bag was labeled with the appropriate sample designation, date of sample, and UNOCAL station number and stored in a cool dark box. The samples were submitted to Sequoia Analytical Laboratories within 24 hours of sample collection.

Upon completion of the sampling procedures the probes were removed and the probe holes were backfilled to the surface with a neat cement seal.

Laboratory Procedures

Soil gas samples were submitted under appropriate chain-of-custody documentation to Sequoia Analytical Laboratories, a Tosco-approved state-certified analytical laboratory. The samples were analyzed for total purgeable petroleum hydrocarbons calculated as gasoline in accordance with EPA Method 8015 (modified), and benzene, toluene, ethylbenzene, xylenes, and methyl-tert butyl ether (MtBE) in accordance with EPA Method 8020. Additionally, if MtBE was detected, the soil gas sample indicating the highest MtBE concentration by EPA Method 8020, was analyzed in accordance with EPA Method 8260, to confirm the presence of MtBE.

FINDINGS

The soil gas survey findings are presented on the attached Field Data Sheet and Soil Gas Sample Analysis Report.

CLOSING

This report and all field activities described within were performed by the staff of PACIFIC under the professional supervision of the project geologist whose signature appears hereon.

Should you have any questions concerning the contents of this report, please call.

Sincerely,

Pacific Environmental Group, Inc.

Joseph Muzzio
Project Geologist
CEG 1672

Attachments: Field Data Sheet
Soil Gas Sample Analysis Report
Chain-of-Custody Documentation
Site Plan

Tosco Marketing Company
Field Data Sheet

Baseline Augmentation
Unocal Service Station Sites

Facility No.:	6380	**Sampler:**	MG
Location:	Bellingham	**Time On Site:**	15:56 - 18:30
Date Sampled:	9/17/97	**Weather:**	Cloudy / Rainy

UST Samples (Sample Designation: T-1, T-2,....)/**Former UST Samples** (Sample Designation: (FT-1, FT-2,...)

Sample ID	PID Reading (ppm)	Air Sample Collected (Yes/No)	Sample Depth (feet)	Comments (NPO, FPO, MPO, SPO)
T-1	2	YES (17:51)	3'	FPO
T-2	11	YES (18:11)	15'	FPO

Dispenser Island Samples (Sample Designation: D-1, D-2,....)

Sample ID	PID Reading (ppm)	Air Sample Collected (Yes/No)	Sample Depth (feet)	Comments (NPO, FPO, MPO, SPO)
D-1	4	YES (16:35)	3'	NPO
* D-2	115	YES (16:15)	3'	SPO

Product Lines (Sample Designation: P-1, P-2,....)

Sample ID	PID Reading (ppm)	Air Sample Collected (Yes/No)	Sample Depth (feet)	Comments (NPO, FPO, MPO, SPO)
P-1	35	YES (16:48)	3'	MPO
P-2	9	YES (17:17)	3'	FPO
P-3	2	YES (17:04)	3'	NPO

Product Dispensers (Sample Designation: PD-1, PD-2,....) /**UST Turbines** (Sample Desiganation TU-1, TU-2

Sample ID	PID Reading (ppm)	Air Sample Collected (Yes/No)	Exposed Soil (Yes/No)	Comments (NPO, FPO, MPO, SPO)
* PD-1	n/a	no	n/a	* Exxo attendent did not
* PD-2	n/a	no	n/a	have key to dispenser door
PD-3	2	no	YES	NPO
* PD-4	n/a	no	n/a	↓
TU-1	2	no	YES	FPO
TU-2	4	no	YES	FPO

Sequoia Analytical
680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

SOIL GAS SAMPLE ANALYSIS REPORT

TOSCO BASELINE SOIL GAS SURVEY

Site Number: 6380 Date Sampled: 9/17/97 Date(s) Analyzed: 9/19/97

City / State: Bellingham / WA

Analytical Results From Sequoia Analytical									
Reporting Units: µg/L									% RECOVERY
#	Sample ID	TPH - Gas	Benzene	Toluene	Ethyl Benzene	Total Xylenes	GC MTBE	GC/MS MTBE	GC Surrogate
1	T - 1	<10	<0.50	<0.50	<0.50	<0.50	<2.5	--	101
2	T - 2	41	<0.50	<0.50	<0.50	<0.50	4.0	--	64
3	D - 1	<10	0.54	<0.50	<0.50	<0.50	<2.5	--	79
4	D - 2	8600	2500	190	160	350	2900	<8.0	84
5	P - 1	4800	1900	120	<50	<50	2500	--	84
6	P - 2	280	19	36	2.8	7.9	48	--	85
7	P - 3	<10	<0.50	<0.50	<0.50	<0.50	<2.5	--	99
	Method Blank	<10	<0.50	<0.50	<0.50	<0.50	<2.5	--	94

SEQUOIA ANALYTICAL, #1271

Alan B. Kemp
Laboratory Director

NORTH CREEK ANALYTICAL
Environmental Laboratory Services

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

CHAIN OF CUSTODY REPORT

Work Order # B709375

REPORT TO: PEG
ATTENTION: Joe Muzzio
ADDRESS: 2025 Gateway Pl. #440, San Jose, Ca. 95110
PHONE: 408 441 7500 FAX: 408 441 7539
PROJECT NAME: Tosco Baseline Documentation
PROJECT NUMBER: 311-163.1A (6380)
SAMPLED BY: Mark Gabriel

INVOICE TO: Sequoia Analytical
ATTENTION: Allen Kemp
ADDRESS: 404 N. Wiget Lane, Walnut Creek, Ca. 94599
P.O. NUMBER:
NCA QUOTE #:

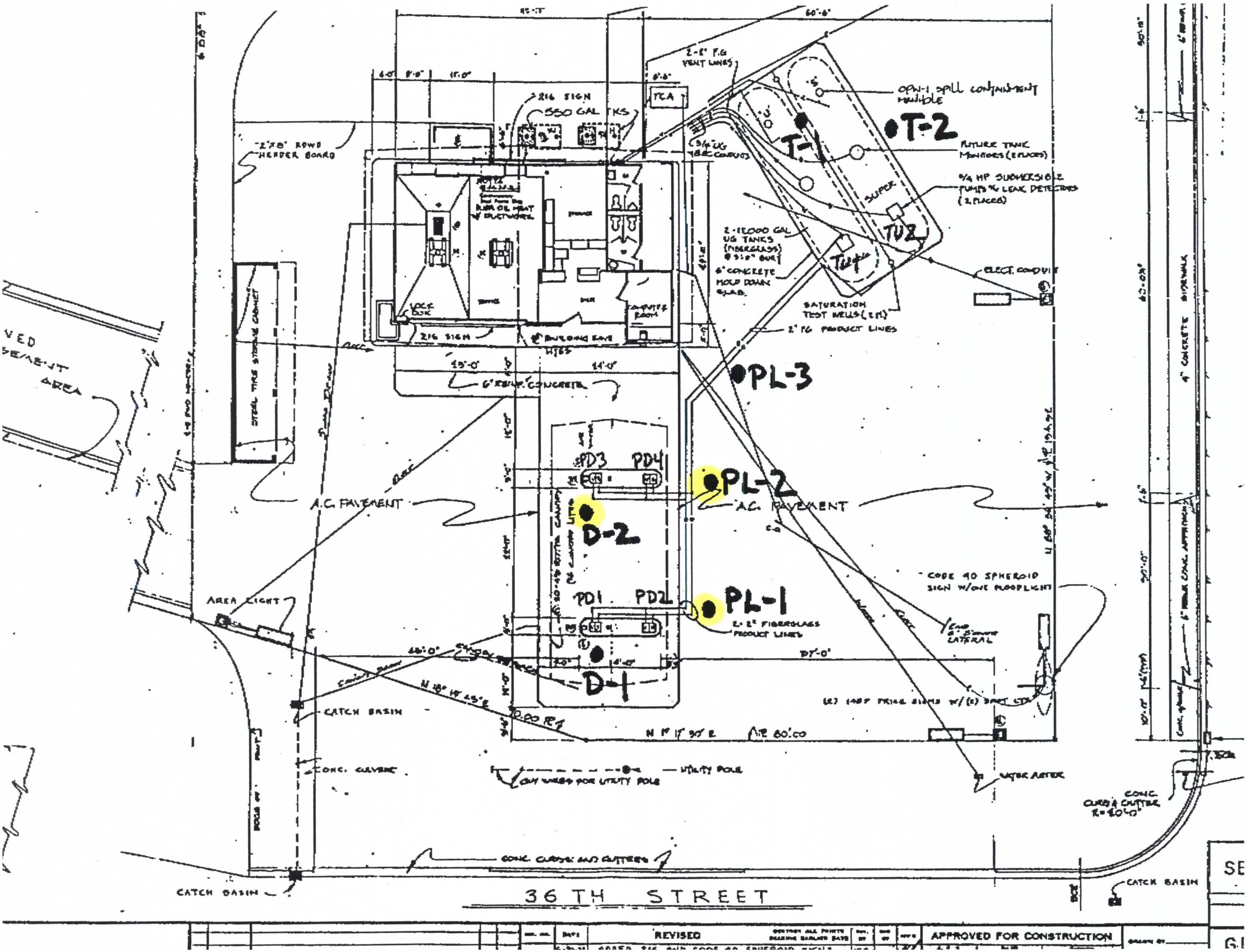
TURNAROUND REQUEST in Business Days *
Organic & Inorganic Analyses: 10 (Standard) 7 5 4 3 2 1 Same Day
Fuels & Hydrocarbon Analyses: 5 (Standard) 3 [X] 2 1 Same Day
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

Analysis Request: WTPH-G / BTEX/MTBE

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	WTPH-G/BTEX/MTBE								MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1	T-1	9/17/97 1757	B709375-01	X										
2	T-2	1811	-02	X										
3	D-1	1635	-03	X										
4	D-2	1615	-04	X										
5	P-1	1648	-05	X										
6	P-2	1712	-06	X										
7	P-3	1704	-07	X										
8														
9														
10														

RELINQUISHED BY (Signature): [signature]	DATE: 9/18/97	RECEIVED BY (Signature): [signature]	DATE: 9-18-97
PRINT NAME: Mark Gabriel FIRM: PEG	TIME: 1137	PRINT NAME: Art Franzen FIRM: WDEL	TIME: 1140
RELINQUISHED BY (Signature):	DATE:	RECEIVED BY (Signature): Dana H	DATE: 9/18/97
PRINT NAME: FIRM:	TIME:	PRINT NAME: D HEINZ FIRM: NCA-B	TIME: 1500

ADDITIONAL REMARKS: [illegible]


T-1
T-2
TU-1
TU-2
PL-1
PL-2
PL-3
D-1
D-2
PD1
PD2
PD3
PD4
OPW-1 SPILL CONTAINMENT MANHOLE
FUTURE TANK MONITORS (2 PLACES)
3/4 HP SUBMERSIBLE PUMPS W/ LEAK DETECTORS (2 PLACES)
2-12,000 GAL UG TANKS (FIBERGLASS)
6" CONCRETE HOLD DOWN SLAB
ELECT. CONDUIT
SATURATION TEST WELLS (2 PL)
2" FG PRODUCT LINES
2-2" F.G. VENT LINES
2-2" FIBERGLASS PRODUCT LINES
TCA
216 SIGN
550 GAL TKS
2"X8" RDWD HEADER BOARD
STEEL TIRE STORAGE CABINET
A.C. PAVEMENT
6" REINF. CONCRETE
CODE 40 SPHEROID SIGN W/ONE FLOODLIGHT
AREA LIGHT
CATCH BASIN
CONC. CULVERT
UTILITY POLE
GUY WIRES FOR UTILITY POLE
WATER METER
CONC. CURBS AND GUTTERS
CONC. CURB & GUTTER
4" CONCRETE SIDEWALK
36TH STREET
REVISED
APPROVED FOR CONSTRUCTION