

File Goodshore Hung PO. Box 8117
Berkeley, California 94707

44608 Phone (415) 525-3750

June 23, 1993

Mr. Lawrence Seto Senior Hazardous Material Specialist Alameda County Health Agency 80 Swan Way, Room 200 Oakland, California 94621

Dear Mr. Seto:

We have completed the removal of underground storage tanks at the Wilanco site (the former SDDA facility). Enclosed are the necessary documents for your files, including:

- 1) Tank Removal Report dated 6/17/93,
- 2) Evidence of disposal of contaminated soil to Redwood Landfill, Inc. dated 6/10/93,
- 3) Other reports and data documenting testing and sampling of soil and groundwater.

All underground storage tanks at this site tanks have been removed and disposed of at proper disposal sites. Contaminated soil was treated using biodegradation techniques and disposed of at Redwood Landfill, Inc.

Now that everything has been completed in accordance with the regulatory requirements, I expect this file can now be closed.

Sincerely,

ઝonn W. Pigg President



June 17, 1993

ENSR Consulting and Engineering

1320 Harbor Bay Parkway Alameda, CA 94501 (510) 865-1888 (510) 748-6799 (FAX)

Mr. John Piggott Wilanco, Inc. P.O. Box 8117 Berkeley, California

Re: Wilanco Tank Removal Report

Zip - 94608

Dear Mr. Piggott:

This letter summarizes the chain of events and results of analytical tests conducted on soil samples, collected adjacent to underground tanks removed from your facility between May 6 and May 12, 1992. ENSR Consulting and Engineering (ENSR) was retained by Wilanco Inc. to collect soil and groundwater samples during the removal of underground fuel tanks at 1077 Eastshore Frontage Road in Albany, California (site). The purpose of this investigation was to determine the potential for residual soil and/or groundwater contamination resulting from the presence of these underground tanks. This investigation was authorized by Mr. John Piggott on June 29, 1992 by signing ENSR's proposal no. 7295-A01.

#### Introduction

Six underground fuel storage tanks were removed between May 6 and May 12, 1992 from the site. Three of these tanks formerly contained diesel fuel, while the remaining three tanks formerly contained gasoline. The three diesel tanks were contained within one excavation, designated tank excavation pit number 1. This cluster of tanks is also referred to as Tank Cluster 1. Two gasoline tanks were located in excavation pit number 2. The third gasoline tank, designated Tank Number 6, was located in tank excavation pit number 3. See Figures 1 and 2.

The underground tanks were removed by Fuel Oil Polishing, a Sonoma, California based tank removal contractor. The tanks and their residual liquids were handled by Erickson, Inc., of Richmond, California. Erickson was a subcontractor of Fuel Oil Polishing.

## Field Investigations

Soil samples were collected by removing soil using a backhoe to initially collect soil from inaccessible areas of the tank pits. Soil samples were then troweled into laboratory supplied glass jars. The glass jars were immediately sealed, labeled, and placed into an ice chest for temporary storage and shipment to Curtis and Tompkins, a California state certified laboratory. Six soil samples were collected from Tank Cluster Number 1, three soil sample



were collected from Tank Cluster Number 2 and two soil sample were collected from around Tank Number 6.

A seventh soil sample was required by the Alameda County Health Care Agency due to elevated concentrations of diesel in sample TC1C. This soil sample was from Tank Cluster Number 1.

Additional soil samples were collected from soil piles, stockpiled onsite from the three tank excavations. These soil piles were the residual soil removed from above and from the sides of the tanks during the tank removal process. This additional sampling and analysis was being conducted to show that the soil is within Alameda County Health Care Agency guidelines to place back into the tank pits as "clean fill". These additional soil sample locations are presented in Figure 2.

## **Laboratory Results and Data Analysis**

Soil samples collected from the diesel Tank Cluster Number 1 were analyzed for Total Petroleum Hydrocarbons (TPH) diesel, benzene, toluene, total xylenes and ethylbenzene (BTEX) using EPA Method modified 8015 and EPA METHOD 8020, respectively. Soil samples collected from Tank Cluster Number 2 and around Tank Number 6 were analyzed for total lead, organic lead, TPH gasoline, and BTEX.

Water samples were collected twice. The first groundwater sample was collected on May 6, 1992. The second water sample was collected on May 12, 1992. There was no water in Tank Cluster Number 1 on May 6, 1992.

A summary table of soil and groundwater results from the tank pits is presented in Table 1. Copies of the analytical results are contained in Appendix 1.

#### Soil Analysis

A sample collected from tank excavation pit number 1 detected TPH as diesel at concentration of 80 milligrams per kilogram (mg/Kg) from sample TC1C. Two soil samples from tank excavation pit number 2 had detectable levels of hydrocarbons. Soil sample TC2B had detected 0.460 mg/Kg ethylbenzene and 0.700 mg/Kg total xylenes. Total lead was also detected in samples TC2B and TC2C at concentrations of 8 and 13 mg/Kg, respectively.



Tank excavation pit number 3 had only total lead detected in soil samples. These lead concentrations were 7 and 46 mg/Kg believed to have resulted from lead-containing debris in the original fill materials placed in the early 1900's. There were no fuel hydrocarbons detected in any of these samples.

Due to the high diesel concentrations detected in soil sample TC1C, some additional excavation was required, and an additional sample was required to be collected by Alameda County Health Care Agency representatives. This second sample was collected in the vicinity of sample TC1C and labeled TC1G. This sample had detected TPH as diesel at 6 mg/Kg.

# **Groundwater Analysis**

Two rounds of groundwater sampling occurred. The first round of groundwater sampling occurred on May 6, 1992. Groundwater was observed in tank excavation pit numbers 2 and 3. Tank excavation pit number 1, had no water at this time. Due to high concentrations of benzene and total xylenes detected in a sample from tank excavation pit number 2, Alameda County Health Care Agency suggested to Wilanco that the groundwater be pumped several times to obtain a more representative sample of groundwater. The second round of groundwater sampling occurred on May 12, 1992. All three excavations had water in them at this time. The groundwater samples were analyzed for the same parameters as the soil samples. The results of the groundwater sampling are presented in Table 1.

Groundwater samples were collected from the tank excavations by dipping the sample jars directly into the standing water. The laboratory supplied jars were then labeled, and placed into iced coolers for temporary storage and shipment to Curtis and Tompkins, LTD.

The second groundwater sample collected from Tank Cluster Number 2 detected benzene at 0.068 milligrams per liter (mg/l). This concentration exceeds both the California Maximum Contaminant Level (MCL) (0.0010 mg/l) and the U.S. EPA MCL (0.0050 mg/l) for benzene in drinking water. The California standard will be used by the agencies to determine if additional monitoring is required.

#### Disposition of the soil piles

The soil removed from each of the tank excavations was stockpiled separately. Soils with obvious contamination were segregated. All of the piles were placed on visquine plastic sheeting and covered with same.



On June 19, 1992 soil samples were collected from soil stock piles from Tank Excavation 1 and Tank Excavation 3. The results of these analyses are presented in Table 2. Upon determination that the soils in the two soil piles were within the Alameda County Health Care Agency's limits, the soils were placed back into the pits from which they were removed. Additional clean fill was imported to bring the elevation to grade. The site was then paved with concrete cement to match the existing surface.

The soil excavated from Tank Excavation 2 (designated by sample SS-9) was not placed back into the pit. The pit was filled with clean fill and the surface concreted to match the existing surface. The contaminated soil was treated using biodegradation techniques. The soil was resampled on May 4, 1993 with the results below the Alameda County Health Care Agency's limits. A copy of the results is contained in Appendix 2. The remediated soil, along with soil subsequently excavated from elsewhere onsite, was disposed of at the Redwood Landfill located in Novato, California. Results contained in Appendix 2 also include samples of the additional soil excavated from elsewhere onsite (sample designated SS-5 through SS-8 composite), as required by the landfill operator.

#### Conclusions

Based upon the results of the second groundwater sample, the Alameda County Heath Care Agency is requiring groundwater monitoring down gradient of Tank cluster number 2. Additional monitoring wells are currently being planned in this area as part of a separate site remediation program which is anticipated to proceed in 1993.

#### Limitations

This report and all field data, notes, and laboratory test data (herein collectively "information") were prepared by ENSR Consulting and Engineering (ENSR) for Wilanco Incorporated (client). Client may release this report to third parties, who may use and rely upon this information at their discretion, However, any use of or reliance upon this information by a party other than client shall be solely at the risk of such third party and without legal recourse against ENSR, or its subsidiaries and affiliates, or their respective employees, officers, or directors, regardless of whether the action in which recovery of damages is sought is based upon contract, tort, (including the sole, concurrent, or other negligence and strict liability of ENSR), statute, or otherwise. This report shall not be used or relied upon by a party which does not agree to be bound by the above statement. Additionally, this information was generated and/or gathered by ENSR subject to the specific budgetary, time, and other constraints of ENSR's client based upon a limited investigation



of the site. All statements and conclusions contained in this report are necessarily limited to the particular portions of the site actually investigated and/or tests by ENSR.

Very truly yours

Paul Hilbelink Project Manager

Project Number 7295-001

Paux Hilbelink

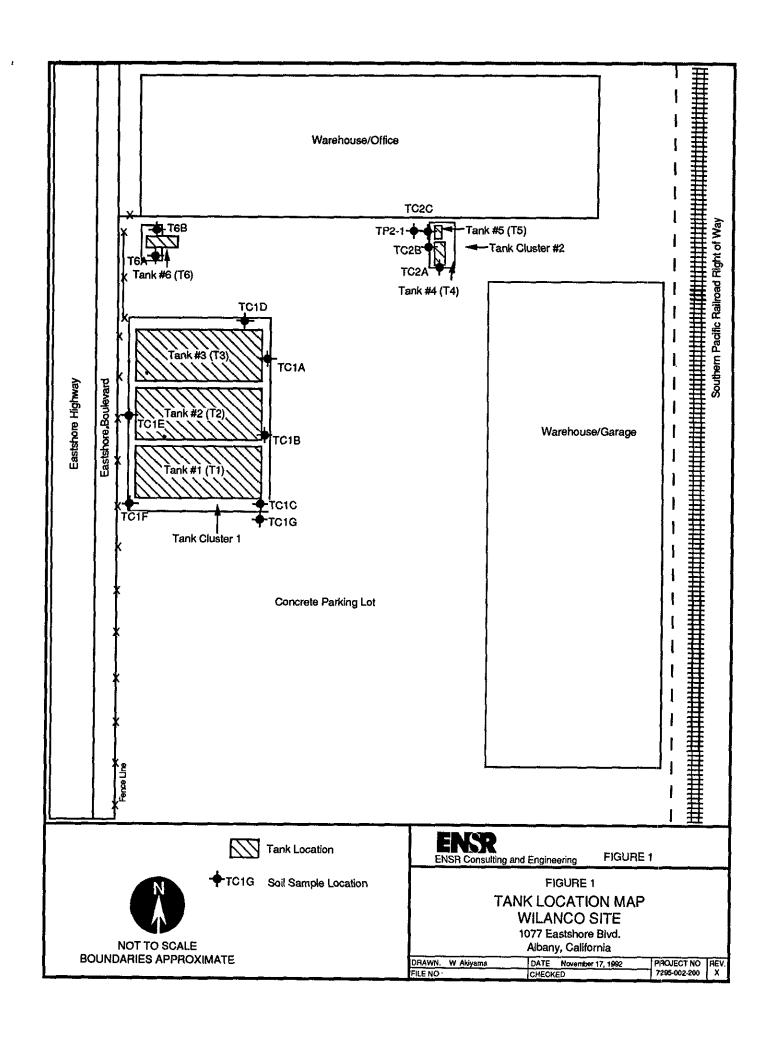
enclosures

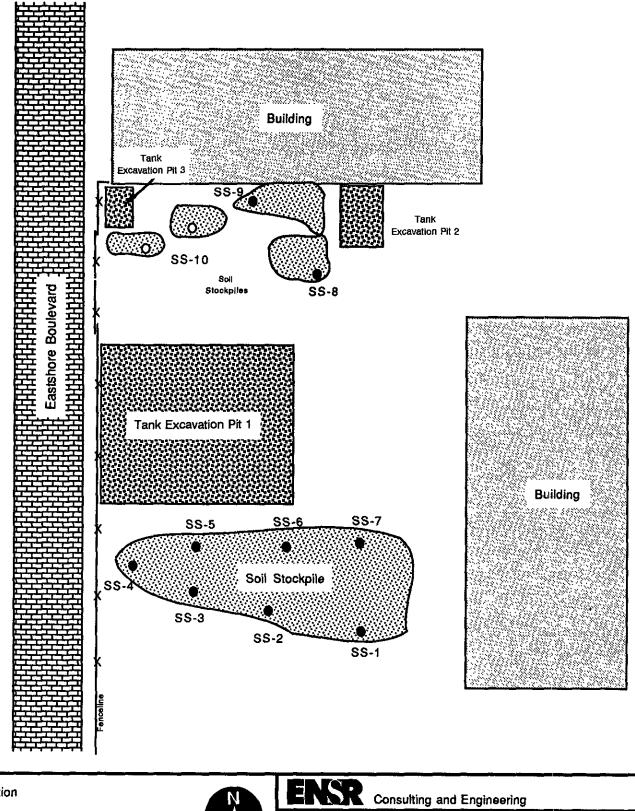
Constituent	Units		}	1	T		[ · · · · · · · · · · · · · · · · · · ·		1	
CONSTITUENT		Lead	Organic Lead	TPH gas	TPH diesel	TPH kerosen	Benzene	Toluene	Ethylbenzen	Total Xylen
	<u> </u>									
Tank Cluster	-	<del></del>	<del></del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<b> </b>	<del> </del>
TC 1A	mg/Kg	NA	NA	NA	4	* *	ND (<0.005)	ND (<0.005)	ND (<0.005)	ND (<0.005)
	mg/Kg		NA	NA	ND (<1)	ND (<1)	ND (<0.005)		ND (<0.005)	ND (<0.005)
TC 1C*	mg/Kg	NA	NA	NA	80	• •	ND (<0.005)	ND (<0.005)	ND (<0.005)	ND (<0.005)
	mg/Kg		NA	NA	ND (<1)		ND (<0.005)			ND (<0.005)
	mg/Kg		NA	NA	ND (<1)		ND (<0.005)			ND (<0.005)
TC 1F	mg/Kg	NA	NA	NA	ND (<1)	ND (<1)	ND (<0.005)			ND (<0.005)
TC 1G	mg/Kg	NA	NA	NA	6	* *	NA	NA	NA	NA
Tank Cluster	2						<u> </u>			
TC 2A	ma/Ka	ND (3)	ND (0.5)	ND (<1)	NA	NA	ND (<0.005)	ND (=0.005)	ND (<0.005)	ND (<0.005)
	mg/Kg		ND (0.5)	ND (<1)	NA		ND (<0.005)	ND (<0.005)	0.460	
	mg/Kg		ND (0.5)		NA	NA		ND (O.O80)	4,200	
	mg/Kg		NA		NA	<del></del>	ND (<0.005)	ND (<0.005)		ND (<0.005)
Tank #6		<u> </u>	ļ	<u> </u>						
										<b>_</b>
	mg/Kg		ND (0.5)	ND (<1)	NA		ND (<0.005)	ND (<0.005)		ND (<0.005)
T6B	mg/Kg	46	ND (0.5)	ND (<1)	NA	NA	ND (<0.005)	ND (<0.005)	ND (<0.005)	ND (<0.005)
California Ha	zardous	s Waste Concer	ntration Limits							
	mg/Kg	1,000		NA	NA	NA		NA		-
STLC I	mg/l	5		NA	NA	NA		NA		
J.S. EPA	mg/l	5		NA	NA	NA		NA		
TCLP Limits										
Natasi NA N		L AID No.								
Notes: NA-N See TC 1G	or Anai	yzed, ND-Not D ample, @ see TP	Jetected, NF-I 2-1 for resamp	Not Found, le	na-Not Ava	ible				
irst Water S										
-irst vvater s	Sample			<del></del>						
C-2	πg/l	ND (0.003)	ND (0.100)	20.0	NA	NA	0.140	0.410	0.510	2
i	- 1									
76 r	mg/l	0.010	ND (0.100)	0.530			0.001	0.003	0.006	0.00
			ND (0.100)	0,530			0.001	0.003	0.006	0,00
Second Water		6		0.530 NA	3.4	• *		0.003 ND(0.0005)		0.00 ND(0.0005)
Gecond Water	Sample	e NA				· ·				ND(0.0005)
Gecond Water	Sample mg/l	9 NA 0.004	NA	NA	NA	NA	ND(0.0005)	ND(0.0005)	ND(0.0005)	
Gecond Water	Sample mg/l mg/l	0.004 ND (0.003)	NA ND (0.100)	NA 3.8	NA	NA	ND(0.0005) 0.068	ND(0.0005) 0.059	ND(0.0005) 0.073	ND(0.0005)
Gecond Water G1-1 r G2-1 r G-1 r G-1 r	Sample mg/l mg/l mg/l	0.004 ND (0.003) esel range	NA ND (0.100)	NA 3.8	NA	NA	ND(0.0005) 0.068	ND(0.0005) 0.059	ND(0.0005) 0.073	ND(0.0005) 0.44
G1-1 rG2-1 rG6-1 r	Sample ng/l ng/l ng/l l as did	e NA 0.004 ND (0.003) esel range	NA ND (0.100)	NA 3.8	NA	NA	ND(0.0005) 0.068	ND(0.0005) 0.059	ND(0.0005) 0.073	ND(0.0005)
G1-1 r G2-1 r G-1 r G2-1 r G-1 r Galifornia M	Sample ng/l ng/l ng/l l as did	e NA 0.004 ND (0.003) esel range	NA ND (0.100) ND (0.100)	NA 3.8 0.160	NA NA	NA	ND(0.0005) 0.068	ND(0.0005) 0.059 0.0009	ND(0.0005) 0.073	ND(0.0005) 0.44 0.003
Gecond Water C1-1  G2-1  G6-1  Quantitated California MacContaminan	Sampling/I mg/I mg/I as die	e	NA ND (0.100) ND (0.100)	NA 3.8 0.160	NA NA	NA NA	ND(0.0005) 0.068 ND(0.0005) 0.0010	ND(0.0005) 0.059 0.0009	ND(0.0005) 0.073 0.0006	0.003 0.44 0.003
C1-1 r C2-1 r 6-1 r Quantitated	Sampling/I mg/I mg/I as die	e	NA ND (0.100) ND (0.100)	NA 3.8 0.160	NA NA	NA NA	ND(0.0005) 0.068 ND(0.0005)	ND(0.0005) 0.059 0.0009	ND(0.0005) 0.073 0.0006	ND(0.0005) 0.44 0.003
econd Water C1-1   r C2-1   r 6-1   r Quantitated allifornia M. Contaminant rimary S. EPA GLs *-Effective Dr	Sample mg/I mg/I mg/I l as did aximum t Level	e	NA ND (0.100) ND (0.100)  na na na na	NA 3.8 0.160	NA NA na ded in more	NA NA na than 10% of	ND(0.0005)  0.068  ND(0.0005)  0.0010  0.0050	0.059 0.0009	0.0006 0.0006 0.6800 0.7000	0.44 0.000 1.750 10.000

Table 2 Wilanco Soil Pile Sample Results

Soil Sample	Units								<del> </del>	<u> </u>
Constituent		Lead	Organic Lead	TPH gas	TPH diesel	TPH kerosene	Benzene	Toluene	Ethylbenzen	Total Xylenes
Soil Pile San	nples									
SS-1	mg/Kg	NA	NA	NA	ND (<1)	ND (<1)	NA	NA	NA	NA
SS-2	mg/Kg	NA	NA	NA			NA	NA	NA	NA
SS-3	mg/Kg	NA	NA	NA	2	ND (<1)	NA	NA	NA	NA
SS-4	mg/Kg		NA	NA	11	ND (<1)	NA	NA	NA	NA
SS-5	mg/Kg	NA	NA	NA		* *	NA	NA	NA	NA
SS-6	mg/Kg		NA	NA	3	* *	NA	NA	NA	NA
SS-7	mg/Kg		NA	NA	ND (<1)	ND (<1)	NA	NA	NA	NA
SS-8	mg/Kg		NA	ND (<1)	NA	NA	ND (<0.005)	ND (<0.005)	ND (<0.005)	ND (<0.005)
SS-9 *	mg/Kg		NA	7,500	NA	NA	12	59	<del></del>	
SS-10	mg/Kg	NA	NA	ND (<1)	NA	NA	ND (<0.005)	ND (<0.005)	ND (<0.005)	ND (<0.005)
California Ha	azardous	s Waste Co	nncentration 1	imits						
<u> </u>			- L	111110					<del> </del>	
TTLC	mg/Kg	1,000		NA	NA	NA	NA	NA	NA	NA
STLC	mg/l	5		NA	NA	NA	NA	NA	<del> </del>	NA
	mg/l	5		NA	NA	NA	0.5	NA	NA	NA
TCLP Limits		5		NA	NA	NA	0.5	NA	NA	NA

<sup>\*</sup> Treated and resampled 5/4/93. See Appendix 2 for results of composited samples SS-1 through SS-4.





Expanation

Soil Sample SS-2

O Composite Soil Sample SS-10



SOIL STOCKPILE SAMPLING LOCATIONS
WILANCO SITE

1077 Eastshore Blvd., Albany, California

 DRAWN BY: Brian Ho
 DATE: 6/25/92
 ENSR Project No. 7295-002

 CHKBY:
 REVISED: 11/20/92
 FIGURE NO.: 2

# **APPENDIX 1**



# Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 05/07/92 DATE REPORTED: 05/19/92

LABORATORY NUMBER: 107328

CLIENT: ENSR CORPORATION

PROJECT ID: 7295 002 100

LOCATION: WILANCO

RESULTS: SEE ATTACHED

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Reviewed

iewed

Berkeley Wilmington

Los Angeles



LOCATION: WILANCO

DATE SAMPLED: 05/07/92
DATE RECEIVED: 05/07/92
DATE ANALYZED: 05/16/92
DATE REPORTED: 05/19/92

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
107328-004	TC 2C	250(16)	150(80)	ND(80)	4200(80)	3100(80)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, % <1
RECOVERY, % 102



 LABORATORY NUMBER: 107328
 DATE SAMPLED: 05/07/92

 CLIENT: ENSR CORPORATION
 DATE RECEIVED: 05/07/92

 PROJECT ID: 7295 002 100
 DATE ANALYZED: 05/11/92

 LOCATION: WILANCO
 DATE REPORTED: 05/19/92

ANALYSIS: LEAD

ANALYSIS METHOD: EPA 7420

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
107328-001	T6A	7	mg/Kg	3
107328-002	TC 2A	ND	mg/Kg	3
107328-003	TC 2B	8	mg/Kg	3
107328-004	TC 2C	13	mg/Kg	3

ND = Not detected at or above reporting limit.

# QA/QC SUMMARY:

RPD, %	3
RECOVERY, %	94



LABORATORY NUMBER: 107328

CLIENT: ENSR CORPORATION

PROJECT ID: 7295 002 100

LOCATION: WILANCO

DATE SAMPLED: 05/07/92

DATE RECEIVED: 05/13/92

DATE ANALYZED: 05/13/92

ANALYSIS: ORGANIC LEAD ANALYSIS METHOD: EPA 7420

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
107328-001	T 6 A	ND	mg/Kg	0.5
107328-002	TC 2A	ND	mg/Kg	0.5
107328-003	TC 2B	ND	mg/Kg	0.5
107328-004	TC 2C	ND	mg/Kg	0.5

ND = Not detected at or above reporting limit.

## QA/QC SUMMARY:

RPD, %
RECOVERY, %
114



LOCATION: WILANCO

DATE SAMPLED: 05/07/92
DATE RECEIVED: 05/07/92
DATE ANALYZED: 05/13/92
DATE REPORTED: 05/19/92
DATE REVISED: 05/21/92

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE (ug/Kg)	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
107328-001	ТбА	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)
107328-002	TC 2A	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)
107328-003	TC 2B	42(1)	ND(5)	ND(5)	460(5)	700(5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

#### QA/QC SUMMARY

RPD, %
RECOVERY, %
92



LOCATION: WILANCO

DATE SAMPLED: 05/07/92
DATE RECEIVED: 05/07/92
DATE ANALYZED: 05/13/92
DATE REPORTED: 05/19/92
DATE REVISED: 05/21/92

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020 Extraction by EPA 5030 Purge and Trap

LAB ID	SAMPLE ID	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES	REPORTING LIMIT *
		(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
107328-005	TC 1A	ND	ND	ND	ND	5
107328-006	TC 1B	ND	ND	ND	ND	5
107328-007	TC 1C	ND	ND	ND	ND	5
107328-008	TC 1D	ND	ND	ND	ND	5
107328-009	TC 1E	ND	ND	ND	ND	5
107328-010	TC 1F	ND	ND	ND	ND	5

ND = Not detected at or above reporting limit.

## QA/QC SUMMARY

RPD, %
RECOVERY, %
92

<sup>\*</sup> Reporting Limit applies to all analytes.



LOCATION: WILANCO

DATE SAMPLED: 05/07/92
DATE RECEIVED: 05/07/92
DATE EXTRACTED: 05/11/92
DATE ANALYZED: 05/12-13/92

DATE REPORTED: 05/19/92

# Extractable Petroleum Hydrocarbons in Soils & Wastes California DOHS Method LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
107328-005	TC 1A	* *	4	1
107328-006	TC 1B	ND	ND	1
107328-007	TC 1C	***	80	1
107328-008	TC 1D	ND	ND	1
107328-009	TC 1E	ND	ND	1
107328-010	TC 1F	ND	ND	· <b>1</b>

ND = Not Detected at or above reporting limit.

# QA/QC SUMMARY

LABORATORY CONTROL SAMPLE, % RECOVERY 96

<sup>\*</sup> Reporting limit applies to all analytes.

<sup>\*\*</sup> Quantitated as diesel range

**CHAIN OF CUSTODY RECORD** 

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§				Field Logbo	ok No.					Τ,	7	Τ,	/ /		
<u>L</u>	500210	<i></i>		<u> </u>				_/				. /			
Sampler: (Signal)			C	Chain of Cust	ody Tape No.			/.		/ 、					
Wayne	1. (M)	yamı		<del></del>	<u> </u>		/		/				/ /	/	
Sample No./ Identification	Date	Time	Lab \$a Numi		Type of Sample							REMAI	RKS		
T6A	5/7/92	11: 45	10732	8-1	So.1		Х	X	×	X		ĺ			<del></del>
TCZA		11:50		-5			χ	X	X	Х					
TC 2B		11:55		-3			×	Χ	X	X					
TC2C		11:56		-4	·		X	х	X	X					
TCIA		14:20		-<				X			X				
TC 18		14:30	<del></del>	-6			<u> </u>	x	<u> </u>		x				··
TCIC		14:35		F-7	<del></del>	<del></del>	<u>.</u>	Х			x		ļ		<u></u> _
TCID Relinquished by	: (Signature	14:40		-8	Date	7:	1	X			K		<u> </u>	<u> </u>	1 =:
Warne A.	annan	~			5/7/92	Time 3: 44	Recei	ved by	. (Sign	ature)				Date	Time
Relinquished by	: (Signature	9)			Date	Time	Recei	ved by	: (Sign	ature)				Date	Time
Relinquished by	: (Signature	<del>)</del>			Date	Time	Recei	yed for	Labor	atory;	(Signa	ture)		Date 5/7/92	Time
Sample Disposa	l Method:				Disposed	of by: (Sigi	nature)	$\int V$	V		,			Date	Time
SAMPLE COLLE	CTOR				ANALYTIC	AL LABOR	ATORY							EP	KR
-															<u> </u>
" 1,974-3-84.	<u> </u>						<del></del>	<del></del>			<del></del>	···			

**CHAIN OF CUSTODY RECORD** 

Client/Project N	Project l	ocation			_	7						7			
WIANCE	2										Α	NALYS	SES		
Project No.				Field Logbo	ook No.				1	/	7	7	7	7	
729500															
Sampler: (Sign.	ature)			Chain of Cus	tody Tape No.			7							
Warme.	1 ani	juni_						الم الم	Y ,	/ ,	/ ,	/ ,	/ /		
Sample No./ Identification	Date	Time	Lab S	ample nber		Type of Sample		Sil July						REMAI	RKS
TCIE	5/7/92	1445	10732	8-9	s <sub>o</sub> /		X	×							
TCIF		1450		-10	t i		X	X							
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# Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 9471O, Phone (415) 486-0900

DATE RECEIVED: 05/06/92 DATE REPORTED: 05/21,22/92

LABORATORY NUMBER: 107320

CLIENT: ENSR

PROJECT ID: 7295 002 100

LOCATION: WILANCO

RESULTS: SEE ATTACHED

Řevi

Berkeley Wilmington Los Angeles



CLIENT: ENSR

PROJECT ID: 7295 002 100

LOCATION: WILANCO

DATE SAMPLED: 05/06/92 DATE RECEIVED: 05/06/92 DATE ANALYZED: 05/14/92

DATE REPORTED: 05/21/92

Total Volatile Hydrocarbons with BTXE in Soils & Wastes
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
		(mg/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)	(ug/Kg)
107320-3	т6 В	ND(1)	ND(5)	ND (5)	ND(5)	ND(5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %
RECOVERY, %
92



CLIENT: ENSR

PROJECT ID: 7295 002 100

LOCATION: WILANCO

DATE SAMPLED: 05/06/92

DATE RECEIVED: 05/06/92 DATE ANALYZED: 05/11/92

DATE REPORTED: 05/21/92

ANALYSIS: LEAD

ANALYSIS METHOD: EPA 7420

LAB ID SAMPLE ID RESULT UNITS REPORTING LIMIT

107320-3 T6 B 46 mg/Kg 3

ND = Not detected at or above reporting limit.

QA/QC SUMMARY:

RPD, %
RECOVERY, %
94



CLIENT: ENSR

PROJECT ID: 7295 002 100

LOCATION: WILANCO

DATE SAMPLED: 05/06/92 DATE RECEIVED: 05/06/92

DATE ANALYZED: 05/21/92

DATE REPORTED: 05/22/92

ANALYSIS: ORGANIC LEAD

ANALYSIS METHOD: CA DHS METHOD, LUFT MANUAL OCT 1989

LAB ID CLIENT ID RESULT UNITS REPORTING LIMIT

107320-3 T6 B ND mg/Kg 0.5

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

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RPD, %

7

RECOVERY, %

105



CLIENT: ENSR

PROJECT ID: 7295 002 10

LOCATION: WILANCO

DATE SAMPLED: 05/06/92 DATE RECEIVED: 05/06/92 DATE ANALYZED: 05/16/92

DATE REPORTED: 05/21/92

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions TVH by California DOHS Method/LUFT Manual October 1989 BTXE by EPA 5030/8020

LAB ID	SAMPLE	ID	TVH AS GASOLINE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
			(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
107320-1	TC 2		20,000	140	410	510	2,900
107320-2	Т6		530	1	3	6	37

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %

RECOVERY, %

105



CLIENT: ENSR

PROJECT ID: 7295 002 100

LOCATION: WILANCO

DATE SAMPLED: 05/06/92

DATE RECEIVED: 05/06/92

DATE ANALYZED: 05/12/92 DATE REPORTED: 05/21/92

ANALYSIS: LEAD

ANALYSIS METHOD: EPA 7421

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
107320-1	TC 2	ND	ug/L	3
107320-2	Т6	10	ug/L	3

ND = Not detected at or above reporting limit.

QA/QC SUMMARY:

RPD, %
RECOVERY, %
102



CLIENT: ENSR

PROJECT ID: 7295 002 100

LOCATION: WILANCO

DATE SAMPLED: 05/06/92

DATE RECEIVED: 05/06/92 DATE ANALYZED: 05/13/92

DATE REPORTED: 05/21/92

ANALYSIS: ORGANIC LEAD

ANALYSIS METHOD: CA DHS METHOD, LUFT MANUAL OCT 1989

LAB ID	CLIENT ID	RESULT	UNITS	REPORTING LIMIT
107320-1	TC 2	ND	ug/L	100
107320-2	Т6	ND	ug/L	100

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

RPD, %

<1

RECOVERY, %

115

**CHAIN OF CUSTODY RECORD** 

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Sample Disposal Method			Disposed	of by: ( <i>Signa</i>	ture)	St	M	7				Date	Time		
SAMPLE COLLE	CTOR				ANALYTICA	AL LABORA	TORY						<u>.</u>		
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# Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

DATE RECEIVED: 05/12/92 DATE REPORTED: 05/26/92

LABORATORY NUMBER: 107370

CLIENT: ENSR CORPORATION

PROJECT ID: 7295 002 100

LOCATION: WILANCO

RESULTS: SEE ATTACHED

Revi

Berkeley Wilmington Los Angeles



LOCATION: WILANCO

DATE SAMPLED: 05/12/92
DATE RECEIVED: 05/12/92
DATE ANALYZED: 05/18-19/92
DATE REPORTED: 05/26/92

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions TVH by California DOHS Method/LUFT Manual October 1989 BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE	BENZENE	TOLUENE	ETHYL BENZENE	TOTAL XYLENES
		(ug/L)	(ug/L)	(ug/L)	(ug/L)	( ug / L )
107370-001	TC1 - 1	NR	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
107370-002	TC2-1	3,800(50)	68(0.5)	59(0.5)	73(0.5)	440(0.5)
107370-003	Т6-1	160(50)	ND(0.5)	0.9(0.5)	0.6(0.5)	3.7(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

NR = Not Requested

QA/QC SUMMARY

RPD, % <1
RECOVERY, % 102



LOCATION: WILANCO

DATE SAMPLED: 05/12/92
DATE RECEIVED: 05/12/92
DATE EXTRACTED: 05/14/92
DATE ANALYZED: 05/15/92
DATE REPORTED: 05/26/92

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT	1 D	KEROSENE RANGE	DIESEL RANGE	REPORTING LIMIT*	
	• • • • • • • • •		(ug/L)	(ug/L)	(ug/L)	
107370-001	TC1 - 1		* *	3,400	5 0	

ND = Not detected at or above reporting limit.

\* Reporting limit applies to all analytes.

\*\* Quantitated as diesel range

# QA/QC SUMMARY

RPD, %	11					
RECOVERY, %	107					



 LABORATORY NUMBER: 107370
 DATE SAMPLED: 05/12/92

 CLIENT: ENSR CORPORATION
 DATE RECEIVED: 05/12/92

 PROJECT ID: 7295 002 100
 DATE ANALYZED: 05/21/92

 LOCATION: WILANCO
 DATE REPORTED: 05/26/92

ANALYSIS: LEAD

ANALYSIS METHOD: EPA 7421

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
107370-002	TC 2 - 1	4	ug/L	3
107370-003	T6 - 1	ND	ug/L	3

ND = Not detected at or above reporting limit.

## QA/QC SUMMARY:

RPD, % <1
RECOVERY, % 99



 LABORATORY NUMBER: 107370
 DATE SAMPLED: 05/12/92

 CLIENT: ENSR CORPORATION
 DATE RECEIVED: 05/12/92

 PROJECT ID: 7295 002 100
 DATE ANALYZED: 05/13/92

 LOCATION: WILANCO
 DATE REPORTED: 05/26/92

ANALYSIS: ORGANIC LEAD

ANALYSIS METHOD: CA DHS METHOD, LUFT MANUAL OCT 1989

LAB ID	SAMPLE ID	RESULT	UNITS	REPORTING LIMIT
107370-002	2 TC2-1	ND	ug/L	100
107370-003	3 T6-1	ND	ug/L	100

ND = Not detected at or above reporting limit.

# QA/QC SUMMARY:

RPD, %

RECOVERY, %

115

**CHAIN OF CUSTODY RECORD** 

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DATE RECEIVED: 09/08/92 DATE REPORTED: 09/21/92

LABORATORY NUMBER: 108576

CLIENT: ENSR CORPORATION

PROJECT ID: 7295-002-100

LOCATION: WILANCO

RESULTS: SEE ATTACHED

Berkeley

Los Angeles



LOCATION: WILANCO

DATE SAMPLED: 09/08/92
DATE RECEIVED: 09/08/92
DATE EXTRACTED: 09/14/92
DATE ANALYZED: 09/16/92
DATE REPORTED: 09/21/92

# Extractable Petroleum Hydrocarbons in Soils & Wastes California DOHS Method LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
108576-	TC-1G	**	6	1

ND = Not Detected at or above reporting limit.

- \* Reporting limit applies to all analytes.
- \*\* Quantitated as diesel range.

QA/QC SUMMARY	
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RPD, %	15
RECOVERY, %	57

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Sample No./	Date	Time	Lab Sar Numb								REMAI	RKS				
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DATE RECEIVED: 6/19/92 DATE REPORTED: 7/06/92 DATE REVISED: 11/16/92

Joannel Jeath
iewed by

LABORATORY NUMBER: 107728

CLIENT: ENSR CORPORATION

PROJECT ID: 7295-002.100

LOCATION: WILANCO

RESULTS: SEE ATTACHED

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Berkeley Los Angeles



LABORATORY NUMBER: 107728 CLIENT: ENSR CORPORATION PROJECT ID: 7295-002.100

LOCATION: WILANCO

DATE SAMPLED: 6/19/92 DATE RECEIVED: 6/19/92 DATE ANALYZED: 6/26/92 DATE REPORTED: 7/06/92 DATE REVISED: 11/16/92

Total Volatile Hydrocarbons with BTXE in Soils & Waste TVH by California DOHS Method/LUFT Manual October 1989 BTXE by EPA 5030/8020

LAB ID	SAMPLE	ID	TVH AS GASOLINE (mg/Kg)	BENZENE (mg/Kg)	TOLUENE	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
107728-010	SS-9		7,500	12	59	230	1,000

ND = Not detected at or above reporting limit; Reporting limit
 indicated in parentheses.

QA/QC SUMMARY						
RPD, %	6					
RECOVERY, %	97					



LABORATORY NUMBER: 107728 CLIENT: ENSR CORPORATION PROJECT ID: 7295-002.100

LOCATION: WILANCO

DATE SAMPLED: 6/19/92 DATE RECEIVED: 6/19/92 DATE ANALYZED: 6/20/92 DATE REPORTED: 7/06/92 DATE REVISED: 11/16/92

Total Volatile Hydrocarbons with BTXE in Soils & Waste TVH by California DOHS Method/LUFT Manual October 1989 BTXE by EPA 5030/8020

LAB ID	SAMPLE I	ID TVH AS GASOLINE (mg/Kg)	BENZENE (ug/Kg)	TOLUENE	ETHYL BENZENE (ug/Kg)	TOTAL XYLENES (ug/Kg)
107728-001	TP2-1	2	ND(5)	ND(5)	12	ND(5)
107728-009	SS-8	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)
107728-011	SS-10	ND(1)	ND(5)	ND(5)	ND(5)	ND(5)

ND = Not detected at or above reporting limit; Reporting limit
 indicated in parentheses.

QA/QC SUMMARY	
RPD, %	6
RECOVERY, %	90



LABORATORY NUMBER: 107728 CLIENT: ENSR CORPORATION PROJECT ID: 7295-002.100

LOCATION: WILANCO

DATE SAMPLED: 6/19/92 DATE RECEIVED: 6/19/92 DATE EXTRACTED: 6/22/92

DATE ANALYZED: 6/23-6/24/92

DATE REPORTED: 7/06/92 DATE REVISED: 11/16/92

#### Extractable Petroleum Hydrocarbons in Soils & Wastes California DOHS Method LUFT Manual October 1989

LAB ID	SAMPLE ID	KEROSENE RANGE (mg/Kg)	DIESEL RANGE (mg/Kg)	REPORTING LIMIT* (mg/Kg)
107728-002	SS-1	ND	ND	1
107728-003	SS-2	ND	8	1
107728-004	SS-3	ND	2	1
107728-005	SS-4	ND	11	1
107728-006	SS-5	**	9	1
107728-007	SS-6	**	3	1
107728-008	SS-7	ND	ND	10

ND = Not Detected at or above reporting limit.

OA/	'ስሮ	SUMMARY	۰
U-1	$\sim$	O OTH TOTAL	

RPD, %	8						
RECOVERY, %	88						

<sup>\*</sup>Reporting limit applies to all analytes.
\*\* Quantitated as diesel range.

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# **APPENDIX 2**

DATE RECEIVED: 05/04/93 DATE REPORTED: 05/18/93

LABORATORY NUMBER: 110817

CLIENT: ENSR

PROJECT ID: 7295.002.100

LOCATION: 1077 EAST SHORE FREEWAY

RESULTS: SEE ATTACHED

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Berkeley Los Angeles



LABORATORY NUMBER: 110817 CLIENT: ENSR CORPORATION PROJECT ID: 7295.002.100

LOCATION: 1077 EAST SHORE FREEWAY

DATE SAMPLED: 05/04/93 DATE RECEIVED: 05/04/93 DATE EXTRACTED: 05/12/93 DATE ANALYZED: 05/13/93 DATE REPORTED: 05/18/93

TCLP Total Volatile Hydrocarbons with BTXE
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
110817-9	COMP SS-1,2,3,4	70	ND(0.5)	0.9	ND(0.5)	ND(0.5)
110817-10	COMP SS-5,6,7,8	60	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY	
RPD, %	3
RECOVERY, %	90



LABORATORY NUMBER: 110817 CLIENT: ENSR CORPORATION PROJECT ID: 7295.002.100

LOCATION: 1077 EAST SHORE FREEWAY

DATE SAMPLED: 05/04/93 DATE RECEIVED: 05/04/93 DATE ANALYZED: 05/07/93 DATE REPORTED: 05/18/93

ANALYSIS: ORGANIC LEAD

ANALYSIS METHOD: CA DHS METHOD, LUFT MANUAL OCT 1989

LAB ID CLIENT ID RESULT UNITS REPORTING LIMIT

110817-10 COMP SS-5,6,7,8 2.4 mg/Kg 0.5

#### QA/QC SUMMARY

RPD, %
RECOVERY, %
102

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