

March 9, 1992  
SCI 615.002

92 MAR 13 AM 11:14

Mr. Paul Smith  
Alameda County Health Care Services Agency  
80 Swan Way, Room 200  
Oakland, California 94612

Quarterly Groundwater Monitoring Report  
February 1992 - 4th Quarterly Event  
Dignity Housing West  
15th and ~~Castro~~ Streets  
Oakland, California

690 - 94612

Dear Mr. Smith:

This letter transmits the results of the fourth quarter groundwater monitoring event performed in February 1992 at the referenced property. Groundwater monitoring is being performed in accordance with Alameda County Health Care Services Agency (ACHCSA) and Regional Water Quality Control Board (RWQCB) requirements after soil contamination was encountered beneath two underground storage tanks. The tanks and some contaminated soils were removed in 1987. Additional contaminated soils were removed in 1991.

This latest groundwater monitoring event consisted of (1) measuring groundwater levels, (2) purging five gallons of water from each of the wells, and (3) sampling the wells with a pre-cleaned disposable bailer. The water samples were retained in glass containers and preserved with hydrochloric acid. The containers were placed in ice filled coolers and remained iced until delivery to the analytical laboratory. Chain-of-Custody records accompanied the samples to the laboratory. A site plan (Plate 1) showing the locations of the wells and the groundwater gradient at the site on February 13, 1992 is attached.

Analytical testing was performed by Curtis & Tompkins, Ltd., a State of California Department of Health Services (DHS) certified analytical laboratory which has performed analytical services for each monitoring event. The analytical tests included:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector),

■ Subsurface Consultants, Inc.

Mr. Paul Smith  
 SCI 615.002  
 March 9, 1992  
 Page 2

2. Total extractable hydrocarbons (TEH), sample preparation and analysis using EPA Methods 3550 (sonication) and 8015 (modified gas chromatograph coupled to a flame ionization detector),
3. Benzene, toluene, xylenes and ethylbenzene (BTXE), sample preparation and analysis using EPA Methods 5030 and 8020 (gas chromatograph coupled to a flame ionization detector), and
4. Purgeable halocarbons (EPA 8010), sample preparation and analysis using EPA methods 5030 (purge and trap) and 8010 (gas chromatograph coupled to a electrolytic conductivity detector).

Copies of the analytical test reports for the February 1992 sampling event are attached. The results of the analytical testing and groundwater level measurements are summarized in Tables 1 and 2, respectively.

Table 1. Analytical Test Results

Well	Sample Date	TVH <sup>1</sup> ug/l <sup>7</sup>	TEH <sup>2</sup> ug/l	B <sup>3</sup> ug/l	T ug/l	X ug/l	E ug/l	Chloro- Form ug/l	PCE <sup>5</sup> ug/l	Other <sup>6</sup> EPA 8010 Chemicals ug/l
MW-1	05/08/91	<50	<50	<1	<1	<1	<1	1.2	2.5	<1 <sup>8</sup>
	08/13/91	<50	<50	<1	<1	<1	<1	<1	<1	<1
	11/08/91	<50	<50	<0.5	<0.5	<0.5	<0.5	1.4	3.3	<1
	02/13/92	<50	<50					<1	2.6	<1
MW-2	05/08/91	<50	<50	<1	<1	<1	<1	<1	<1	<1
	08/13/91	<50	<50	<1	<1	<1	<1	<1	<1	<1
	11/08/91	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	1.3	<1
	02/13/92	<50	<50					<1	<1	<1
MW-3	05/08/91	<50	<50	<1	<1	<1	<1	<1	1.1	<1
	08/13/91	<50	<50	<1	<1	<1	<1	<1	<1	<1
	11/08/91	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
	02/13/92	<50	<50	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
Blank	11/08/91							1.2	<1	2.3 <sup>9</sup>
	02/13/92							<1	<1	<1

1 TVH = Total Volatile Hydrocarbons  
 2 TEH = Total Extractable Hydrocarbons  
 3 BTXE = benzene, toluene, xylene and ethylbenzene  
 4 PCE = Tetrachloroethylene  
 5 For a complete list of other EPA 8010 chemicals, refer to test reports  
 6 ug/l = micrograms per liter or parts per billion (ppb)  
 7 Detection limits for EPA 8010 chemicals vary from 1.0 to 2.0 ug/l  
 8 Methylene chloride, a common laboratory solvent

Table 2. Groundwater Elevations

<u>Well</u>	<u>Date</u>	<u>Top of Casing Elevation<sup>1</sup></u>	<u>Depth to Groundwater (ft)</u>	<u>Groundwater Elevation (ft)<sup>1</sup></u>
MW-1	05/08/91	27.62	26.82	0.80
	08/13/91		27.06	0.56
	11/08/91		27.05	0.57
	02/13/92		26.58	1.04
MW-2	05/08/91	27.97	26.88	1.09
	08/13/91		27.11	0.86
	11/08/91		27.11	0.86
	02/13/92		26.85	1.12
MW-3	05/08/91	29.90	28.54	1.31
	08/13/91		28.82	1.08
	11/08/91		28.88	1.02
	02/13/92		28.92	0.98

<sup>1</sup> Elevations are referenced to project datum established by Bates and Bailey on the land survey and topographic plan of February 25, 1991.

The groundwater level data indicate that the groundwater flow direction is toward the north at a gradient of approximately 0.2 percent. While the groundwater flow direction has varied from being toward the west to toward the north, the gradient has remained relatively flat.

## Conclusions

### A. Groundwater Quality

The groundwater study has consisted of sampling and analyzing groundwater from the property for one hydrogeologic cycle. No detectible concentrations of petroleum hydrocarbons nor BTXE have been detected at concentrations above their respective detection limits during the study. On this basis we conclude that groundwater quality in the tank area has not been significantly degraded as a result of previous releases.

During the study, low concentrations of chloroform (1.4 ug/l) and tetrachloroethylene (PCE 3.3 ug/l) have also been detected. The presence of chloroform is believed to be related to laboratory contamination as it was also detected in the laboratory method blank. PCE contamination is suspected to be from an upgradient source since no PCE sources have been detected on-site.

Mr. Paul Smith  
SCI 615.002  
March 9, 1992  
Page 4

**B. Soil Remediation**

Soil remediation activities were conducted at the site as previously described in a report dated July 2, 1991. Approximately 430 cubic yards of soil were excavated during and subsequent to tank removal. Confirmation samples obtained at the excavation limits did not contain total volatile or extractable hydrocarbons, benzene or ethylbenzene at concentrations above detection limits. Very low concentrations of toluene (7.4 ug/kg) and xylene (7.3 ug/kg) were left in-place at the bottom and west side walls of the excavation.

Contaminated soils were disposed of at the Mountain View landfill and the resulting excavation was backfilled with clean soil. The soil was placed in thin lifts and compacted to at least 90 percent relative compaction. Approximately one half of the excavation area was then surfaced with either asphalt pavement or concrete sidewalk sections. The remaining portion is now covered with a slab-on-grade floor for a new structure.

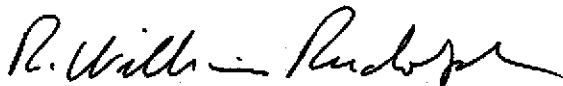
**Site Closure**

On behalf of Dignity Housing West, we are formally petitioning the ACHCSA to present the results of tank closure, soil remediation and the groundwater study to the RWQCB with a site closure recommendation.

Please call if you need additional information or if you have any questions.

Yours very truly,

Subsurface Consultants, Inc.



R. William Rudolph  
Geotechnical Engineer 741 (expires 12/31/92)

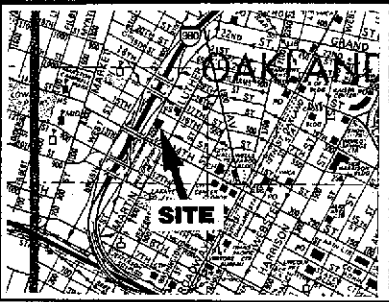
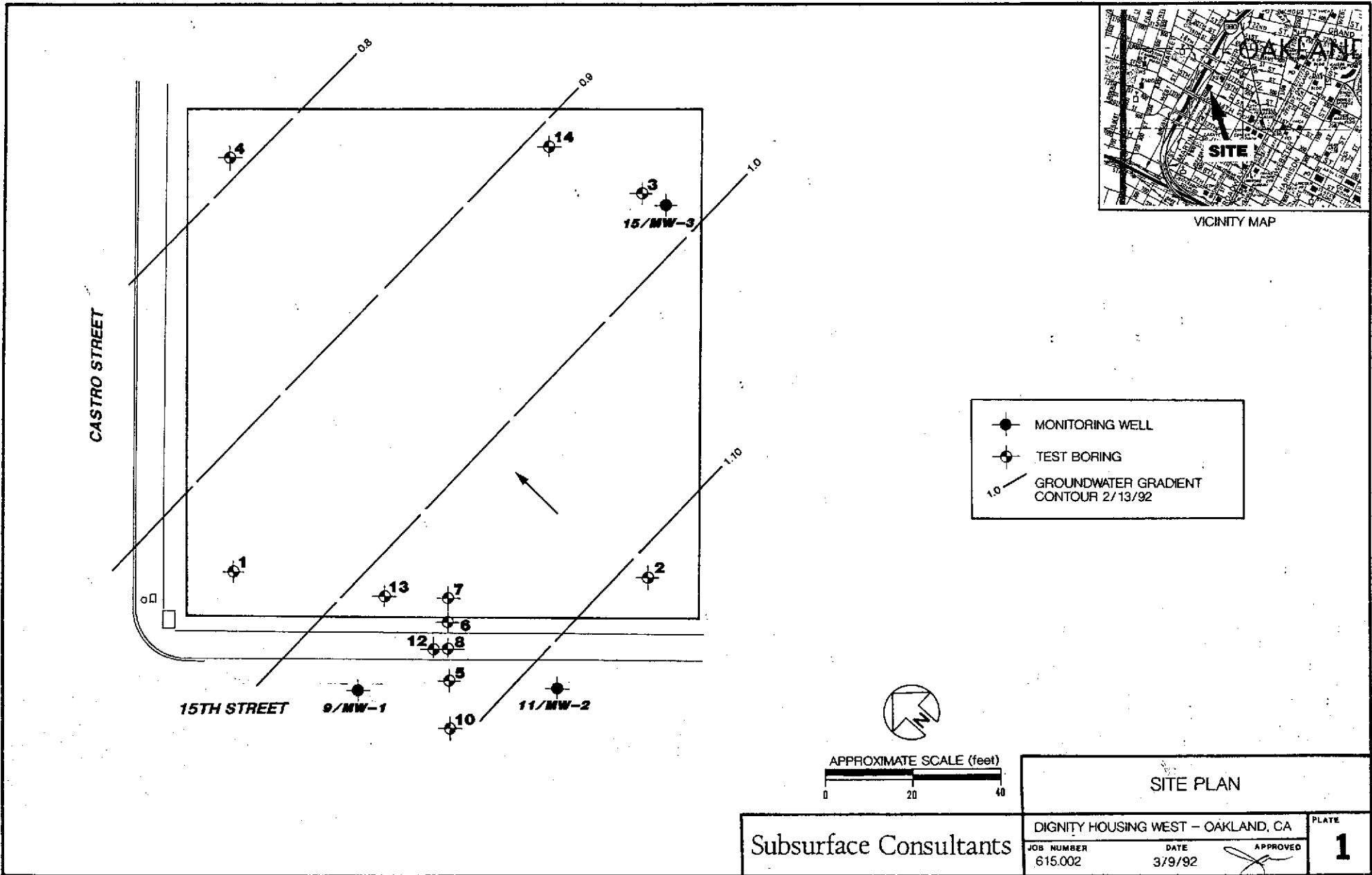
JNA:RWR:JPB:ddh

Attachments: Site Plan - Plate 1  
Analytical Test Reports  
Chain-of-Custody Forms

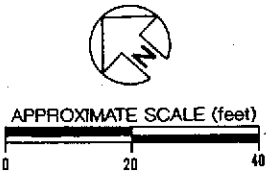
Mr. Paul Smith  
SCI 615.002  
March 9, 1992  
Page 5

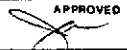
cc: Mr. Richard Hiatt  
RWQCB  
1800 Harrison  
Oakland, California

Ms. Fey Tsen  
Tsen & Associates  
4 Embarcadero Center, Suite 3400  
San Francisco, California 94111-4105



- MONITORING WELL
- TEST BORING
- GROUNDWATER GRADIENT CONTOUR 2/13/92



Subsurface Consultants			SITE PLAN		PLATE
			DIGNITY HOUSING WEST - OAKLAND, CA		1
JOB NUMBER		DATE		APPROVED	
615.002		3/9/92			



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

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

DATE RECEIVED: 02/14/92  
DATE REPORTED: 02/25/92

LABORATORY NUMBER: 106367

CLIENT: SUBSURFACE CONSULTANTS

PROJECT ID: 615.002

LOCATION: DIGNITY HOUSING WEST

RESULTS: SEE ATTACHED

*Kathleen Brien*  
Reviewed By

*[Signature]*  
Reviewed By

Berkeley

Wilmington

Los Angeles



LABORATORY NUMBER: 106567  
CLIENT: SUBSURFACE CONSULTANTS  
PROJECT ID: 615.002  
LOCATION: DIGNITY HOUSING WEST

DATE RECEIVED: 02/14/92  
DATE ANALYZED: 02/20/92  
DATE REPORTED: 02/25/92

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 (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
106567-1	MW 1	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
106567-2	MW 2	ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
106567-3	MW 3	ND(50)	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, %	<1
RECOVERY, %	87





LABORATORY NUMBER: 106567.106683  
CLIENT: SUBSURFACE CONSULTANTS  
PROJECT ID: 615.002  
LOCATION: DIGNITY HOUSING WEST

DATE RECEIVED: 02/14/92, 03/02/92  
DATE EXTRACTED: 02/21/92, 03/04/92  
DATE ANALYZED: 02/22/92, 03/04/92  
DATE REPORTED: 02/25/92, 03/06/92  
DATE REVISED: 03/09/92

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

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT* (ug/L)
106683-1	MW 1**	ND	ND	50
106567-2	MW 2	ND	ND	50
106567-3	MW 3	ND	ND	50

ND = Not detected at or above reporting limit.

\*Reporting limit applies to all analytes.

\*\*Sample received 3/2/92, extracted and analyzed 3/4/92, and reported on 3/6/92.

QA/QC SUMMARY

	RPD, %	RECOVERY, %
106567-2,3	<1	90
106683-1	3	59



LABORATORY NUMBER: 106567.1  
CLIENT: SUBSURFACE CONSULTANTS  
PROJECT ID: 615.002  
LOCATION: DIGNITY HOUSING WEST  
SAMPLE ID: MY 1

DATE RECEIVED: 02/14/92  
DATE ANALYZED: 02/19/92  
DATE REPORTED: 02/25/92

EPA 8010  
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	2.0
Trichlorofluoromethane	ND	20
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	2.6	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogates Recovery, %	80
------------------------	----

LABORATORY NUMBER: 106567-2  
 CLIENT: SUBSURFACE CONSULTANTS  
 PROJECT ID: 615.002  
 LOCATION: DIGNITY HOUSING WEST  
 SAMPLE ID: MW 2

DATE RECEIVED: 02/14/92  
 DATE ANALYZED: 02/19/92  
 DATE REPORTED: 02/23/92

EPA 8010  
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	2.0
Trichlorofluoromethane	ND	2.0
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %	83
-----------------------	----



LABORATORY NUMBER: 106567-3  
CLIENT: SUBSURFACE CONSULTANTS  
PROJECT ID: 615.002  
LOCATION: DIGNITY HOUSING WEST  
SAMPLE ID: MW 3

DATE RECEIVED: 02/14/92  
DATE ANALYZED: 02/19/92  
DATE REPORTED: 02/25/92

EPA 8010  
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	2.0
Trichlorofluoromethane	ND	20
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	1.0
Bromoform	ND	2.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

Surrogate Recovery, %

85



LABORATORY NUMBER: 106567  
CLIENT: SUBSURFACE CONSULTANTS  
PROJECT ID: 615.002  
LOCATION: DIGNITY HOUSING WEST  
SAMPLE ID: METHOD BLANK

DATE ANALYZED: 02/19/92  
DATE REPORTED: 02/25/92

EPA 8010  
Purgeable Halocarbons in Water

Compound	Result ug/L	Reporting Limit ug/L
Chloromethane	ND	2.0
Bromomethane	ND	2.0
Vinyl chloride	ND	2.0
Chloroethane	ND	2.0
Methylene chloride	ND	2.0
Trichlorofluoromethane	ND	20
1,1-Dichloroethene	ND	1.0
1,1-Dichloroethane	ND	1.0
cis-1,2-Dichloroethene	ND	1.0
trans-1,2-Dichloroethene	ND	1.0
Chloroform	ND	1.0
Freon 113	ND	1.0
1,2-Dichloroethane	ND	1.0
1,1,1-Trichloroethane	ND	1.0
Carbon tetrachloride	ND	1.0
Bromodichloromethane	ND	1.0
1,2-Dichloropropane	ND	1.0
cis-1,3-Dichloropropene	ND	1.0
Trichloroethylene	ND	1.0
1,1,2-Trichloroethane	ND	1.0
trans-1,3-Dichloropropene	ND	1.0
Dibromochloromethane	ND	1.0
2-Chloroethylvinyl ether	ND	2.0
Bromoform	ND	1.0
Tetrachloroethene	ND	1.0
1,1,2,2-Tetrachloroethane	ND	1.0
Chlorobenzene	ND	1.0
1,3-Dichlorobenzene	ND	1.0
1,2-Dichlorobenzene	ND	1.0
1,4-Dichlorobenzene	ND	1.0

ND = Not detected at or above reporting limit.

QA/QC SUMMARY

=====

Surrogate Recovery, %

=====

80

# CHAIN OF CUSTODY FORM

PROJECT NAME: Dignity Housing West  
 JOB NUMBER: 615.002 LAB: Curtis & Tompkins  
 PROJECT CONTACT: Bill Rudolph TURNAROUND: Normal  
 SAMPLED BY: CODea REQUESTED BY: \_\_\_\_\_

ANALYSIS REQUESTED							

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX				CONTAINERS				METHOD PRESERVED					SAMPLING DATE				NOTES	
		WATER	SOIL	WASTE	AIR	VOA	LITER	PINT	TUBE	HCL	H2SO4	HNO3	ICE	NONE	MONTH	DAY	YEAR	TIME		
																		HH		MM
	MW 1	X				4	1					X			02	13	92			
	MW 2	X				4	1					X			02	13	92			
	MW 3	X				4	1					X			02	13	92			

TWH(gas)/BTEX

TEH

SOLD

COMMENTS & NOTES:

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature) <u>Jaw</u> DATE/TIME <u>Feb-14-92/6:15</u>	RECEIVED BY: (Signature) _____ DATE/TIME _____
RELEASED BY: (Signature) _____ DATE/TIME _____	RECEIVED BY: (Signature) _____ DATE/TIME _____
RELEASED BY: (Signature) _____ DATE/TIME _____	RECEIVED BY: (Signature) _____ DATE/TIME <u>2-14-92 1615</u>

**Subsurface Consultants, Inc.**  
 171 12111 STREET, SUITE 201, OAKLAND, CALIFORNIA 94607  
 (510) 268-0461 • FAX: 510-268-0137

