



April 5, 1999

4249

Mr. Barney Chan Alameda County Health Care Services Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577

Former Chevron Service Station # 9-4612

3616 San Leandro Street Oakland, California

Dear Mr. Chan:

Re:

Enclosed is the Limited Soil Vapor Survey Report, dated March 31, 1999 that was prepared by Gettler-Ryan, Inc. for the above noted site. This report summarizes the results of a limited soil vapor survey to assess soil vapor concentrations beneath the existing warehouse building which is located on a portion of the above noted site.

Two soil borings were advanced adjacent to the existing warehouse building to an approximate depth of 3 feet below ground surface. Two soil vapor samples were collected using 6 Liter Summa canisters. As requested by your office, the soil vapor samples were analyzed for Toxic Organics by EPA Method TO-14.

Both vapor samples contained detectable concentrations of Organics with the results shown in Table 1. The soil vapor results were compared to the listed permissible exposure limit (PEL) found in the NIOSH guide to Chemical Hazards. Based on the data collected, it appears the reported results are less than the listed PELs for the contaminants detected. Therefore, the data indicates that concentrations of hydrocarbon vapors do not appear to pose a threat to human health or the environment.

If you have any questions or comments call me at (925) 842-9136.

Sincerely,

CHEYRON PRODUCTS COMPANY

Philip K. Briggs

Site Assessment and Remediation Project Manager



Chevron Products Company 6001 Bollinger Canyon Road Building L, Room 1110 PO Box 6004 San Ramon, CA 94583-0904

Philip R. Briggs
Project Manager
Site Assessment & Remediation
Phone 925 842-9136
Fax 925 842-8370

April 5, 1999 Mr. Barney Chan Former Chevron Service Station #9-4612 Page 2

Enclosure

Cc. Mr. Jack Ratto
PO Box 6032
Oakland, CA. 94603

Mr. Terry McIlraith 407 Castello Road Lafayette, CA 94549

Ms. Bette Owen, Chevron



LIMITED SOIL VAPOR SURVEY REPORT

at

Former Chevron Service Station #9-4612 3616 San Leandro Street Oakland, California

Report No. 346473.01

Prepared for:

Mr. Phil Briggs
Chevron Products Company
P.O. Box 6004
San Ramon, California 94583

Prepared by:

Gettler-Ryan Inc. 3164 Gold Camp Drive, Suite 240 Rancho Cordova, California 95670

(alf) 631-1314

Todd A. Del Frate
Staff Geologist

Stephen J. Carter Senior Geologist No. 5577

R.G. 5577

March 31, 1999

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LIMITED SOIL VAPOR SURVEY REPORT

at

Chevron Service Station #9-4612 3616 San Leandro Street Oakland, California

Report No. 346473.01

INTRODUCTION

This report summarizes the results of a limited soil vapor survey performed by Gettler-Ryan Inc. (GR) at the subject site (Figure 1). The work was performed at the request of Chevron Products Company (Chevron) to assess soil vapor concentrations beneath the existing warehouse building. The scope of work performed included: advancing two soil borings using a GeoProbe[®]; collecting soil vapor samples for chemical analysis; and preparing this report. The scope of work performed was approved by Alameda County Health Care Services Agency (ACHCSA) in a letter dated January 7, 1999 (Appendix A).

SITE DESCRIPTION

The site is a former Chevron Service Station located on the northern corner of San Leandro Street and 37th Avenue in Oakland, California. Former facilities consisted of a station building, two dispenser islands, three underground storage tanks (USTs), and one waste oil UST. Currently, a warehouse exists northwest of the former station building. The southeast portion of the former service station is vacant. Pertinent site features are shown on Figure 2.

FIELD ACTIVITIES

Field work was performed in accordance with the GR Site Safety Plan #346473.01, dated February 18, 1999. GR Field Methods and Procedures are included in Appendix B. Underground Service Alert (USA) was notified, and a private utility locator was contracted to clear the boring locations prior to GeoProbe® activities.

Two exploratory soil borings (VB-1 and VB-2) were advanced adjacent to the existing warehouse building on February 16, 1999, to an approximate depth 3 feet below ground surface (bgs). A hand auger was used to clear the borings to 2 feet below ground surface (bgs). The borings were

346473.01

advanced by Vironex Environmental Field Services (C57 #705927) using a Geoprobe® rig equipped with a 1.5-inch diameter sampler. A GR geologist observed the drilling activities, and collected soil vapor samples from the two borings for chemical analysis. Soil vapor samples were collected using 6 Liter Summa canisters. Locations of the borings are shown on Figure 2. The Geoprobe® equipment advances the sampler hydraulically, and does not generate any soil cuttings. Upon completion the cuttings from the hand augering were placed back in the borings.

CHEMICAL ANALYTICAL RESULTS

A total of two soil vapor samples were submitted for chemical analysis. Analyses were performed by Air Toxics LTD of Folsom, California (ELAP #1149). Copies of the laboratory reports and chain-of-custody forms are included in Appendix C. Soil vapor chemical analytical data are summarized in Table 1.

Chemical Analytical Procedures

As requested by ACHCSA, soil vapor samples submitted to the laboratory were analyzed for Toxic Organics by EPA Method TO-14.

Soil Vapor Chemical Analytical Results

Soil vapor sample VB-1 contained detectable concentrations of freon 12 (4.3 part per billion by volume, or ppbv), methylene chloride (0.68 ppbv), benzene (2.7 ppbv), trichloroethene (0.67 ppbv), toluene (5.2 ppbv), total xylene (3.32 ppbv), styrene (1.2 ppbv), 1,2,4-trimethylbenzene (0.79 ppbv), acetone (89 ppbv), 2-propanol (370 ppbv), and ethanol (17 ppbv).

Soil vapor sample VB-2 contained detectable concentrations of freon 12 (4.8 ppbv), chloromethane (1.1 ppbv), benzene (1.7 ppbv), toluene (5.8 ppbv), total xylenes (1.8 ppbv), acetone (12 ppbv), 2-propanol (38 ppbv), and ethanol (19 ppbv).

CONCLUSIONS

Soil vapor results were compared to the listed permissible exposure limit (PEL) found in the NIOSH Guide to Chemical Hazards. Based upon the analytical data collected during this investigation, it appears the reported results are less than the the listed PELs for the contaminants detected. As an example, benzene PEL is listed at 0.1 parts per million by volume or ppmv. Soil vapor sample VB-1 contained benzene at 0.0027 ppmv. This data indicates that concentrations of hydrocarbon vapors do not appear to pose a threat to human health or the environment.

346473.01

TABLE 1: SOIL VAPOR CHEMICAL ANALYTICAL DATA

Former Chevron Service Station #9-4612

3516 San Leandro Street

Oakland, California

		-	Methylene		Tri-		Total		1,2,4-Tri-	-			Chloro-
Sample ID	Date Collected	Freon 12 µg/l ppbv	•	Benzene µg/l ppbv	Chloroethene µg/l ppbv	Toluene µg/l ppbv	Xylenes μg/l ppbv	Styrene µg/l ppbv	methylbenzene µg/l ppbv	Acetone µg/l ppbv	2-propanol μg/l ppbv	Ethanol µg/l ppbv	methane µg/l ppbv
VB-1 ¹	2/16/99	0.022 4.3	0.002 0.68^2	0.009 2.7 ²	0.004 0.67^2	0.2 5.2	0.015 3.32^2	0.005 1.2^2	0.004 0.79 ²	0.215 89	0.924 370 ³	0.033 17	<0.001 <0.67
VB-2 ¹	2/16/99	0.024 4.8	<0.003 <0.76	0.006 1.7 ²	<0.004 <0.76	0.022 5,8	0.008 1.8^2	<0.003 <0.76	<0.004 <0.76	0.029 12	0.095 38	0.036 19	0.002 1.1 ²
		Freon 12 ppm	Methylene Chloride ppm	Benzene ppm	Tri- Chloroethene ppm	Toluene ppm	Total Xylenes ppm	Styrene ppm	1,2,4-Tri- methylbenzene ppm	Acetone ppm	2-propanol	Ethanol ppm	Chloro- methane ppm
	PEL	1,000	500	0.1	25	100	100	50	NA	250	200	NA	50

Explanation:

 $\mu g/l = micrograms/liter$

ppbv = parts per billion by volume

 μ g/l = ppbv*molecular weight/24055

PELs = Permissable Exposure Limit

ppm = parts per million

NA = not available

¹ All other compounds listed in Laboratory report were less than their respective reporting limit.

Analytical Laboratory

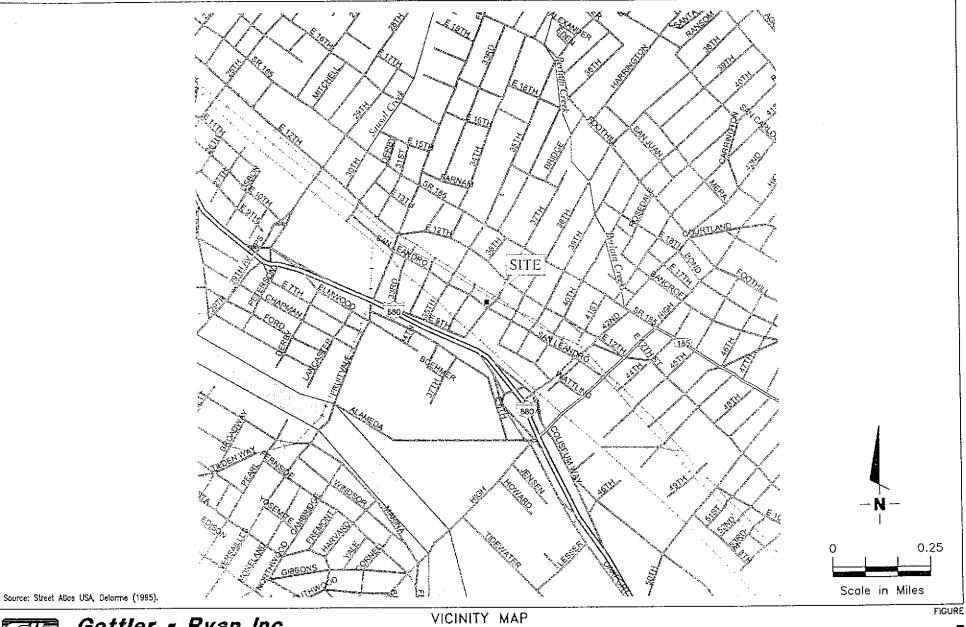
Air Toxics LTD. (ELAP #1149)

Analytical Methods

TO-14 = EPA Method TO-14

² Estimated value.

³ Exceeds instrument calibration range.





Gettler - Ryan Inc.

6747 Sierro Ct., Suite J Dublin, CA 94568

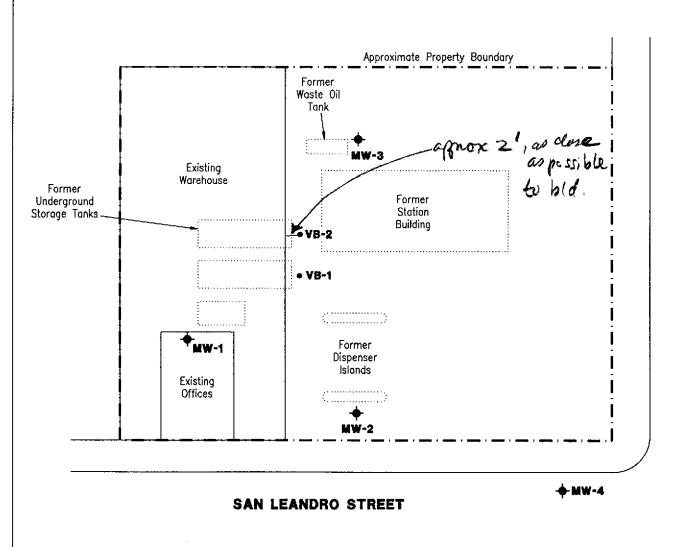
(925) 551-7555

Chevron Service Station No. 9-4612 3516 San Leandro Street Oakland, California

JOB NUMBER 346473

REVIEWED BY

DATE 12/98 REVISED DATE



Spoke WIC. Galantine

37TH AVENUE

EXPLANATION:

- Soil Vapor Sample Location
- Groundwater Monitoring Well





Source: Figure Modified From Drawing Provided By RRM Engineering.



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J Dublin, CA 94568

(925) 551-7555

SITE PLAN Chevron Service Station No. 9-4612 3516 San Leandro Street Oakland, California

DATE 12/98

03/99

JOB NUMBER 346473

REVIEWED BY

REVISED DATE

FIGURE

HEALTH CARE SERVICES

AGENCY



DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES ENVIRONMENTAL PROTECTION (LOP) 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577 (510) 567-6700 FAX (510) 337-9335

January 7, 1999 StID # 4249

Mr. Phil Briggs Chevron Products Co. 6001 Bollinger Canyon Rd., Bld. L Room 1110 P.O. Box 5004 San Ramon, CA 94583-0804

Re: Work Plan for Limited Soil Vapor Sampling at 3616 San Leandro St., Oakland CA 94601

Dear Mr. Briggs:

Our office has received and reviewed the January 5, 1999 Work Plan for a Limited Soil Vapor Survey prepared by Gettler-Ryan Inc. This work plan was prepared to satisfy our office's request to determine the potential of soil gas volatilization into the warehouse at this site. Prior groundwater contamination in the down-gradient well and initial qualitative observations indicated a potential exposure risk.

Upon review of the work plan, we find that it is acceptable with the following conditions:

- The soil vapor samples should be taken at an approximate depth of 3' bgs.
- The sampling method should be using a summa canister not a Tedlar bag.
- The analytical method for analysis should be TO14 or TO15.

These requirements are requested due to the variety of sampling and analytical methods that exist. The Water Board has advised that these are acceptable methods. This also assumes that tank backfill material will be encountered during the boring, not native soil.

Please contact our office 72 working hours prior to this field work. I may be reached at (510) 567-6765 if you have any questions.

Sincerely,

Barney M. Chan

Hazardous Materials Specialist

Baines M Cha

C: B. Chan, files

Mr. S. Carter, Gettler-Ryan Inc., 3164 Gold Camp Drive, Suite 240, Rancho Cordova, CA, 95670

Svwpap-3616

GETTLER-RYAN INC.

FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan Inc. (GR) is conducted in accordance with GR's Health and Safety Plan and the Site Safety Plan. GR personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The GR geologist or engineer at the site when the work is performed acts as the Site Safety Officer. GR utilizes a photoionization detector (PID) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Soil Samples

Soil borings are drilled by a California-licensed well driller. A GR geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples obtained with a Geoprobe® rig are collected from the soil boring with a split-barrel sampling device fitted with 1-inch-diameter, clean brass tubes. The Geoprobe® drives the sampling device approximately 24 inches, and the filled sampler is then retrieved from the boring. The encountered soils are described using the Unified Soil Classification System (ASTM 2488-84) and the Munsell Soil Color Chart or GSA Rock Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with teflon sheeting, capped, labeled, and place in a cooler with blue ice for preservation. A chain-of-custody form is initiated in the field and accompanies the selected soil samples to the analytical laboratory. Samples are selected for chemical analysis based on:

- a. depth relative to underground storage tanks and existing ground surface
- b. depth relative to known or suspected groundwater
- c. presence or absence of contaminant migration pathways
- d. presence or absence of discoloration or staining
- e. presence or absence of obvious gasoline hydrocarbon odors
- f. presence or absence of organic vapors detected by headspace analysis

Field Screening of Soil Samples

A PID is used to perform head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves placing a plastic cap over the end of the tube and

SAMPLE NAME: VB-1

ID#: 9902210-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	c021911	Date of Collection: 2/16/99
Dil. Factor:	1.34	Date of Analysis: 2/19/99

Compound	Det. Limit (ppbv)	Amount (ppbv)
Freon 12	0.67	4.3
Freon 114	0.67	Not Detected
Chloromethane	0.67	Not Detected
Viny! Chloride	0.67	Not Detected
Bromomethane	0.67	Not Detected
Chloroethane	0.67	Not Detected
Freon 11	0.67	Not Detected
1,1-Dichloroethene	0.67	Not Detected
Freon 113	0.67	Not Detected
Methylene Chloride	0.67	0.68 J
1,1-Dichloroethane	0.67	Not Detected
cis-1,2-Dichloroethene	0.67	Not Detected
Chloroform	0.67	Not Detected
1,1,1-Trichloroethane	0.67	Not Detected
Carbon Tetrachloride	0.67	Not Detected
Benzene	0.67	2.7 J
	0.67	Not Detected
1,2-Dichloroethane		0.67 J
Trichloroethene	0.67	Not Detected
1,2-Dichloropropane	0.67	Not Detected
cis-1,3-Dichloropropene	0.67	5.2
Toluene	0.67	Not Detected
trans-1,3-Dichloropropene	0.67	Not Detected
1,1,2-Trichloroethane	0.67	
Tetrachloroethene	0.67	Not Detected
Ethylene Dibromide	0.67	Not Detected
Chlorobenzene	0.67	Not Detected
Ethyl Benzene	0.67	Not Detected
m,p-Xylene	0.67	2.5 J
o-Xylene	0.67	0.82 J
Styrene	0.67	1.2 J
1,1,2,2-Tetrachloroethane	0.67	Not Detected
1,3,5-Trimethylbenzene	0.67	Not Detected
1,2,4-Trimethylbenzene	0.67	0.79 J
1,3-Dichlorobenzene	0.67	Not Detected
1,4-Dichlorobenzene	0.67	Not Detected
Chlorotoluene	0.67	Not Detected
1,2-Dichlorobenzene	0.67	Not Detected
1,2,4-Trichlorobenzene	0.67	Not Detected
Hexachlorobutadiene	0.67	Not Detected
Propylene	2.7	Not Detected
1,3-Butadiene	2.7	Not Detected
Acetone	2.7	89
Carbon Disulfide	2.7	Not Detected
2-Propanol	2.7	370 E
trans-1,2-Dichloroethene	2.7	Not Detected

SAMPLE NAME: VB-1

ID#: 9902210-01A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	c021911	Date of Collection: 2/16/99
Dil. Factor:	1.34	Date of Analysis: 2/19/99

Compound	Det. Limit (ppbv)	Amount (ppbv)
Vinyl Acetate	2.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.7	Not Detected
	2.7	Not Detected
Hexane	·	Not Detected
Tetrahydrofuran	2.7	Not Detected
Cyclohexane	2.7	Not Detected
1,4-Dioxane	2.7	Not Detected
Bromodichloromethane	2.7	Not Detected
4-Methyl-2-pentanone	2.7	Not Detected
2-Hexanone	2.7	
Dibromochloromethane	2.7	Not Detected
Bromoform	2.7	Not Detected
4-Ethyltoluene	2.7	Not Detected
Ethanol	2.7	17
Methyl tert-Butyl Ether	2.7	Not Detected
Heptane	2.7	Not Detected

E = Exceeds instrument calibration range.

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	% Recovery	Method Limits
1.2-Dichloroethane-d4	114	70-130
Toluene-d8	114	70-130
	98	70-130
4-Bromofluorobenzene	90	* *

SAMPLE NAME: VB-2

ID#: 9902210-02A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	6021918	Date of Collection: 2/16/99
Dil. Factor:	1.52	Date of Analysis: 2/19/99

Compound	Det. Limit (ppbv)	Amount (ppbv)
Vinyl Acetate	3.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.0	Not Detected
Hexane	3.0	Not Detected
Tetrahydrofuran	3.0	Not Detected
Cyclohexane	3.0	Not Detected
1,4-Dioxane	3.0	Not Detected
Bromodichloromethane	3.0	Not Detected
4-Methyl-2-pentanone	3.0	Not Detected
2-Hexanone	3.0	Not Detected
Dibromochloromethane	3.0	Not Detected
Bromoform	3.0	Not Detected
4-Ethyltoluene	3.0	Not Detected
Ethanol	3.0	19
Methyl tert-Butyl Ether	3.0	Not Detected
Heptane	3.0	Not Detected

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	% Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	101	70-130

SAMPLE NAME : Lab Blank

ID#: 9902210-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	c021905 Date of Collection: NA	
Dil. Factor:	1.00 Date of Analysis: 2/19/99	4.

Compound	Det. Limit (ppbv)	Amount (ppbv
Freon 12	0.50	Not Detected
Freon 114	0.50	Not Detected
Chloromethane	0.50	Not Detected
Vinyl Chloride	0.50	Not Detected
Bromomethane	0.50	Not Detected
Chloroethane	0.50	Not Detected
Freon 11	0.50	Not Detected
1,1-Dichloroethene	0.50	Not Detected
Freon 113	0.50	Not Detected
Methylene Chloride	0.50	Not Detected
1,1-Dichloroethane	0.50	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected
Chloroform	0.50	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected
Carbon Tetrachloride	0.50	Not Detected
Benzene	0.50	Not Detected
1,2-Dichloroethane	0.50	Not Detected
Trichloroethene	0.50	Not Detected
1,2-Dichloropropane	0.50	Not Detected
sis-1,3-Dichloropropene	0.50	Not Detected
Toluene	0.50	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected
Tetrachloroethene	0.50	Not Detected
Ethylene Dibromide	0.50	Not Detected
Chlorobenzene	0.50	Not Detected
Ethyl Benzene	0.50	Not Detected
m,p-Xylene	0.50	Not Detected
o-Xylene	0.50	Not Detected
Styrene	0.50	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected
Chlorotoluene	0.50	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected
1,2,4-Trichlorobenzene	0.50	Not Detected
Hexachlorobutadiene	0.50	Not Detected
Propylene	2.0	Not Detected
1,3-Butadiene	2.0	Not Detected
Acetone	2.0	Not Detected
Carbon Disulfide	2.0	Not Detected
		Not Detected
2-Propanol trans-1,2-Dichloroethene	2.0 2.0	Not Detected

SAMPLE NAME : Lab Blank

ID#: 9902210-03A

EPA METHOD TO-14 GC/MS Full Scan

File Name:	c021905	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/19/99

Compound	Det. Limit (ppbv)	Amount (ppbv)	
Vinyl Acetate	2.0	Not Detected	
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	
Hexane	2.0	Not Detected	
Tetrahydrofuran	2.0	Not Detected	
Cyclohexane	2.0	Not Detected	
1,4-Dioxane	2.0	Not Detected	
Bromodichloromethane	2.0	Not Detected	
4-Methyl-2-pentanone	2.0	Not Detected	
2-Hexanone	2.0	Not Detected	
Dibromochloromethane	2.0	Not Detected	
Bromoform	2.0	Not Detected	
4-Ethyltoluene	2.0	Not Detected	
Ethanol	2.0	Not Detected	
Methyl tert-Butyl Ether	2.0	Not Detected	
Heptane	2.0	Not Detected	

Container Type: NA

Surrogates	% Recovery	Method Limits		
1,2-Dichloroethane-d4	105	70-130		
Toluene-d8	100	70-130		
4-Bromofluorobenzene	90	70-130		



AN ENVIRONMENTAL ANALYTICAL LABORATORY

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA 95630-4719 (916) 985-1000 FAX: (916) 985-1020

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Lab I.D.	Field Sample I.D.	Date & Time	Anal	yses Requested	Canister Initial	Canister Pressure / Vacuum Initial Final Receipt		
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