VOLKSWAGEN

GROUP OF AMERICA

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September 25, 2013

Ms. Barbara J. Jakub, PG
Alameda County Health Care Services
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject:
Submittal of the Vapor Intrusion Work Plan for
Volkswagen Automobile Dealership
2740 Broadway Avenue, Oakland, California
Fuel Leak Case No. RO0000400 and GeoTracker Global ID T0600100227

Dear Ms. Jakub:

VOLKSWAGEN GROUP OF AMERICA, INC.
2200 FERDINAND PORSCHE DRIVE
HERNDON, VA 20171
PHONE +1 703 364 7000

Enclosed please find the work plan to conduct a soil vapor investigation that was prepared by ARCADIS-US (the "ARCADIS Letter") for CBRE – Global Corporate Services (CBRE) on behalf of Volkswagen Group of America (VWoA). Based on the results of the groundwater monitoring activities that were conducted at the Site in June 2012 and the results of the recent investigation activities that took place at the Site, the Alameda County Department of Environmental Health (ACEH) requested a work plan for an additional subsurface investigation including a soil vapor investigation.

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

VWoA, CBRE, and ARCADIS appreciate the opportunity to submit the enclosed report to the ACEH for your consideration, and we look forward to working with you and your team to bring this project to regulatory case closure. If you have any questions or comments, please call me at (248) 754 4339 or Ron Goloubow of ARCADIS at (510) 596-9550.

Sincerely,

Eric S. Carlson
Director, Group Marketing, Real Estate, and
Affiliate Operations

ARCADIS
Infrastructure · Water · Environment · Buildings

Imagine the result

Volkswagen Group of America, Inc.
in care of CBRE Global Corporate Services

Soil Vapor Sampling Plan

Volkswagen Automobile Dealership
2740 Broadway Avenue, Oakland, CA

September 26, 2013

ARCADIS

Caitlin Bell, P.E.
Project Environmental Engineer

Ron Goloubow, P.G.
Principal Geologist
California Professional Geologist (8655)

PROFESSIONAL GEOLOGIST
RONALD E. GOLOUBOW
No.8655
STATE OF CALIFORNIA
Expires Nov. 30, 2013

Jay M. Shipley, P.E.
Senior Vice President

Soil Vapor Sampling Plan

Volkswagen Automobile Dealership
2740 Broadway Avenue
Oakland, California

Prepared for:

Volkswagen Group of America, Inc. in care of CBRE Global Corporate Services

Prepared by:
ARCADIS U.S., Inc.
2000 Powell Street
Suite 700
Emeryville
California 94608
Tel 510 652 4500
Fax 510 652 4906

Our Ref.:
EM001048.0001

Date:
September 26, 2013

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ARCADIS

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Volkswagen Automobile
Dealership
2740 Broadway Avenue
Oakland, California

Introduction

CBRE - Global Corporate Services (CBRE) on behalf of Volkswagen Group of America (VWoA) has retained ARCADIS U.S., Inc. (ARCADIS) to prepare this Soil Vapor Sampling Plan (Plan) for the Volkswagen Automobile Dealership located at 2740 Broadway Avenue, in Oakland, California (the Site). A Site Vicinity Map and a Site Plan are included as Figures 1 and 2, respectively. This Plan is intended to fulfill the requests of the Alameda County Health Care Services Agency – Alameda County Environmental (ACEH) in letters to CBRE dated April 6, 2012 and November 15, 2012.

Background

Based on a review of available historical reports acquired from the ACEH website, soil and groundwater investigation activities have taken place at this Site since 1988 when four underground storage tanks (USTs) were removed from the Site (Engineering-Science, Inc. 1989): one 1,000-gallon capacity UST (Tank A) used to store waste oil (formerly located near the garage near 27th Street); one 300-gallon capacity UST (Tank B) used to store waste oil (formerly located along Broadway Avenue); one 550-gallon capacity UST (Tank C); and one 1,500-gallon capacity UST (Tank D) both used to store gasoline (formerly located along 28th Street). Figure 2 illustrates the locations of the former USTs, current and former groundwater monitoring wells and soil vapor extraction wells, as adapted from recent Site reconnaissance and historical reports (Environmental Science and Engineering Inc. November 1991 [ESE 1991b] and QST Environmental 1999).

Soil samples collected during the removal of Tank A did not contain total petroleum hydrocarbons as gasoline (TPHg), or benzene, toluene, ethylbenzene and total xylenes (BTEX) above laboratory reporting limits (Engineering-Science, Inc. 1989). Soil samples collected during the removal of Tank B contained TPHg at 640 milligrams per kilogram (mg/kg) and total oil and grease at 2,400 mg/kg. Soil samples collected during the removal of Tanks C and D and from soil borings drilled near theses USTs contained elevated concentrations of detectable levels of TPHg, as well as BTEX. In addition, light non-aqueous phase liquid (LNAPL) was reported to be observed in the excavation during the removal of these USTs.

Based on the soil samples collected and observations made during the removal of these USTs a total of six groundwater monitoring wells (MW-1 and MW-3 through MW-7) were installed to a total depth of between 20 and 30 feet below grade in the sidewalk and 28th Street near the former USTs C and D. Groundwater monitoring well MW-2

was installed near the former waste oil UST located near Broadway Avenue (Tank B). Reportedly, three wells (MW-4, MW-5 and MW-6) were abandoned in 1994 leaving wells MW-1, MW-2, MW-3 and MW-7 in place. Additionally, well MW-2 was indicated as an abandoned well in a map included in an ESE report dated 1991 (ESE 1991a) and does not appear to be accessible during recent Site reconnaissance. The highest concentrations of TPHg and BTEX have historically been detected in groundwater samples collected from well MW-3 located approximately 50 feet west of USTs C and D located along 28th Street (Mactec 2003).

A soil vapor and groundwater extraction system reportedly operated at the Site from February 1996 through March 1998. The extraction system was comprised of four vapor and groundwater extraction wells (VW-1 through VW-3 and MW-3; [Mactec 2003]). The details regarding the operational history of this extraction system were not provided (i.e., flow rates, mass of contaminants removed).

Recent Subsurface Investigations and Monitoring

In June 2012, ARCADIS coordinated the redevelopment and sampling of the remaining groundwater monitoring and vapor extraction wells on-Site. Three groundwater monitoring wells MW-1, MW-3 and MW-7 and the three former soil vapor extraction wells VW-1, VW-2 and VW-3 were redeveloped and sampled. Prior to redevelopment, approximately 0.02 feet of LNAPL was observed in vapor extraction well VW-3; therefore, this well was not redeveloped in a similar manner to the other wells (ARCADIS 2012a). Groundwater purging and sampling was completed using conventional low-flow techniques in accordance with the United States Environmental Protection Agency's (USEPA's) protocol (USEPA 1996). The exception to this purging and sampling method was vapor extraction well VW-3. In that case, a grab groundwater sample was collected from below the LNAPL present in the well. Analytical results for groundwater samples collected at the Site indicate that detectable concentrations of petroleum-related compounds are present in the vicinity of the former gasoline USTs.

In April 2013, ARCADIS coordinated an investigation of the lateral and vertical extent of affected subsurface media in accordance with work plans using direct push technology equipped with an electrical conductivity (EC) measurement device and membrane interface probe (MIP) sample collector. Additionally, grab groundwater samples were collected and analyzed for TPH and volatile organic compounds (VOCs). The results of the EC/MIP indicated the presence of petroleum-related compounds at a depth of approximately 12 to 21 feet below ground surface (bgs),

depending on the vertical location of the sandy lense within the boring and the presence of chlorinated VOC (CVOC) compounds at a depth of approximately 27 to 30 feet bgs along the northern side of 28th Street and within the service center (ARCADIS 2013).

In June 2013, ARCADIS coordinated the advancement of two soil borings converted to permanent groundwater monitoring wells. Soil borings were advanced to approximately 20 feet bgs near two of the EC/MIP locations that exhibited elevated petroleum hydrocarbon concentrations. Soil samples were collected from approximately 5, 10 and 15 feet bgs from each of the boring locations and analyzed for TPH and VOCs. The results of these analyses indicated limited petroleum impacts at these locations. Permanent groundwater monitoring wells were installed at these locations, developed and sampled for TPH and VOCs. The results of the groundwater analyses indicated the presence of residual petroleum constituents in the vicinity of the former UST Tanks C and D, as well as in the newly-installed groundwater monitoring wells on the north side of 28th Street (ARCADIS 2103).

Soil Vapor Sampling Approach

A successful vapor intrusion study provides data to assess the appropriate steps of the pathway to determine if there is a complete pathway for humans to be exposed to soil vapor that may be migrating into indoor air. Additionally, a vapor intrusion study must be developed to avoid misinterpreting the data based on unavoidable artifacts. For example, it would be difficult to interpret the source of detected indoor air chemical concentrations in a commercial facility that uses solvents or petroleum-based compounds as part of the daily routine.

The scope of work described below is based on the steps described in the Department of Toxic Substance Control (DTSC) Final Vapor Intrusion Guidance (October 2011).

- Identify sources of releases to the subsurface
- Compare available soil and groundwater data to screening level criteria designed to mitigate vapor intrusion
- Collect soil vapor samples to determine the potential for migration from the subsurface into indoor air

Sources of Releases to the Subsurface

Groundwater investigation activities began at the Site in 1988 when four USTs were removed (Engineering-Science, Inc. 1989): two of the USTs reportedly stored waste oil and two of the USTs stored gasoline. The former gasoline USTs were located along 28th Street with groundwater monitoring well VW-3 located within the former tank pit (see Figure 2). LNAPL has been observed in monitoring well VW-3 as recently as June 2012 (ARCADIS 2102a).

Soil and groundwater investigations to date indicate the presence of predominantly petroleum-related constituents, specifically lighter-weight gasoline-related compounds (Table 1). The presence of the former gasoline USTs along 28th Street and the elevated concentrations of petroleum-related compounds detected in soil and groundwater samples suggest the former USTs are the source of the fuel and fuel-related compounds detected in the samples.

Analytical results for groundwater samples collected from 1991 to 1993 indicate that CVOCs were present above laboratory reporting limits; specifically trichloroethene (TCE) and 1,2-dichloroethane (1,2-DCA), in samples collected from monitoring wells MW-1, MW-3, MW-4, MW-5 and MW-6 (see Table 1). The highest concentrations of CVOCs were detected in groundwater samples collected from wells screened within the deeper semi-confined aquifer. Historical soil data collected in the vicinity of the former USTs have been analyzed for for the full suite of VOCs, including CVOCs. In these cases, CVOCs were detected in the soil samples above the laboratory reporting limits. These results suggest that petroleum-related constituents are the only compounds attributable to the former USTs at the Site. Based on the lack of CVOCs detected in soil samples collected at the Site and the detection of CVOCs in groundwater samples collected from wells that were screened below the perched groundwater, ESE suggested that the source of TCE in groundwater was from an unknown off-site property (ESE 1994). The occurrence of CVOCs in groundwater samples collected from monitoring wells MW-1 and MW-3 was likely due to vertical migration of CVOCs from the deeper semi-confined aquifer into the shallow sand layer via the monitoring wells screened within both zones. Therefore, monitoring wells MW-4, MW-5 and MW-6 were abandoned in 1993 to prevent continued vertical migration of CVOCs to the shallow sand layer.

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Groundwater Screening Evaluation

Elevated concentrations of constituents in soil vapor commonly originate from one of two sources: the transport of the compound from impacted soil or groundwater. Specific environmental screening levels (ESLs) have been determined by the San Francisco Regional Water Quality Control Board (SFRWQCB; 2013) for evaluation of potential vapor intrusion (VI). If current groundwater concentrations at the site are below the applicable VI ESL, then there is not anticipated to be a complete exposure pathway for that given compound. A comparison of the groundwater concentrations detected in June 2013 to the VI ESLs is present in Table 1. During the June 2013 groundwater sampling event, benzene was detected above the VI ESL in groundwater monitoring wells MW-8 and MW-9. Therefore, additional soil vapor sampling is warranted.

Soil Vapor Sampling and Analysis Plan

This soil vapor sampling plan focuses on the shallow and deep vadose zone at two locations within the Site building: the service center and the dealership showroom/offices (see Figure 3). These locations were chosen over locations outside of the Site building in order to best identify and quantify the potential vapor intrusion risk to Site workers from fuel or fuel-related constituents that are potentially migrating from soil or groundwater to indoor air.

In order to adequately delineate the potential vertical extent of affected soil vapor, one deeper vadose zone soil vapor monitoring well and one subslab sampling point will be installed at the location in the current service center (Figure 3). This soil vapor monitoring well and subslab sampling point will be located as close to monitoring well VW-3 as Site conditions allow. Collecting both a soil vapor sample and a subslab sample at this location will provide insight into the attenuation capacity of the vadose zone and the potential human health risk posed to the Site workers.

To determine the potential lateral extent of vapors in the vadose zone, the second subslab sampling point will be installed within the dealership showroom/offices. Due to limitations of access for a drill rig, a subslab sampling point was chosen for this location over a soil vapor monitoring well. This subslab sampling point will be located as close to the existing groundwater monitoring wells as Site conditions allow. The concentration of petroleum hydrocarbons deeper in the vadose zone can be inferred using the attenuation factor measured at the vapor sample proposed to be located in the service center (see Figure 3).

Vapor Probe Installation

Prior to installing soil vapor monitoring points, utility clearance will be provided for the proposed sampling areas, as well as contingency areas. A drilling permit from the Alameda County Public Works Agency, Water Resources Section (ACPWA) will be obtained and a grouting inspection with an agent from the county will be scheduled. Additionally, ARCADIS will prepare a Site-specific health and safety plan (HASP) detailing the scope of work and identifying the potential health and safety risks associated with the work.

The permanent soil vapor monitoring well will be installed in the service center garage in accordance with the DTSC Active Soil Gas Investigation Advisory (April 2012) guidance. The soil vapor monitoring well is anticipated to be installed using a combination of hand augering and direct push technology using a limited access rig. A cross section showing the major lithologic units and proposed zone for soil vapor sampling is included in Figure 4. The well design (Figure 5) and sampling train (Figure 6) are designed based on the schematics provided in the guidance document. Per the DTSC Active Soil Gas Investigation Advisory (April 2012) guidance, shut-in tests, leak check tests and purge volume tests will be conducted on the soil vapor monitoring well to ensure robust sample collection.

The subslab sampling point will be installed per the DTSC Vapor Intrusion Guidance (DTSC 2011) using a hammer drill to pierce the concrete slab and access the subslab vapor at the sampling locations. A subslab sampling device will then be installed within the drilled hole and secured with bentonite (Figure 7).

Vapor Sample Collection

Soil vapor samples will be collected from both the permanent soil vapor monitoring well and subslab sampling points. Each soil vapor sample will be collected in a passivated, stainless steel canister equipped with self-timed regulator. The associated laboratory hold times associated with these sampling devices is 30 days; therefore, a California-certified stationary laboratory will be utilized. All samples will be transported under chain of custody procedures to ensure proper handling. Soil vapor sampling analysis will consist of USEPA Method TO-15 for VOCs, USEPA Method TO-3GC for gasoline-range carbon and ASTM Method D-1946 for oxygen. This analysis includes evaluation for both petroleum-related and chlorinated VOCs. The TO-15 analyte list and report limits are included as Appendix A.

Vapor Intrusion Evaluation

The goal of this work plan is to provide data to assess if an exposure pathway to the affected soil vapor is complete. Therefore, soil vapor samples will be collected once and the data evaluated against the soil vapor screening criteria. If the detected concentrations exceed the risk-based soil vapor threshold concentration, soil vapor will be collected quarterly for at least one year to observe the seasonable variation in the detected concentrations. Additionally, a human health risk assessment may be made using site-specific parameters, including the calculated soil vapor attenuation factor.

Decommissioning and Waste Management

Should the soil vapor monitoring well or subslab sampling points not be needed in the future, they will be decommissioned in such a way as to prevent potential cross contamination into the subsurface and in accordance with local requirements (i.e., grouting).

Investigation-derived waste generated during the field activities, including soil cuttings, decontamination or rinse water and personal protective equipment, will be stored temporarily at the Site in clean, labeled, Department of Transportation-approved 55-gallon drums or similar, prior to disposal.

Contingencies

Several items need to be considered in light of the current Site conditions and operations. These include the potential for underground utilities to be located in the area of the soil vapor sampling point locations and the likelihood that the clayey geology will not allow for adequate sampling flow rates.

In order to continue work in the event of underground utilities within the proposed soil vapor monitoring points, other contingency areas (15 to 20 feet near the proposed sample locations) will be identified and cleared for utilities during the pre-installation activities. This will help ensure installation of soil vapor monitoring points in useful locations.

There is the potential that the sediments at the installed soil vapor monitoring points will not allow for the flow of vapor. Because this is a potential concern in this area of clayey geology, a sampling pump and vacuum gauge will be used at the time of installation of each soil vapor monitoring point to assess if adequate flow is possible in

that area prior to leak testing and sampling. In the case that there is low or no flow at the soil vapor monitoring points, passive sampling devices will be installed. These devices will allow for a qualitative evaluation of the presence of VOCs in the soil vapor at these locations.

Reporting

Contingent upon approval of this Soil Vapor Sampling Plan by the ACEH, ARCADIS will perform the work detailed herein and provide a report of the results to the ACEH via upload to the ACEH FTP site and the State Water Resources Control Board (SWRCB) GeoTracker website. The report of these activities will include the following:

- Summary of the field investigation activities;
- A figure detailing the location of the soil vapor monitoring well and subslab sampling points;
- A table summarizing the results of the soil vapor sampling;
- Estimation of an attenuation factor for VOCs within the vadose zone by comparing concentrations detected in soil vapor to those detected beneath the building slab;
- Evaluation of the potential human health risk associated with soil vapor;
- Recommendations for additional investigation of soil vapor or the steps to be taken to decommission the sampling locations; and
- Recommendations for the path forward for the environmental remediation at the Site.

References and Related Documents

Alameda County Health Care Services. 2012. Work Plan Approval and Request for Additional Work for Fuel Leak Case No. RO0000400 and GeoTracker Global ID T0600100227, Broadway Volkswagen, 2740 Broadway Oakland, California. April 6.

ARCADIS U.S., Inc. 2012a. Groundwater Monitoring Report, Volkswagen Automobile Dealership, 2740 Broadway Avenue, Oakland, California. July 2.

_____. 2012b. Subsurface Investigation and Product Recovery Work Plan Volkswagen Automobile Dealership 2740 Broadway Avenue Oakland, California. September 13.

_____. 2012c. Response to the Alameda County Environmental Health Services Comments on the Subsurface Investigation and Product Recovery Work Plan dated September 13, 2012, November 29.

_____. 2013. Soil and Groundwater Investigation Report Volkswagen Automobile Dealership 2740 Broadway Avenue Oakland, California September 12.

California Regional Water Quality Control Board – San Francisco Bay Region. 2013. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final – November 2007. Revised 2013.

California Environmental Protection Agency Department of Toxic Substances Control (DTSC), Los Angeles Regional Water Quality Control Board, San Francisco Regional Water Quality Control Board. 2012. Advisory: Active Soil Gas Investigations. April.

DTSC. 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion into Indoor Air (Vapor Intrusion Guidance). October.

Engineering-Science, Inc. 1989. Removal of Four Underground Storage Tanks at Broadway Volkswagen, Oakland, California. February 3.

Environmental Science & Engineering, Inc. 1991a. Report of Quarterly Activities, Broadway Volkswagen, 2740 Broadway, Oakland, California. July 10.

———. 1991b. Report of Quarterly Activities, Broadway Volkswagen, 2740 Broadway, Oakland, California. 2740 Broadway, Oakland, California. November 12.

———. 1993. Report of Quarterly Activities, Vorelco Property No. 4286, Broadway Volkswagen, 2740 Broadway, Oakland, California. 2740 Broadway, Oakland, California. August 3.

———. 1994. Report of Site Activities, Vorelco Property No. 4286, Broadway Volkswagen, 2740 Broadway, Oakland, California. 2740 Broadway, Oakland, California. April 26.

———. 1995. Remedial Action Plan, Vorelco Property No. 4286, Broadway Volkswagen, 2740 Broadway, Oakland, California. 2740 Broadway, Oakland, California. August 25.

———. 1997. Report of Quarterly Groundwater Monitoring, Third Quarter 1997, Vorelco Property No. 4286, Broadway Volkswagen, 2740 Broadway, Oakland, California. 2740 Broadway, Oakland, California. November 18.

Harding ESE. 2002. Workplan for Quarterly Groundwater Monitoring, Broadway Volkswagen, 2740 Broadway, Oakland, California. February 22.

Hunter Environmental Services, Inc. 1989. Broadway Volkswagen, Oakland, California. February 10.

Mactec. 2003. Sampling and Closure Report, Broadway Volkswagen, 2740 Broadway, Oakland, California. April 21.

QST Environmental. 1999. Site Closure Report, Property No. 4286, Broadway Volkswagen, 2740 Broadway, Oakland, California. March 1.

USEPA, 1996. Ground Water Issue: Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures. Office of Solid Waste and Emergency Response. EPA/540/S-95/504. April.

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Tables

Table 1
Summary of Groundwater Analytical Results
Volkswagen Automobile Dealership
2740 Broadway Avenue, Oakland, CA

Well Number	Sample Date	TPHg µg/L	TPHd µg/L	TPHmo µg/L	Benzene µg/L	Toluene µg/L	Ethyl benzene µg/L	Total Xylenes µg/L	MTBE µg/L	TCE µg/L	cDCE µg/L	1,1-Dichlorothene µg/L	1,2-Dichloroethane µg/L	Isopropyl benzene µg/L	Propyl benzene µg/L	1,3,5-Trimethyl benzene µg/L	1,2,4-Trimethyl benzene µg/L	sec-Butyl benzene µg/L	para-Isopropyl Toluene µg/L	n-Butyl benzene µg/L	Naphthane µg/L	Acetone µg/L	trans-1,2-Dichloroethene µg/L	Chloroform µg/L	TDS µg/L
	Tier I ESL µg/L	**100**	**100**	**100**	**1**	**40**	**30**	**20**	**5**	**5**	**6**	**5**	**0.5**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**17**	**1,500**	**na**	**70**	**na**
VI ESL (Fine-Coarse Mix) µg/L		**No Value**	**No Value**	**No Value**	**270**	**Sample Soil Gas**	**3,100**	**Sample Soil Gas**	**100,000**	**1,300**	**No Value**	**130,000**	**1,000**	**No Value**	**No Value**	**No Value**	**No Value**	**No Value**	**No Value**	**No Value**	**1,600**	**Sample Soil Gas**	**120,000**	**1,700**	**No Value**
MW-1	01/21/89	ND	na	na	**53**	13	1.4	8.2	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	05/13/91	130	na	na	ND	ND	ND	ND	---	**58**	na	---	ND	na	na	na	na	na	na	na	na	---	---	---	na
	10/18/91	ND	na	na	ND	ND	ND	ND	---	**120**	na	---	ND	na	na	na	na	na	na	na	na	---	---	---	na
	10/27/91	ND	na	na	ND	ND	ND	ND	---	11	na	---	ND	na	na	na	na	na	na	na	na	---	---	---	na
	07/13/93	ND	na	na	ND	ND	ND	ND	---	**6.4**	na	---	ND	na	na	na	na	na	na	na	na	---	---	---	na
	06/27/96	ND	na	na	ND	ND	ND	ND	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	09/19/96	ND	na	na	ND	ND	ND	ND	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	12/13/96	ND	na	na	ND	ND	ND	ND	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	10/07/97	ND	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	08/03/99	ND	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	06/08/12	<50	**290 Y**	<300	<0.5	<0.5	<0.5	<0.5	0.3 J	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	---	---	---	410
	06/19/13	<50	**290 Y**	<300	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<0.5	na
MW-2*	01/21/89	ND	na	na	ND	ND	ND	ND	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
MW-3	01/21/89	**32,000**	na	na	***9,600***	**8,200**	**1,800**	**6,200**	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	05/13/91	**81,000**	na	na	***7,800***	**12,000**	**1,200**	**4,000**	---	**14**	na	---	**380**	na	na	na	na	na	na	na	na	---	---	---	na
	10/18/91	**73,000**	na	na	***9,400***	**8,600**	**750**	**3,300**	---	**14**	na	---	**8.3**	na	na	na	na	na	na	na	na	---	---	---	na
	10/27/91	**37000**	na	na	***7,100***	**4,900**	**970**	**3,500**	---	ND	na	---	**170**	na	na	na	na	na	na	na	na	---	---	---	na
	07/13/93	**41,000**	na	na	***8,100***	**6,200**	***8,100***	**4,400**	---	**14**	na	---	**150**	na	na	na	na	na	na	na	na	---	---	---	na
	06/27/96	370	na	na	**120**	**75**	**6.2**	**47**	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	09/19/96	**15,000**	na	na	***6,000***	**2,700**	**450**	**2,180**	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	12/13/96	ND	na	na	**30**	10	2	7.4	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
Dup	12/13/96	ND	na	na	**21**	7	1	4.9	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	10/07/97	ND	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
Dup	10/07/97	ND	na	na	**21**	7	1	4.9	**5.7**	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	08/03/99	**21,000**	na	na	***5,500***	**2,300**	**470**	**990**	---	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	06/08/12	<50	56	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	---	---	---	310
	06/19/13	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<0.5	na
MW-4*	01/21/89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05/13/91	**13,000**	---	---	**160**	**690**	**250**	**1,100**	---	**490**	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---
	10/18/91	ND	---	---	**11**	11	ND	15	---	**450**	---	---	**3.9**	---	---	---	---	---	---	---	---	---	---	---	---
	10/27/91	180	---	---	**6.4**	2.8	1.2	6.2	---	**520**	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---
	07/13/93	320	---	---	**36**	4.4	1.8	5.3	---	**550**	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5*	01/21/89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05/13/91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10/18/91	**16,000**	---	---	***3,500***	**530**	**670**	**1,100**	---	**120**	---	---	**32**	---	---	---	---	---	---	---	---	---	---	---	---	---
	10/27/91	87	---	---	ND	ND	ND	ND	---	**410**	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---
	07/13/93	90	---	---	ND	ND	ND	ND	---	**530**	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1
Summary of Groundwater Analytical Results
Volkswagen Automobile Dealership
2740 Broadway Avenue, Oakland, CA

Well Number	Sample Date	TPHg µg/L	TPHd µg/L	TPHmo µg/L	Benzene µg/L	Toluene µg/L	Ethyl benzene µg/L	Total Xylenes µg/L	MTBE µg/L	TCE µg/L	cDCE µg/L	1,1-Dichlorothene µg/L	1,2-Dichloroethane µg/L	Isopropyl benzene µg/L	Propyl benzene µg/L	1,3,5-Trimethyl benzene µg/L	1,2,4-Trimethyl benzene µg/L	sec-Butyl benzene µg/L	para-Isopropyl Toluene µg/L	n-Butyl benzene µg/L	Naphthane µg/L	Acetone µg/L	trans-1,2-Dichloroethene µg/L	Chloroform µg/L	TDS µg/L
	Tier I ESL µg/L	**100**	**100**	**100**	**1**	**40**	**30**	**20**	**5**	**5**	**6**	**5**	**0.5**	**na**	**na**	**na**	**na**	**na**	**na**	**na**	**17**	**1,500**	**na**	**70**	**na**
MW-6*	01/21/89	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	05/13/91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	10/18/91	**28,000**	---	---	***640***	**2,700**	**1,100**	**4,500**	---	**230**	---	---	**60**	---	---	---	---	---	---	---	---	---	---	---	---
	10/27/91	**1,300**	---	---	**48**	**130**	**55**	**230**	---	***2,000***	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---
	07/13/93	**1,100**	---	---	**5.1**	30	**30**	**230**	---	***2,100***	---	---	ND	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	06/27/96	ND	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	09/19/96	67	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	12/13/96	ND	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	10/07/97	ND	na	na	ND	ND	ND	ND	ND	na	na	---	na	na	na	na	na	na	na	na	na	---	---	---	na
	06/08/12	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	0.5	---	**1.2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	---	---	---	290
	06/19/13	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	3.2	0.3 J	<0.5	**0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<0.5	na
Dup	06/19/13	<50	<50	<300	**3.1**	<0.5	<0.5	<0.5	<0.5	<0.5	0.3 J	<0.5	**0.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<0.5	na
MW-8	06/19/13	**1,800 Y**	**650**	<300	***360***	2.3 J	16	2.2 J	1.3 J	<2.5	**19**	<2.5	**2.3 J**	2.9	1.9 J	<2.5	<2.5	2.1 J	<2.5	<2.5	<10	<50	<2.5	<2.5	na
MW-9	06/19/13	**5,400**	**1,100**	<300	***1,500***	19	**110**	**37**	<8.3	**13**	**14**	<8.3	<8.3	12	40	<8.3	10	<8.3	<8.3	<8.3	**42**	<170	<8.3	<8.3	na
VW-1	06/08/12	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	---	---	---	210
Dup	06/08/12	<50	<50	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	---	---	---	210
	06/19/13	<50	70 Y	<300	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<10	<0.5	<0.5	na
VW-2	06/08/12	**36,000**	**3,400 Y**	<300	***1,800***	**3,000**	**1,200**	**4,900**	<25	<25	<25	---	<25	44	140	240	960	<25	<25	70	**480**	---	---	---	370
	06/19/13	**4,300**	**830**	<300	***270***	**58**	**280**	**430**	<1.7	<1.7	<1.7	<1.7	**1.7**	9.9	30	16	260	3.0	1.4 J	<1.7	**22 J**	<33	<1.7	<1.7	na
VW-3	06/08/12	**120,000 Y**	**9,300**	**2,000**	**54**	<20	**84**	**640**	<20	<20	<20	---	<20	100	340	650	2,000	37	22	83	**240**	---	---	---	370
	06/19/13	**13,000**	**6,200**	**650**	**72**	<7.1	16	**119.7**	<7.1	<7.1	<7.1	<7.1	<7.1	35	170	300	1,000	26	9.8	58	**70**	<140	<7.1	<7.1	na
MIP-1	04/05/13	**630 Y**	**590**	<300	**52**	1.0	0.5 J	0.7	1.6	**18**	**40**	0.3 J	**2.8**	1.9	0.4 J	<0.5	<0.5	1.6	<0.5	<0.5	<2.0	7.8 J	0.3 J	<0.5	---
MIP-2	04/05/13	**510 Y**	**450**	<300	**140**	1.1	<1.0	0.7 J	<1.0	**42**	4.4	<1.0	**1.5**	0.6 J	0.5 J	<1.0	<1.0	1.0	1.0	<1.0	<4.0	<20	<1.0	<1.0	---
MIP-3	04/05/13	**1,800**	**600**	<300	***270***	2.1	**120**	**135**	1.2 J	**270**	**17**	<1.7	**1.1 J**	13	29	<1.7	1.5 J	1.5 J	2.3	3.0	**17**	<33	<1.7	1.0 J	---
MIP-4	04/05/13	**13,000**	**4,300**	**320**	**15**	5.7	**510**	**1,490**	<5.0	**960**	**11**	<5.0	<5.0	57	170	290	850	16	8.7	57	**150**	<100	<5.0	<5.0	---
Dup	04/05/13	**14,000**	**1,700**	<300	**29**	8.5	**670**	**1,970**	<6.3	**750**	**7.0**	<6.3	<6.3	68	200	340	1,000	20	11	73	**200**	<130	<6.3	<6.3	---
MIP-5	04/05/13	**4,200**	**1,000**	<300	**9.0**	18	**46**	**189**	<1.3	**170**	**10**	<1.3	**1.2 J**	8.9	34	58	170	7.7	4.2	19	**18**	<25	<1.3	1.1 J	---

Notes:

Tier I ESL	Tier I Environmental Screening Levels (ESLs) for shallow soils of less than 3 meters below ground surface and groundwater that is a current or potential source of drinking water.
TPHg	Total Petroleum Hydrocarbons as gasoline
TPHd	Total Petroleum Hydrocarbons as diesel
TPHmo	Total Petroleum Hydrocarbons as motor oil
MTBE	Methyl tertiary butyl ether
cDCE	cis-1,2-Dichloroethene
EDC	1,2-Dichloroethane (ethylene dichloride)
TCE	Trichloroethene
TDS	Total dissolved solids
µg/L	micrograms per liter
ND	Not detected at or above detection limits (historical limits unknown).
---	Not analyzed
na	historical data not available
Dup	Duplicate sample
*	Wells abandoned
<	Not detected at or above the laboratory detection limit noted.
Y	Laboratory reports the sample exhibits chromatographic pattern which does not resemble standard.
J	Laboratory reports estimated value.

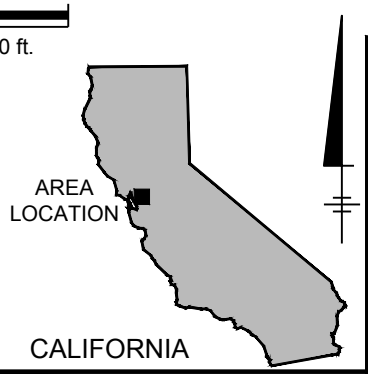
ARCADIS

Figures

SOURCE: GOOGLE EARTH PRO

0 250' 500'

Approximate Scale: 1 in. = 250 ft.



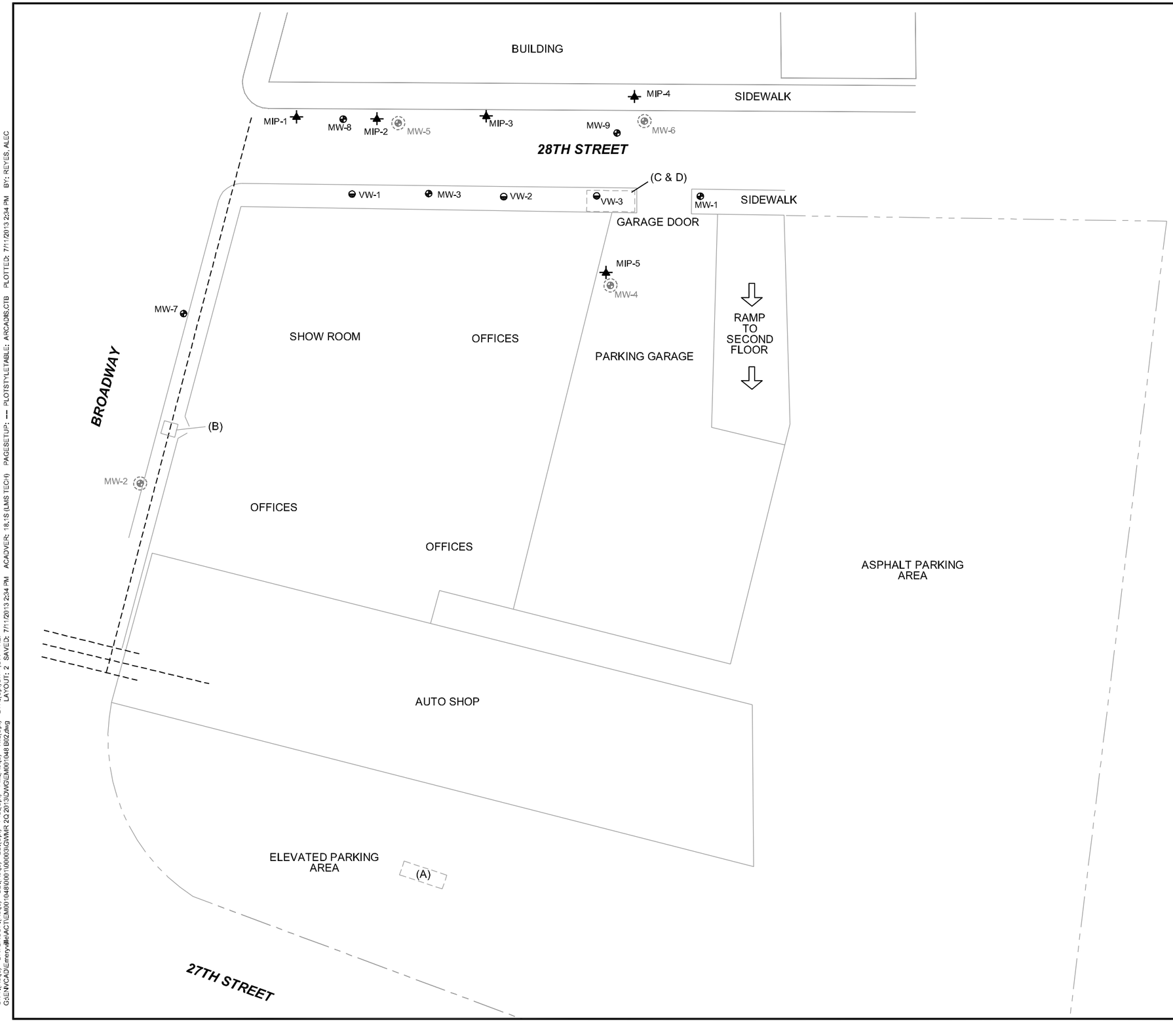
VW OAKLAND
2740 BROADWAY
OAKLAND, CALIFORNIA

SITE LOCATION MAP

ARCADIS

FIGURE
1

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Emeryville\ACT\EM001048\0001\0003\GWMR 1Q 2013\DWG\EM001048 N01.dwg LAYOUT: 1 SAVED: 4/15/2013 2:00 PM ACADVER: 18.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 7/16/2013 1:17 PM BY: REYES, ALEC
XREFS: IMAGES: PROJECTNAME: ---
EM001048 0001 Aerial.jpg



LEGEND

- PROPERTY LINE
- FENCE LINE
- UTILITY LINE
- MW-3 — MONITORING WELL LOCATION
- MW-5 — ABANDONED MONITORING WELL
- VW-1 — VAPOR EXTRACTION WELL
- FORMER UNDERGROUND STORAGE TANK LOCATION
  - (A) WASTE OIL (1,000 GAL); TANK REMOVED, SITE CLEAN
  - (B) WASTE OIL (550 GAL); TANK REMOVED
  - (C&D) WASTE OIL (550 GAL) AND UNLEADED GASOLINE (3,000 GAL); TANKS REMOVED
- MIP-1 — SOIL BORING LOCATIONS WITH EC/MIP CAPABILITIES
- EC/MIP — ELECTRICAL CONDUCTIVITY / MEMBRANE INTERFACE PROBE

0 30 Feet

REFERENCES:
MAP DIGITIZED FROM A SITE PLAN BY ENVIRONMENTAL SCIENCE & ENGINEERING (6/91) AND A SITE PLAN BY QST ENVIRONMENTAL (12/02/96 - REVISED 12/28/98)

VW OAKLAND
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OAKLAND, CALIFORNIA

SITE PLAN

ARCADIS

FIGURE
2

BUILDING

SIDEWALK

MIP-1 MW-8 MIP-2 MW-5 MIP-3 MW-9 MW-6 MIP-4

28TH STREET

(C & D) GARAGE DOOR

VW-1 MW-3 VW-2 VW-3 MW-1 SIDEWALK

MIP-5 MW-4

MW-7

BROADWAY

SHOW ROOM

OFFICES

PARKING GARAGE

RAMP TO SECOND FLOOR

(B)

MW-2

OFFICES

OFFICES

ASPHALT PARKING AREA

AUTO SHOP

ELEVATED PARKING AREA

(A)

27TH STREET

LEGEND

- PROPERTY LINE
- FENCE LINE
- UTILITY LINE
- MW-3 MONITORING WELL LOCATION
- MW-5 ABANDONED MONITORING WELL
- VW-1 VAPOR EXTRACTION WELL
- FORMER UNDERGROUND STORAGE TANK LOCATION
  - (A) WASTE OIL (1,000 GAL); TANK REMOVED, SITE CLEAN
  - (B) WASTE OIL (550 GAL); TANK REMOVED
  - (C&D) WASTE OIL (550 GAL) AND UNLEADED GASOLINE (3,000 GAL); TANKS REMOVED
- MIP-1 SOIL BORING LOCATIONS WITH EC/MIP CAPABILITIES
- EC/MIP ELECTRICAL CONDUCTIVITY / MEMBRANE INTERFACE PROBE
- PROPOSED SOIL VAPOR MONITORING WELL LOCATION
- PROPOSED SUBSLAB SAMPLING POINT

0 30 Feet

REFERENCES:
MAP DIGITIZED FROM A SITE PLAN BY ENVIRONMENTAL SCIENCE & ENGINEERING (6/91) AND A SITE PLAN BY QST ENVIRONMENTAL (12/02/96 - REVISED 12/28/98)

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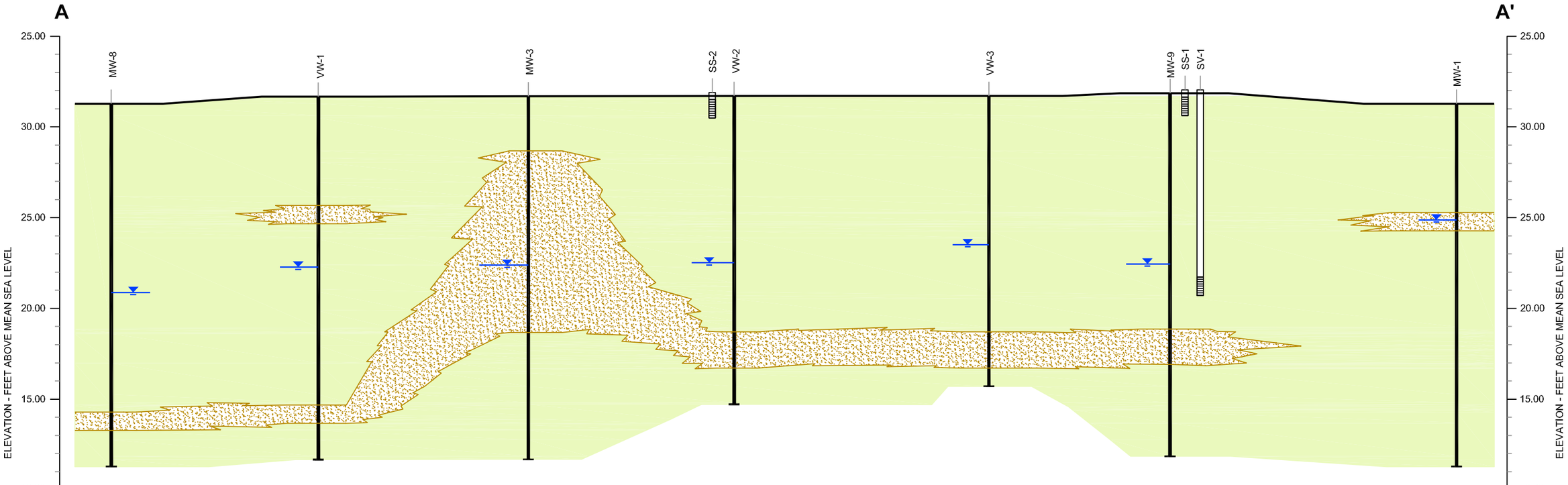
PROPOSED SOIL VAPOR SAMPLING LOCATIONS

ARCADIS

FIGURE 3



VERTICAL EXAGGERATION = 2x

0 10 Feet

HORIZONTAL SCALE: 1" = 10'

0 5 Feet

VERTICAL SCALE: 1" = 5'

LEGEND:

MW-1 SAMPLE LOCATION

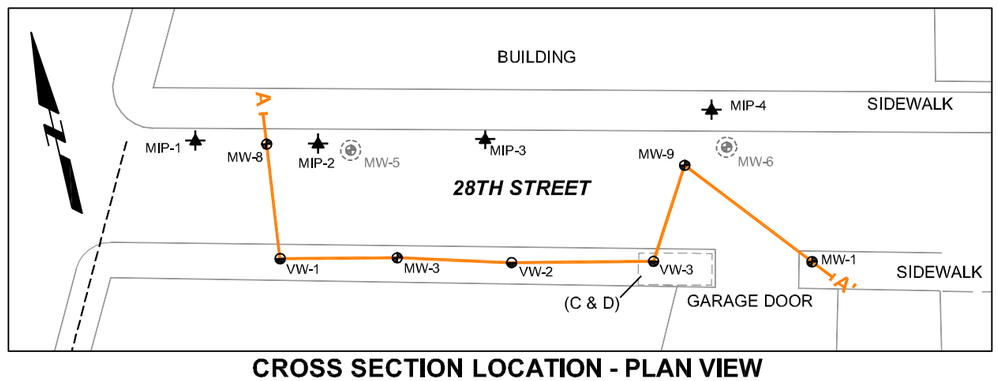
GROUND SURFACE

APPROXIMATE GROUNDWATER ELEVATION

BOTTOM OF BORING

CLAY AND SILT

SAND



CROSS SECTION LOCATION - PLAN VIEW

0 30 Feet

VW OAKLAND
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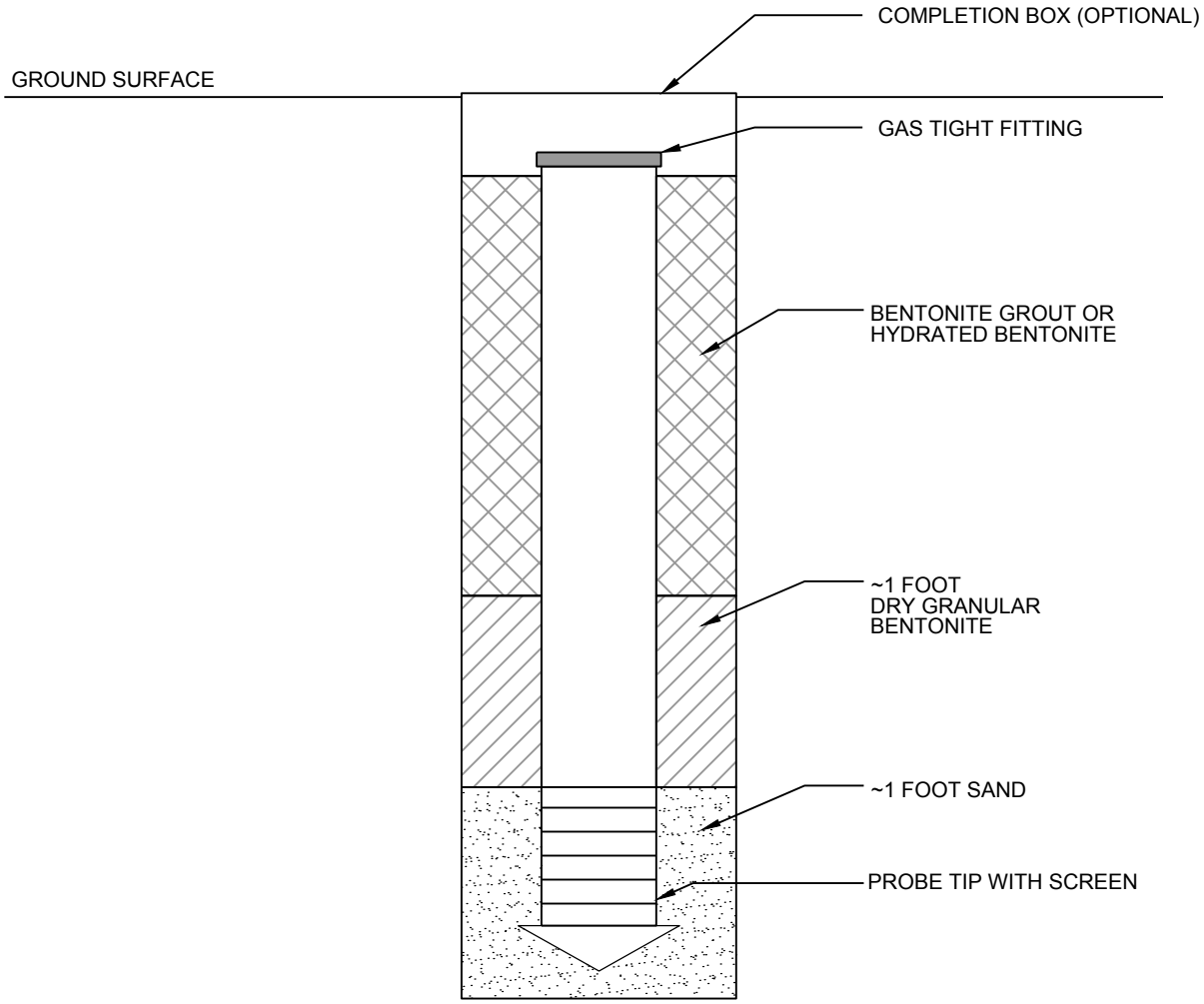
OAKLAND, CALIFORNIA

GEOLOGIC CROSS SECTION A-A'

ARCADIS

FIGURE 4



NOT TO SCALE

ADAPTED FROM
ACTIVE SOIL INVESTIGATIONS ADVISORY, APRIL 2012

VW OAKLAND
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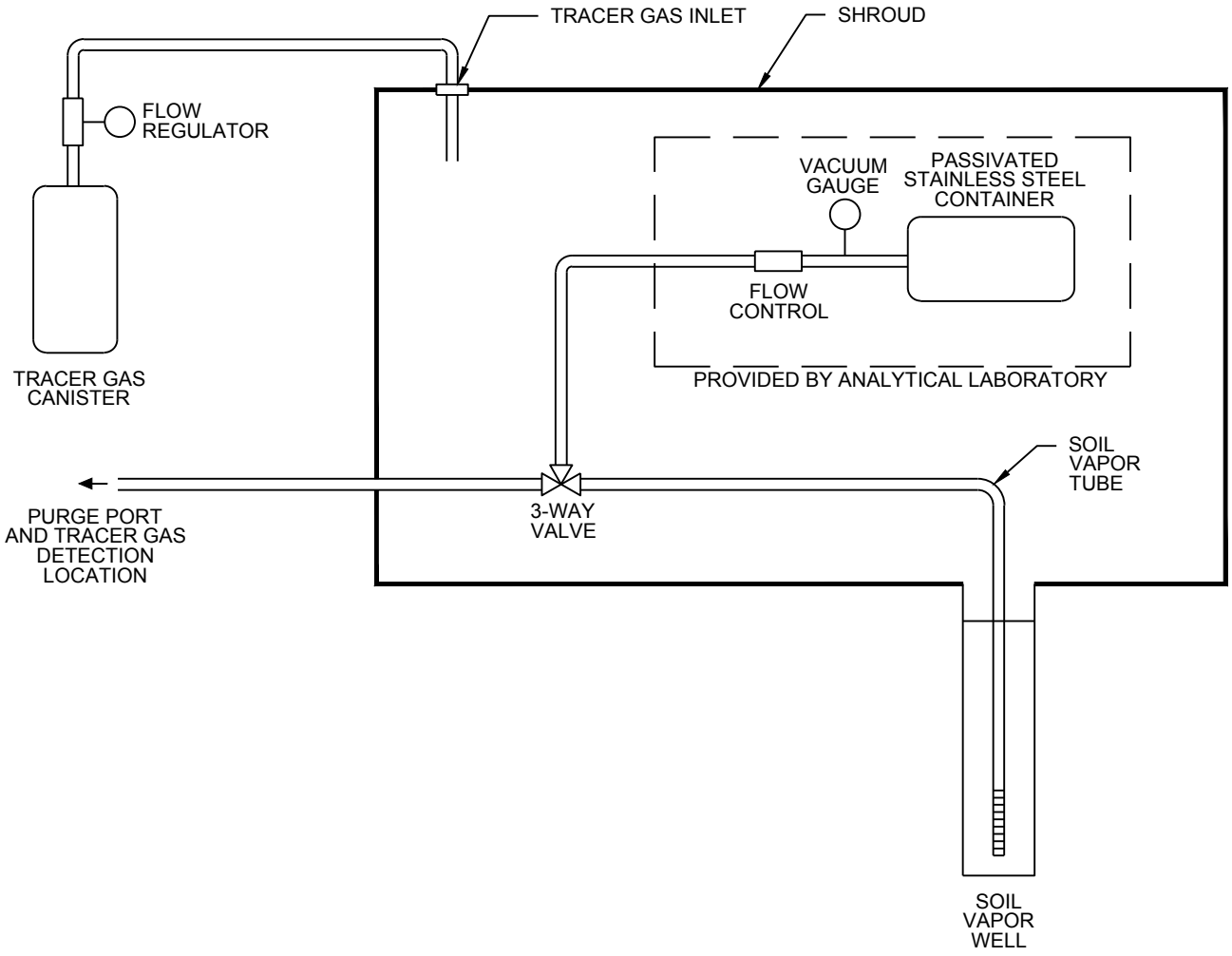
OAKLAND, CALIFORNIA

SOIL VAPOR MONITORING WELL DESIGN

ARCADIS

FIGURE
5



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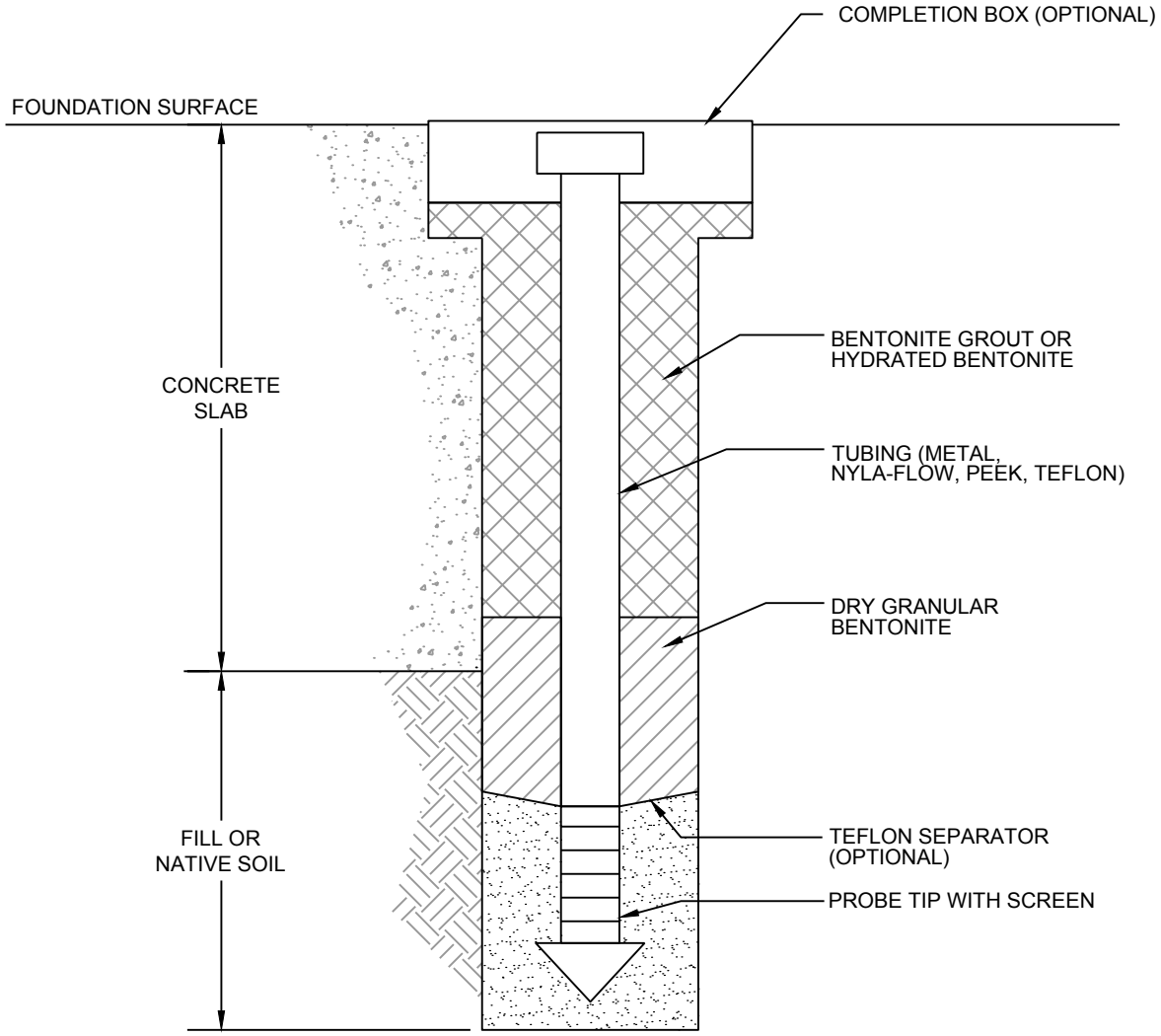
SOIL VAPOR MONITORING WELL SAMPLING TRAIN SCHEMATIC

ARCADIS

FIGURE
6



NOT TO SCALE

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SUBSLAB SAMPLING DEVICE

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FIGURE
7

Appendix A

Laboratory Analyte List and Detection Limits

Method Description	Method Code
Volatile Organic Compounds in Ambient Air	TO15

Analyte Description	CAS Number	RL - Limit	RL - Units	MDL - Limit	MDL - Units
Acetone	67-64-1	5	ppb v/v	0.178	ppb v/v
Benzene	71-43-2	0.4	ppb v/v	0.079	ppb v/v
Benzyl chloride	100-44-7	0.8	ppb v/v	0.163	ppb v/v
Bromodichloromethane	75-27-4	0.3	ppb v/v	0.066	ppb v/v
Bromoform	75-25-2	0.4	ppb v/v	0.07	ppb v/v
Bromomethane	74-83-9	0.8	ppb v/v	0.335	ppb v/v
2-Butanone (MEK)	78-93-3	0.8	ppb v/v	0.199	ppb v/v
Carbon disulfide	75-15-0	0.8	ppb v/v	0.078	ppb v/v
Carbon tetrachloride	56-23-5	0.8	ppb v/v	0.064	ppb v/v
Chlorobenzene	108-90-7	0.3	ppb v/v	0.064	ppb v/v
Dibromochloromethane	124-48-1	0.4	ppb v/v	0.079	ppb v/v
Chloroethane	75-00-3	0.8	ppb v/v	0.308	ppb v/v
Chloroform	67-66-3	0.3	ppb v/v	0.095	ppb v/v
Chloromethane	74-87-3	0.8	ppb v/v	0.197	ppb v/v
1,2-Dibromoethane (EDB)	106-93-4	0.8	ppb v/v	0.075	ppb v/v
1,2-Dichlorobenzene	95-50-1	0.4	ppb v/v	0.13	ppb v/v
1,3-Dichlorobenzene	541-73-1	0.4	ppb v/v	0.11	ppb v/v
1,4-Dichlorobenzene	106-46-7	0.4	ppb v/v	0.149	ppb v/v
Dichlorodifluoromethane	75-71-8	0.4	ppb v/v	0.145	ppb v/v
1,1-Dichloroethane	75-34-3	0.3	ppb v/v	0.072	ppb v/v
1,2-Dichloroethane	107-06-2	0.8	ppb v/v	0.088	ppb v/v
1,1-Dichloroethene	75-35-4	0.8	ppb v/v	0.129	ppb v/v
cis-1,2-Dichloroethene	156-59-2	0.4	ppb v/v	0.089	ppb v/v
trans-1,2-Dichloroethene	156-60-5	0.4	ppb v/v	0.1	ppb v/v
1,2-Dichloropropane	78-87-5	0.4	ppb v/v	0.24	ppb v/v
cis-1,3-Dichloropropene	10061-01-5	0.4	ppb v/v	0.104	ppb v/v
trans-1,3-Dichloropropene	10061-02-6	0.4	ppb v/v	0.088	ppb v/v
1,2-Dichloro-1,1,2,2-tetrafluoroethane	76-14-2	0.4	ppb v/v	0.155	ppb v/v
Ethylbenzene	100-41-4	0.4	ppb v/v	0.063	ppb v/v
4-Ethyltoluene	622-96-8	0.4	ppb v/v	0.187	ppb v/v
Hexachlorobutadiene	87-68-3	2	ppb v/v	0.432	ppb v/v
2-Hexanone	591-78-6	0.4	ppb v/v	0.087	ppb v/v
Methylene Chloride	75-09-2	0.4	ppb v/v	0.072	ppb v/v
4-Methyl-2-pentanone (MIBK)	108-10-1	0.4	ppb v/v	0.135	ppb v/v
Styrene	100-42-5	0.4	ppb v/v	0.059	ppb v/v
1,1,2,2-Tetrachloroethane	79-34-5	0.4	ppb v/v	0.069	ppb v/v
Tetrachloroethene	127-18-4	0.4	ppb v/v	0.051	ppb v/v
Toluene	108-88-3	0.4	ppb v/v	0.051	ppb v/v
1,2,4-Trichlorobenzene	120-82-1	2	ppb v/v	0.433	ppb v/v
1,1,1-Trichloroethane	71-55-6	0.3	ppb v/v	0.065	ppb v/v
1,1,2-Trichloroethane	79-00-5	0.4	ppb v/v	0.067	ppb v/v
Trichloroethene	79-01-6	0.4	ppb v/v	0.105	ppb v/v
Trichlorofluoromethane	75-69-4	0.4	ppb v/v	0.196	ppb v/v
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.4	ppb v/v	0.163	ppb v/v
1,2,4-Trimethylbenzene	95-63-6	0.8	ppb v/v	0.162	ppb v/v
1,3,5-Trimethylbenzene	108-67-8	0.4	ppb v/v	0.125	ppb v/v
Vinyl acetate	108-05-4	0.8	ppb v/v	0.145	ppb v/v
Vinyl chloride	75-01-4	0.4	ppb v/v	0.12	ppb v/v
m,p-Xylene	179601-23-1	0.8	ppb v/v	0.1	ppb v/v
o-Xylene	95-47-6	0.4	ppb v/v	0.054	ppb v/v
4-Bromofluorobenzene (Surr)	460-00-4		ppb v/v		ppb v/v
1,2-Dichloroethane-d4 (Surr)	17060-07-0		ppb v/v		ppb v/v
Toluene-d8 (Surr)	2037-26-5		ppb v/v		ppb v/v