



**SUBSURFACE INVESTIGATION AND
LIMITED HUMAN HEALTH RISK ASSESSMENT
14700 NELSON AVENUE
CITY OF INDUSTRY, CALIFORNIA**

PREPARED FOR:

Industry Urban-Development Agency
15625 East Stafford Street, Suite 200
Industry, California 91744

PREPARED BY:

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April 7, 2010
Project No. 100213002

ARDENT
ENVIRONMENTAL
GROUP, INC.

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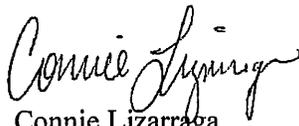
Mr. Kevin Radecki
Industry Urban-Development Agency
15625 East Stafford Street, Suite 200
Industry, California 91744

Subject: Subsurface Investigation and
Limited Human Health Risk Assessment
14700 Nelson Avenue
City of Industry, California

Dear Mr. Radecki:

In accordance with our proposal and change order dated March 8, 2010 and March 22, 2010, respectively, Ardent Environmental Group, Inc. has completed a subsurface investigation and limited human health risk assessment for the subject property (site). The following report documents our findings and provides opinions, conclusions, and recommendations regarding the environmental status of the site. We appreciate the opportunity to be of service to you on this project.

Sincerely,
Ardent Environmental Group, Inc.


Connie Lizarraga
Staff Scientist


Paul A. Roberts, P.G., R.E.A. I/II
Principal Geologist

CCL/PAR/paw

Distribution: (1) Addressee – electronic copy
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EXECUTIVE SUMMARY

Ardent Environmental Group, Inc. (Ardent) was retained by Richards Watson & Gershon, on behalf of their client, Industry Urban-Development Agency (Agency) to complete a subsurface investigation and limited human health risk assessment (HHRA) at the property located at 14700 Nelson Avenue in the City of Industry, California (site). The subsurface investigation was recommended by Ardent Environmental Group, Inc. (Ardent) following completion of a draft Phase I Environmental Site Assessment (ESA) and Document Review dated March 8, 2010 for the site. The Agency is considering purchasing the property, demolishing the buildings, and preparing the site for redevelopment.

The northern portion of the site was formerly used as a welding and sheet metal facility and auto body shop from the 1950s to 1967. During this time, the southern portion of the site remained vacant. Welding and sheet metal operations usually consist of metal fabrication and do not include metal grinding or machining. However, some volatile organic compounds (VOCs) may have been used by both facilities as degreasing operations. To further assess whether these activities might have impacted the site, Ardent recommended conducting a soil gas survey throughout the northern portion of the site as a screening technique to assess possible source areas. A previous geophysical survey completed in the vicinity of these former businesses has indicated no metallic anomalies indicative of an underground storage tank (UST). However, a geophysical anomaly, possibly associated with a former UST excavation, was noted in the northern portion of the site. To further assess whether residual contaminants remained, Ardent recommended completing a soil sampling program in the vicinity of the geophysical anomaly.

In 1970, the entire subject site was redeveloped with the existing lumber yard. Areas of possible soil contamination associated with this current business included the hazardous waste and motor oil areas located in the northern and southern portions of the site, the on-site railroad spur, and staining associated with an off-site hazardous materials storage area located along the common property line with the site. Ardent recommended soil sampling in these areas. USTs (referred to as Former UST Nos. 1-5) were historically removed by others from the central portion of the site. Although some residual contaminants remained, these constituents would be considered

low. However, to further assess whether the remaining contaminants could pose a human health risk due to vapor intrusion, Ardent recommended completing a soil gas survey in the vicinity of the former USTs.

In addition, the site is located within the San Gabriel Valley Groundwater Basin within the Puente Valley Operable Unit. Portions of the San Gabriel Valley Groundwater Basin have been listed on the National Priority List (NPL), or Superfund Site, due to the presences of VOCs in groundwater, namely trichloroethene (TCE) and tetrachloroethylene (PCE). Groundwater has been reported at depths of approximately 58 feet below the ground surface (bgs). Current American Society for Testing and Materials (ASTM) standards require the evaluation of possible vapor intrusion into existing and planned buildings from known contaminants beneath the site. Based on this information, Ardent recommended completing a soil gas survey throughout the site to assess whether a health risk was present due to possible vapor intrusion.

The recommended soil sampling investigations have been performed. Laboratory results indicated no detectable to low concentrations of chemical constituents in soil samples analyzed, and therefore, there is a low likelihood that elevated concentrations of certain chemicals are present in the vicinity of the features investigated. Based on these results, the possible former UST excavation, two hazardous waste and motor oil areas, the railroad spur, and staining associated with an off-site hazardous storage area, would no longer be considered an environmental concern to the site.

Based on the results of the soil gas survey, sporadic low concentrations of benzene were detected throughout the site. The source of the benzene in soil gas is unknown. That is, the concentrations of benzene are too low and too sporadic to identify a specific source. The presence of low concentrations of benzene in soil gas may be due to some residual fuel contamination from former USTs at the site or may be due to an off-site source. The lack of other VOCs in the soil gas samples (i.e., chlorinated solvents, including TCE and PCE) indicates that the regional groundwater contaminants are not an issue to the site.

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Due to the presence of benzene in soil gas at the site, a limited health risk assessment was completed to assess whether a possible human health risk was present due to inhalation of contaminants by workers in proposed structures. Based on the results of a limited site specific HHRA, the concentrations of benzene passes the approved cancer risk for continued commercial land use. Based on the results of this investigation, current regulatory guidelines and our professional judgment, Ardent has no recommendations for additional investigations or remediation at this time.

1 INTRODUCTION

Ardent Environmental Group, Inc. (Ardent) was retained by Richards Watson & Gershon, on behalf of their client, Industry Urban-Development Agency (Agency) to complete a subsurface investigation and limited human health risk assessment (HHRA) at the property located at 14700 Nelson Avenue in the City of Industry, California (site; Figure 1). The subsurface investigation was recommended by Ardent Environmental Group, Inc. (Ardent) following completion of a draft Phase I Environmental Site Assessment (ESA) and Document Review dated March 8, 2010 for the site. Work was conducted in accordance with the proposal and change order dated March 8, 2010 and March 22, 2010 between Richards Watson & Gershon and Ardent. The Agency is considering purchasing the property, demolishing the buildings, and preparing the site for redevelopment.

2 BACKGROUND

Based on the results of the draft Phase I ESA, Ardent concluded that the northern portion of the site was formerly used as a welding and sheet metal facility and auto body shop from the 1950s to 1967. During this time, the southern portion of the site remained vacant. Welding and sheet metal operations usually consist of metal fabrication and do not include metal grinding or machining. However, some volatile organic compounds (VOCs) may have been used by both facilities as degreasing operations. To further assess whether these activities might have impacted the site, Ardent recommended conducting a soil gas survey throughout the northern portion of the site as a screening technique to assess possible source areas. A previous geophysical survey completed in the vicinity of these former businesses has indicated no metallic anomalies indicative of an underground storage tank (UST). However, a geophysical anomaly, possibly associated with a former UST excavation, was noted in the northern portion of the site. To further assess whether residual contaminants remained, Ardent recommended completing a soil sampling program in the vicinity of the geophysical anomaly.

In 1970, the entire subject site was redeveloped with the existing lumber yard. Areas of possible soil contamination associated with this current business included the hazardous waste and motor

oil areas located in the northern and southern portions of the site, the on-site railroad spur, and staining associated with an off-site hazardous materials storage area located along the common property line with the site. Ardent recommended soil sampling in these areas. USTs (referred to as Former UST Nos. 1-5) were historically removed by others from the central portion of the site. Although some residual contaminants remained, these constituents would be considered low. However, to further assess whether the remaining contaminants could pose a human health risk due to vapor intrusion, Ardent recommended completing a soil gas survey in the vicinity of the former USTs.

In addition, the site is located within the San Gabriel Valley Groundwater Basin within the Puente Valley Operable Unit. Portions of the San Gabriel Valley Groundwater Basin have been listed on the National Priority List (NPL), or Superfund Site, due to the presences of VOCs in groundwater, namely trichloroethene (TCE) and tetrachloroethylene (PCE). Groundwater has been reported at depths of approximately 58 feet below the ground surface (bgs). Current American Society for Testing and Materials (ASTM) standards require the evaluation of possible vapor intrusion into existing and planned buildings from known contaminants beneath the site. Based on this information, Ardent recommended completing a soil gas survey throughout the site to assess whether a health risk was present due to possible vapor intrusion.

3 OBJECTIVES

The objectives of the work described herein were to assess whether elevated concentrations of VOCs were present in soil gas throughout the site (as a result of the regional groundwater issue) and in selected areas of the site (residual contaminants associated with Former UST Nos. 1-5), and to assess whether elevated concentrations of selected chemicals were present in shallow soils in the vicinity of a possible former UST excavation, two hazardous waste and motor oil areas, a railroad spur, and staining associated with an off-site hazardous materials storage area.

4 SUBSURFACE INVESTIGATION AND LIMITED RISK ASSESSMENT

The subsurface investigation was completed on March 19, 2010 and consisted of advancing 13 soil gas probes (designated SG-1 through SG-13) throughout the site and drilling 7 soil borings

(designated SB1 through SB7) in selected areas of the site (Figures 2, 3, 4, and 5). The soil gas probes and borings were advanced using direct push equipment. The soil gas survey was completed in general accordance with RWQCB and Department of Toxic Substances Control (DTSC) guidelines. Laboratory reports are provided in Appendix A.

4.1 Soil Gas Survey and Laboratory Results

The soil gas survey was completed to further assess possible VOC vapor concentrations associated with the regional groundwater plume, historical land uses, and residual contaminants associated with Former UST Nos. 1 through 5. The northern 1/3rd portion of the site was divided into 6 grids measuring approximately 100 feet by 200 feet, and the southern 2/3rd portion of the site was divided into 6 grids measuring approximately 200 feet by 200 feet. The tighter grid in the northern portion of the site acted as a screening technique to further assess whether VOC impacted soil was present due to the historical land uses. One additional point was placed in the location of Former UST Nos. 1 through 5 (SG-6 on Figure 3). Each sample point was placed within a soil boring drilled to a depth of approximately 5 feet bgs. NyloFlow tubing was installed within each soil boring and a sand pack was placed around each sample point. The remaining soil boring was filled with hydrated granular bentonite. A vapor sample was collected at each point. The soil vapor samples were analyzed for VOCs, including benzene, toluene, ethylbenzene, and xylenes (BTEX) and chlorinated solvents, in general accordance with EPA Method No. 8260B.

As presented on Table 1, laboratory results indicated no detectable concentrations of VOCs, with the exception of low concentrations of sporadic benzene. The source of the benzene in soil gas is unknown. That is, the concentrations of benzene are too low and too sporadic to identify a specific source. The presence of low concentrations of benzene in soil gas may be due to some residual fuel contamination from former USTs at the site or may be due to an off-site source. The lack of other VOCs in the soil gas samples (i.e., chlorinated solvents, including TCE and PCE) indicates that the regional groundwater contaminants are not an issue to the site.

4.2 Results of the Limited Human Health Risk Assessment

Due to the presence of benzene in soil gas at the site, a limited health risk assessment was completed to assess whether a possible human health risk was present due to inhalation of contaminants by workers in proposed structures. Risk assessments are performed in a tiered manner, starting with the most conservative evaluation. Ardent compared the maximum concentration detected at the site with regulatory standards set by Cal-EPA to assess whether a possible vapor intrusion issue might be present. The maximum concentration of benzene detected in soil gas exceeded the screening levels for benzene presented in Cal-EPA's California Human Health Screening Levels (CHHSLs) for commercial and residential land uses (Table 1). Based on this information, Ardent completed a Site Screening Level, Human Health Risk Assessment (SSL-HHRA). The SSL-HHRA uses a DTSC approved model with default site parameters and the maximum contaminant levels detected. Based on the results of the SSL-HHRA, the concentrations did not pass the approved cancer risk for benzene. Ardent then evaluated the benzene concentrations using a Limited Site Specific, HHRA (LSS-HHRA). This model-based evaluation uses some site conditions, such as lithological conditions obtained during the subsurface investigation, and the upper 95 percent confident level (UCL) of the statistical mean concentration of benzene in soil gas. The results of the LSS-HHRA concluded that the concentrations do not pass for a residential land use, but did pass for a commercial land use. Based on this information, a more detailed HHRA for the site is not necessary (as long as the property use remains commercial). In addition, based on the results of the LSS-HHRA, there is a high likelihood, in our opinion, that the results of a more detailed HHRA would be favorable for any proposed commercial use.

4.3 Data Evaluation for the Limited Human Health Risk Assessment

A screening-level health risk assessment from inhalation of volatile toxic organics was performed using the soil gas screening model developed by the EPA and modified by California Department of Toxic Substances Control (DTSC) (i.e., Johnson & Ettinger [J&E] model). Benzene, identified as a Group A carcinogen (cancer-causing substance) by the EPA, was the only toxic volatile organic detected in the subsurface during the soil gas sur-

vey. The health risk assessment calculated the lifetime excess cancer and non-cancer risk from estimated concentrations of benzene in indoor air.

Consistent with the DTSC guidelines on vapor intrusion, the screening-level assessment considered two scenarios: (i) assuming unrestricted future site use and (ii) assuming the site use is commercial with specific building configuration. The screening-level assessment considered the maximum concentration of benzene of 0.24 micrograms per liter (ug/L) in accordance with the guidelines. In addition, a representative concentration of 0.158 ug/L, equivalent to the 95 percent UPL of the mean, was also used in the assessment.

The soil gas screening model was used to estimate indoor air concentrations of benzene from subsurface soil gas concentrations and the resulting lifetime health risks. For scenario (i) unrestricted use, the maximum benzene concentration of 0.24 ug/L indicated a lifetime excess cancer risk of 1 in 379,320, which exceeds the permissible limit of 1 in 1 million for a "screen and walk away" option. The lifetime excess non-cancer risk was 0.007, less than the allowable limit of 1. For a statistically averaged representative concentration of 0.158 ug/L, the excess cancer risk was 1 in 576,182, which still exceeded the threshold of 1 in 1 million. The non-cancer risk was 0.005 (less than the limit of 1). These results indicate that the "screen and walk away" option cannot be considered for unrestricted site use and further studies may be needed to evaluate a more accurate health risk (i.e., refining the assessment with more site-specific data).

For scenario (ii) commercial use, a building with an air exchange rate of 0.75 and mixing height of air of 3.66 meters was considered. Under this scenario, the excess cancer risk from the maximum subsurface benzene concentration of 0.24 ug/L was 1 in 853,492 (exceeding the permissible threshold of 1 in 1 million) and the non-cancer risk was 0.003, within the threshold value of 1. When the statistical average value of 0.158 ug/L was used as the representative concentration, the excess cancer risk was calculated as 1 in 1,296,443 (within the permissible threshold limit of 1 in 1 million) and the excess non-cancer risk was 0.002 (within the limit value of 1). The backup documentation for the limited risk assessment is presented in Appendix B.

4.4 Soil Sampling and Laboratory Results

The subsurface investigation also included drilling 7 soil borings to depths up to 10 feet bgs in selected areas of the site (Figures 2, 3, 4, and 5). The drilling activities were conducted on March 19, 2010. Soil borings were advanced in areas of the recognized environmental conditions (RECs) discussed in the previously prepared Phase I ESA. Soil samples were collected from each boring as shown on the boring logs (see Appendix C) for field screening and/or chemical analyses. In general, soil lithology consisted of silty fine sand. Soil samples were screened in the field for possible staining, odors, or elevated photoionization detector (PID) readings. No stained, odorous, or elevated PID readings were noted. Boring logs, presenting lithology and field observations, are presented in Appendix C.

As presented herein, selected samples were analyzed for total petroleum hydrocarbons carbon chain C₁₀-C₃₂ (TPHcc), VOCs (some including fuel oxygenates), Title 22 metals, and/or polynuclear aromatics (PNAs) in general accordance with EPA Method Nos. 8015 (modified), 8260B, 6010/7000 series, and 8270C. As noted on Table 2, laboratory results indicated no detectable concentrations of TPHcc, VOCs, and PNAs. Metal concentrations were compared to the CHHSL values. With the exception of arsenic, the concentrations of metals detected would be considered low (i.e., below the CHHSL values).

Because the natural occurring concentrations of arsenic in California soils typically exceed the CHHSL levels, elevated concentrations of arsenic were defined as levels exceeding the published background concentrations by the Kearney Foundation of Soil Science (Kearney). According to Kearney, background concentrations of arsenic in California ranges from approximately 0.59 to 11 mg/kg. Based on this publication, elevated concentrations of arsenic were defined as concentrations exceeding 11 mg/kg. Other publications that are available documenting metal concentrations in soil throughout the western United States indicate concentrations of naturally occurring arsenic ranging from less than 0.1 to 40 mg/kg (Dragun, 1988) and less than 0.1 to 97 mg/kg (Shacklette & Boerngen, 1984).

4.4.1 Boring SB1 – Geophysical Anomaly

Boring SB1 was drilled in the location of a former geophysical anomaly detected in the northern portion of the site by others. As noted in the draft Phase I ESA, Former UST No. 6 was described as a 550-gallon waste oil UST associated with a historic auto body shop that was located in the northern portion of the site. A previous consultant completed a geophysical survey in this area to assess whether this tank still existed. Based on the results, no evidence of a UST was detected in the northern portion of the site, although, a non-metallic geophysical anomaly was reported in this area. Based on our review of the geophysical survey report, the identified geophysical anomaly may have been a historical excavation associated with Former UST No. 6. No soil sampling was completed in the vicinity of a possible tank excavation (Ardent, 2010). Based on these results, Ardent recommended soil sampling be completed in the vicinity of this possible excavation.

A 550-gallon UST is typically 4 feet in diameter and usually the top of the tank is placed at a depth of approximately 4 feet bgs; for a total depth of the UST at approximately 8 feet bgs. Based on this information, boring SB1 was drilled in the approximate center of the geophysical anomaly to a depth of approximately 10 feet bgs (Figure 2). The soil sample collected at 10 feet bgs was analyzed for TPHcc, VOCs (including fuel oxygenates), and Title 22 metals. Laboratory results indicated no detectable concentrations of TPHcc and VOCs, and no detectable to low concentrations of Title 22 metals.

4.4.2 Boring SB2 – Northern Hazardous Waste and Motor Oil Area

Boring SB2 was drilled in the vicinity of the hazardous waste and motor oil area located in the northern portion of the site (Figures 2 and 4). Although this area (along with another hazardous waste and motor oil area in the southern portion of the site, see below) was successfully investigated by others in 2000 and laboratory results indicated no detectable concentrations of constituents analyzed, the lumber yard continued to operate for approximately 8 years after completion of the subsurface in-

vestigation. Therefore, Ardent recommended that soil samples be collected in these areas to assess whether impacted soils were present.

Boring SB2 was drilled to a depth of approximately 5 feet bgs and soil samples were collected at 2.5 and 5 feet bgs. The soil sample collected at a depth of approximately 2.5 feet bgs was analyzed for TPHcc, VOCs, and Title 22 metals. Laboratory results indicated no detectable concentrations of TPHcc and VOCs, and no detectable to low concentrations of metals.

4.4.3 Boring SB3 – Staining Associated with Off-Site Hazardous Materials Storage

During the site vicinity reconnaissance completed during the Phase I ESA, Ardent observed a hazardous materials storage area on the adjacent property to the northwest (Figure 2 and 5). This area was noted along the common property line with the site. What appeared to be petroleum hydrocarbon staining was noted on the adjacent property and was observed to be encroaching onto the site. Containers in this area included one 55-gallon drum, three 5-gallon buckets, and several car batteries. A roll-off container, possibly containing additional materials, was noted in this area on the adjacent property. Based on these observations, the off-site hazardous materials storage area was considered an environmental concern to the site.

Boring SB3 was drilled to a depth of approximately 5 feet bgs and soil samples were collected at 2.5 and 5 feet bgs. The soil sample collected at a depth of approximately 2.5 feet bgs was analyzed for TPHcc, VOCs, and Title 22 metals. Laboratory results indicated no detectable concentrations of TPHcc and VOCs, and no detectable to low concentrations of metals.

4.4.4 Boring SB4 – Southern Hazardous Waste and Motor Oil Area

Boring SB4 was drilled adjacent to the southern hazardous waste and motor oil area to a depth of approximately 5 feet bgs and soil samples were collected at 2.5 and 5 feet bgs (Figures 2 and 5). The soil sample collected at a depth of approximately 2.5

feet bgs was analyzed for TPHcc, VOCs, and Title 22 metals. Laboratory results indicated no detectable concentrations of TPHcc and VOCs, and no detectable to low concentrations of metals.

4.4.5 Borings SB5 through SB7 – Railroad Spur

It has been our experience that ballast materials beneath railroad spurs sometimes contain petroleum hydrocarbons and PNAs. Although a previous consultant apparently completed a subsurface investigation in the general vicinity of these features, it was unclear how close these borings were placed to the railroad spur and associated ballast (Ardent, 2010). In addition, some soil samples were analyzed from depths of up to 5 feet bgs, well below the ballast materials being investigated. Based on this information, and the fact that no soil samples were analyzed for PNAs, Ardent recommended additional sampling along the railroad spur.

Borings SB5 through SB7 were drilled along the railroad spur (Figure 2). Railroad ballast materials were discovered during our drilling activities at depths of approximately 1 to 2 feet bgs. Soil samples were collected at 3 feet bgs from each soil boring and were analyzed for TPHcc and PNAs. Laboratory results indicated no detectable concentrations of these constituents.

5 CONCLUSIONS

The northern portion of the site was formerly used as a welding and sheet metal facility and auto body shop from the 1950s to 1967. During this time, the southern portion of the site remained vacant. Welding and sheet metal operations usually consist of metal fabrication and do not include metal grinding or machining. However, some VOCs may have been used by both facilities as degreasing operations. To further assess whether these activities might have impacted the site, Ardent recommended conducting a soil gas survey throughout the northern portion of the site as a screening technique to assess possible source areas. A previous geophysical survey completed in the vicinity of these former businesses has indicated no metallic anomalies indicative of a UST. However, a geophysical anomaly, possibly associated with a former UST excavation, was

noted in the northern portion of the site. To further assess whether residual contaminants remained, Ardent recommended completing a soil sampling program in the vicinity of the geophysical anomaly.

In 1970, the entire subject site was redeveloped with the existing lumber yard. Areas of possible soil contamination associated with this current business included the hazardous waste and motor oil areas located in the northern and southern portions of the site, the on-site railroad spur, and staining associated with an off-site hazardous materials storage area located along the common property line with the site. Ardent recommended soil sampling in these areas. USTs (referred to as Former UST Nos. 1-5) were historically removed by others from the central portion of the site. Although some residual contaminants remained, these constituents would be considered low. However, to further assess whether the remaining contaminants could pose a human health risk due to vapor intrusion, Ardent recommended completing a soil gas survey in the vicinity of the former USTs.

In addition, the site is located within the San Gabriel Valley Groundwater Basin within the Puente Valley Operable Unit. Portions of the San Gabriel Valley Groundwater Basin have been listed on the NPL, or Superfund Site, due to the presences of VOCs in groundwater, namely TCE and PCE. Groundwater has been reported at depths of approximately 58 feet bgs. Current ASTM standards require the evaluation of possible vapor intrusion into existing and planned buildings from known contaminants beneath the site. Based on this information, Ardent recommended completing a soil gas survey throughout the site to assess whether a health risk was present due to possible vapor intrusion.

The recommended soil sampling investigations have been performed. Laboratory results indicated no detectable to low concentrations of chemical constituents in soil samples analyzed, and therefore, there is a low likelihood that elevated concentrations of certain chemicals are present in the vicinity of the features investigated. Based on these results, the possible former UST excavation, two hazardous waste and motor oil areas, the railroad spur, and staining associated with an off-site hazardous storage area, would no longer be considered an environmental concern to the site.

Based on the results of the soil gas survey, sporadic low concentrations of benzene were detected throughout the site. The source of the benzene in soil gas is unknown. That is, the concentrations of benzene are too low and too sporadic to identify a specific source. The presence of low concentrations of benzene in soil gas may be due to some residual fuel contamination from former USTs at the site or may be due to an off-site source. The lack of other VOCs in the soil gas samples (i.e., chlorinated solvents, including TCE and PCE) indicates that the regional groundwater contaminants are not an issue to the site.

Due to the presence of benzene in soil gas at the site, a limited health risk assessment was completed to assess whether a possible human health risk was present due to inhalation of contaminants by workers in proposed structures. Based on the results of a limited site specific HHRA, the concentrations of benzene passes the approved cancer risk for continued commercial land use.

6 RECOMMENDATIONS

Based on the results of this investigation, current regulatory guidelines and our professional judgment, Ardent has no recommendations for additional investigations or remediation at this time.

7 REFERENCES

- Ardent Environmental Group, Inc. (Ardent), 2010, Draft Phase I Environmental Site Assessment and Document Review, 14700 Nelson Avenue, City of Industry, California: Report prepared for Richards Watson & Gershon, Los Angeles, California, dated March 8.
- California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC), 2005, Interim Final for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, revised February 7.
- Johnson, P. C, and R. A. Ettinger, 1991. Heuristic model for predicting the intrusion rate of contaminant vapors in buildings.
- Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, 1996, Background Concentrations of Trace and Major Elements in California Soils, dated March.
- Regional Water Quality Control Board, Los Angeles Region (RWQCB), 1996, Interim Site Assessment & Cleanup Guidebook, dated May.
- Shacklette, H.T. and Boerngen, J.G., 1984, Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States, United States Geological Society Professional Paper 1270.
- United States Environmental Protection Agency (EPA), 2002, Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance). Office of Solid Waste and Emergency Response (OSWER), dated November 29.

14700 Nelson Avenue
 City of Industry

April 7, 2010
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TABLE 1 - SUMMARY OF SOIL GAS RESULTS

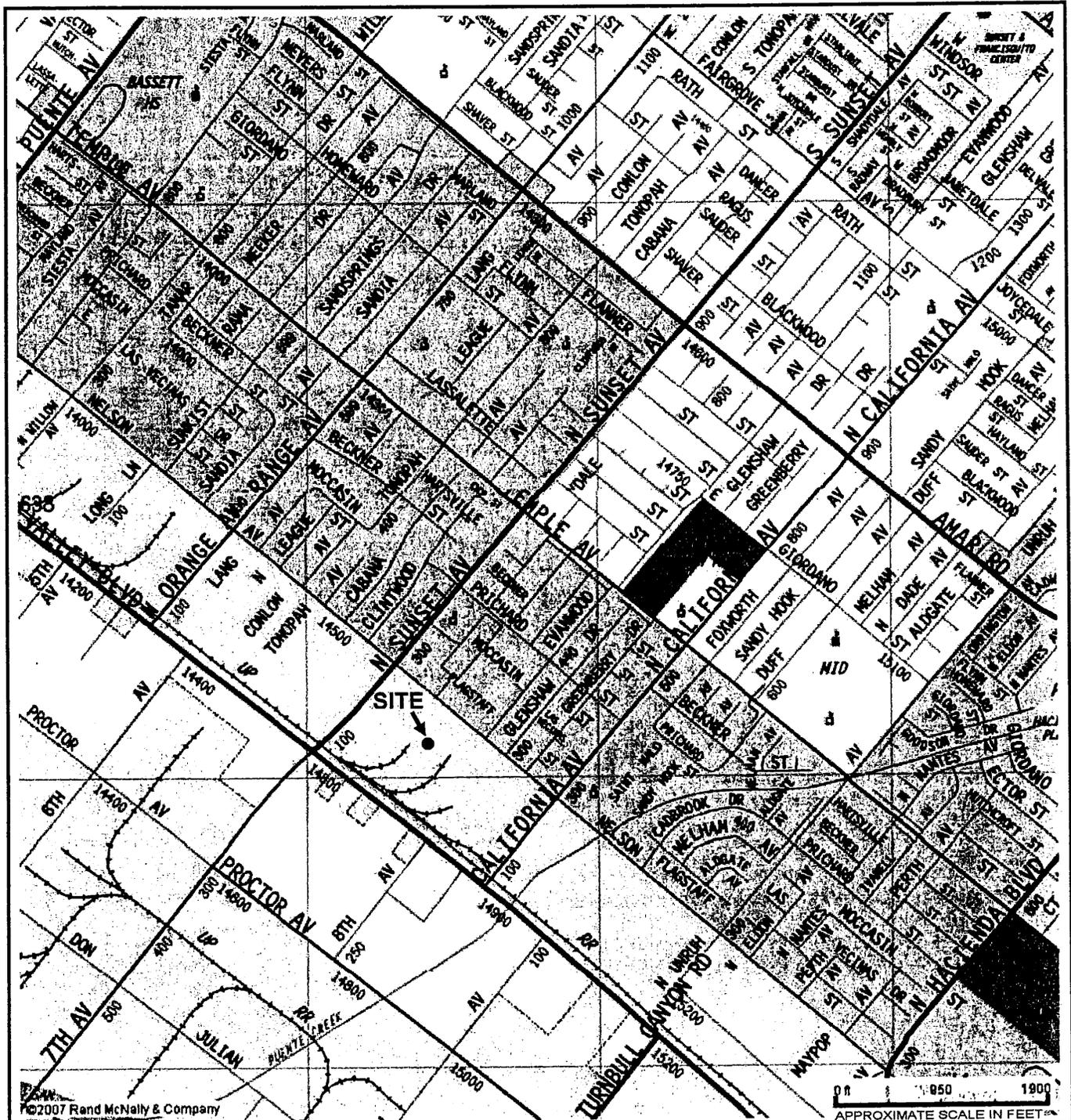
Soil Gas Points	Depth (ft bgs)	Benzene (ug/l)	All Other VOCs
SG-1	5 1PV	0.11	ND
	5 3PV	ND	ND
	5 7PV	ND	ND
SG-2	5	0.24	ND
	5 DUP	0.2	ND
SG-3	5	ND	ND
SG-4	5	ND	ND
SG-5	5	ND	ND
SG-6	5	0.12	ND
SG-7	5	ND	ND
SG-8	5	0.18	ND
SG-9	5	0.18	ND
SG-10	5	ND	ND
SG-11	5	0.2	ND
SG-12	5	ND	ND
SG-13	5	ND	ND
CHHSL for Commercial Land Use		0.12	Various
Notes: ft bgs - feet below the ground surface ug/l - micrograms per liter VOCs - volatile organic compounds analyzed in general accordance with EPA Method No. 8260B PV - purge volume DUP - Duplicate sample ND - no detectable concentration above the laboratory detection limit CHHSL - Cal-EPA California Human Health Screening Level			

TABLE 2 - SUMMARY OF SOIL SAMPLE RESULTS

Soil Boring	Rationale	Depth (ft bgs)	TPH (mg/kg)			VOCs (ug/kg)	VOCs including fuel oxygenates (ug/kg)	Title 22 Metals (mg/kg)	PNA (mg/kg)
			TPHg C ₁₀ -C ₁₂	TPHd C ₁₃ -C ₂₂	TPHo C ₂₃ -C ₃₂				
SB1	Geophysical anomaly possibly associated with a former waste oil underground storage tank excavation (Former UST No. 6)	10	ND	ND	ND	---	ND	<CHHSL and/or background concentrations	---
SB2	Northern Hazardous Waste and Motor Oil Area	2.5	ND	ND	ND	ND	---	<CHHSL and/or background concentrations	---
SB3	Staining associated with Off-Site Hazardous Materials Storage	2.5	ND	ND	ND	ND	---	<CHHSL and/or background concentrations	---
SB4	Southern Hazardous Waste and Motor Oil Area	2.5	ND	ND	ND	ND	---	<CHHSL and/or background concentrations	---
SB5	Railroad Spur	3	ND	ND	ND	---	---	---	ND
SB6	Railroad Spur	3	ND	ND	ND	---	---	---	ND
SB7	Railroad Spur	3	ND	ND	ND	---	---	---	ND

Notes:

- ft bgs - feet below the ground surface
- TPH - total petroleum hydrocarbons analyzed in general accordance with EPA Method No. 8015 (modified)
- TPHg - total petroleum hydrocarbons as gasoline
- TPHd - total petroleum hydrocarbons as diesel fuel
- TPHo - total petroleum hydrocarbons as oil
- VOCs - volatile organic compounds analyzed in general accordance with EPA Method No. 8260B
- Title 22 Metals analyzed in general accordance with EPA Method Nos. 6010/7000 series
- PNA - polynuclear aromatics analyzed in general accordance with EPA Method No. 8270C
- ug/kg - micrograms per kilogram
- mg/kg - milligrams per kilograms
- ND - no detectable concentration above the laboratory detection limit
- not analyzed
- <CHHSL - less than the reported Cal-EPA California Human Health Screening Level

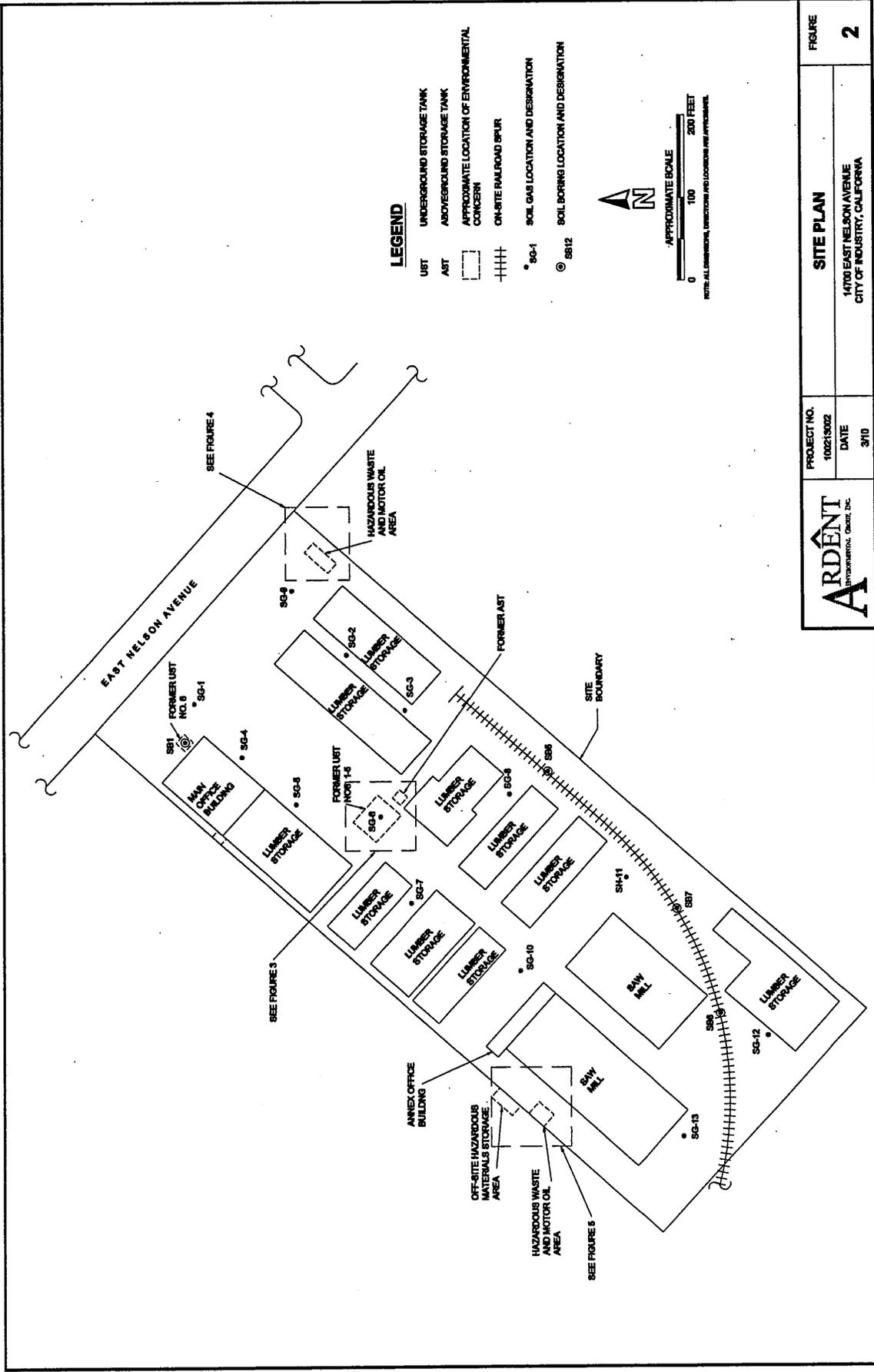


REFERENCE: 2007 RAND MCNALLY DIGITAL EDITION FOR LOS ANGELES/ORANGE COUNTY, STREET GUIDE AND DIRECTORY



NOTE: ALL DIMENSIONS, DIRECTIONS, AND LOCATIONS ARE APPROXIMATE

	PROJECT NO.	SITE LOCATION MAP 14700 NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	FIGURE 1
	DATE		
	100213001		
	2/10		



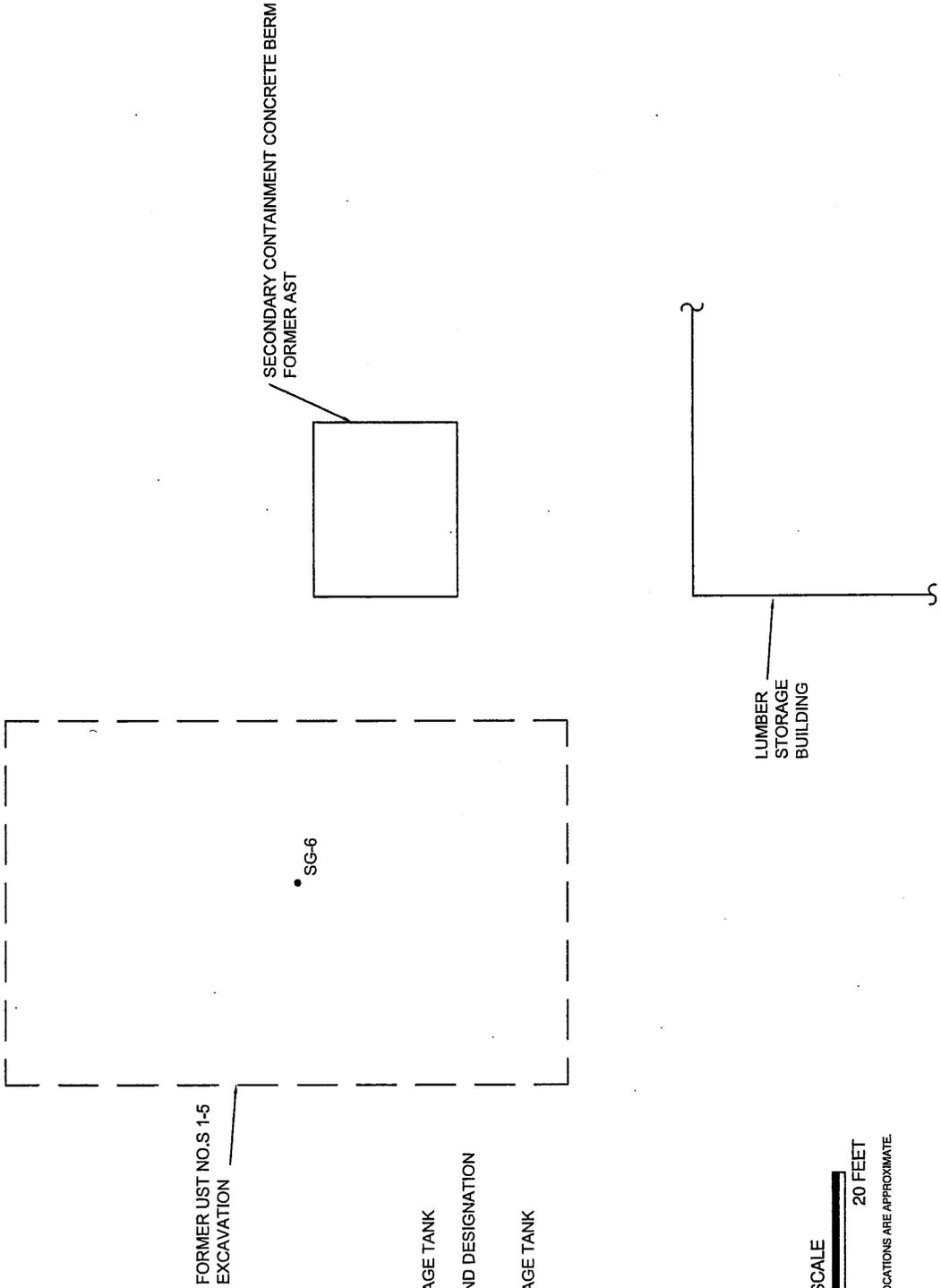
LEGEND

- UST UNDERGROUND STORAGE TANK
- AST ABOVEGROUND STORAGE TANK
- Approximate location of environmental concern
- ON-SITE RAILROAD SPUR
- SG-1 SOIL GAS LOCATION AND DESIGNATION
- ⊙ SB12 SOIL BORING LOCATION AND DESIGNATION



NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

	PROJECT NO. 100213002	FIGURE
	DATE 3/10	2
SITE PLAN 14700 EAST NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA		



FORMER UST NO.S 1-5
EXCAVATION

SECONDARY CONTAINMENT CONCRETE BERM
FORMER AST

LUMBER
STORAGE
BUILDING

• SG-6

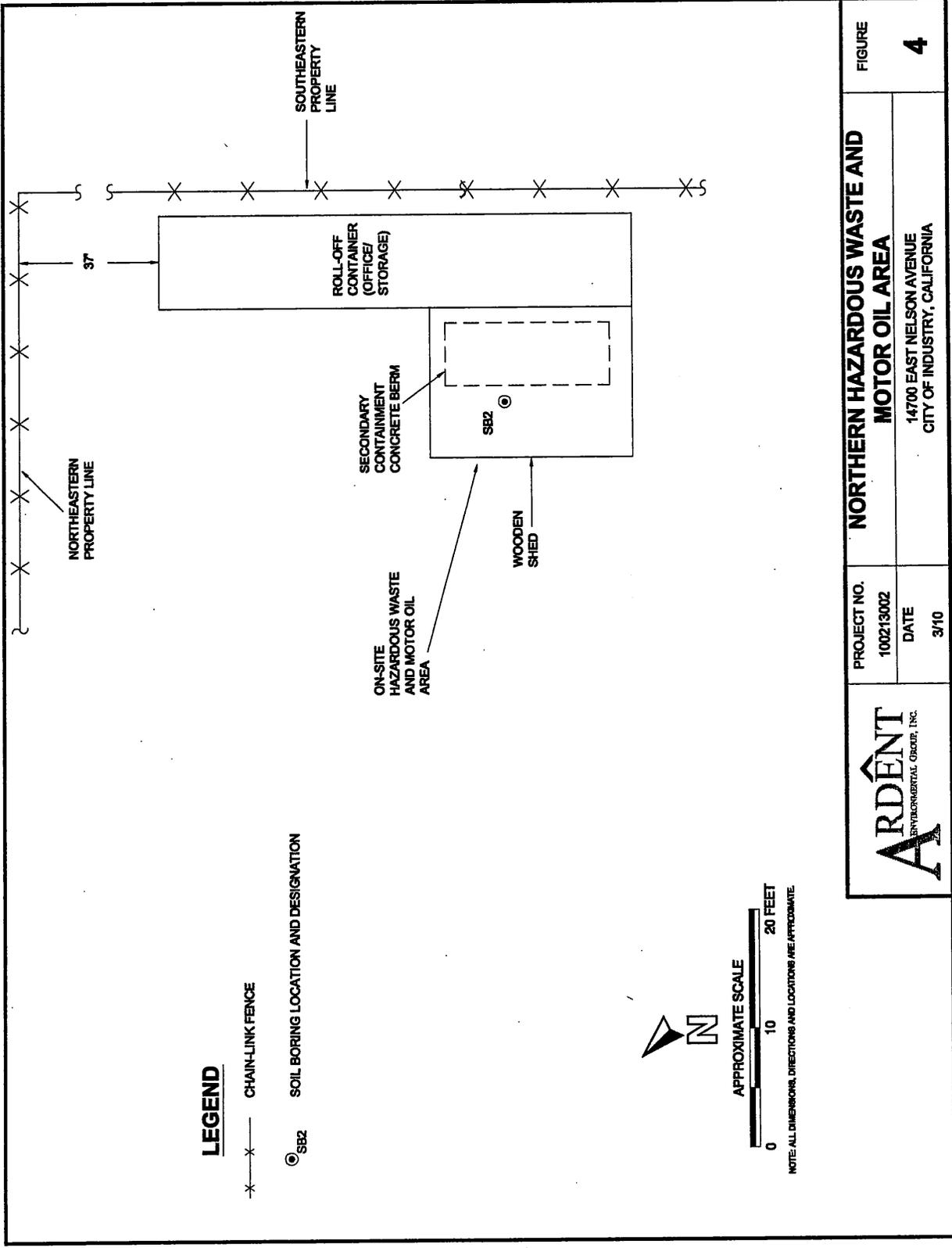
LEGEND

- UST UNDERGROUND STORAGE TANK
- SG-6 SOIL GAS LOCATION AND DESIGNATION
- AST ABOVEGROUND STORAGE TANK



NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

	PROJECT NO. 100213002	FORMER UST NOS. 1-5 EXCAVATION	FIGURE 3
	DATE 3/10	14700 EAST NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	



LEGEND

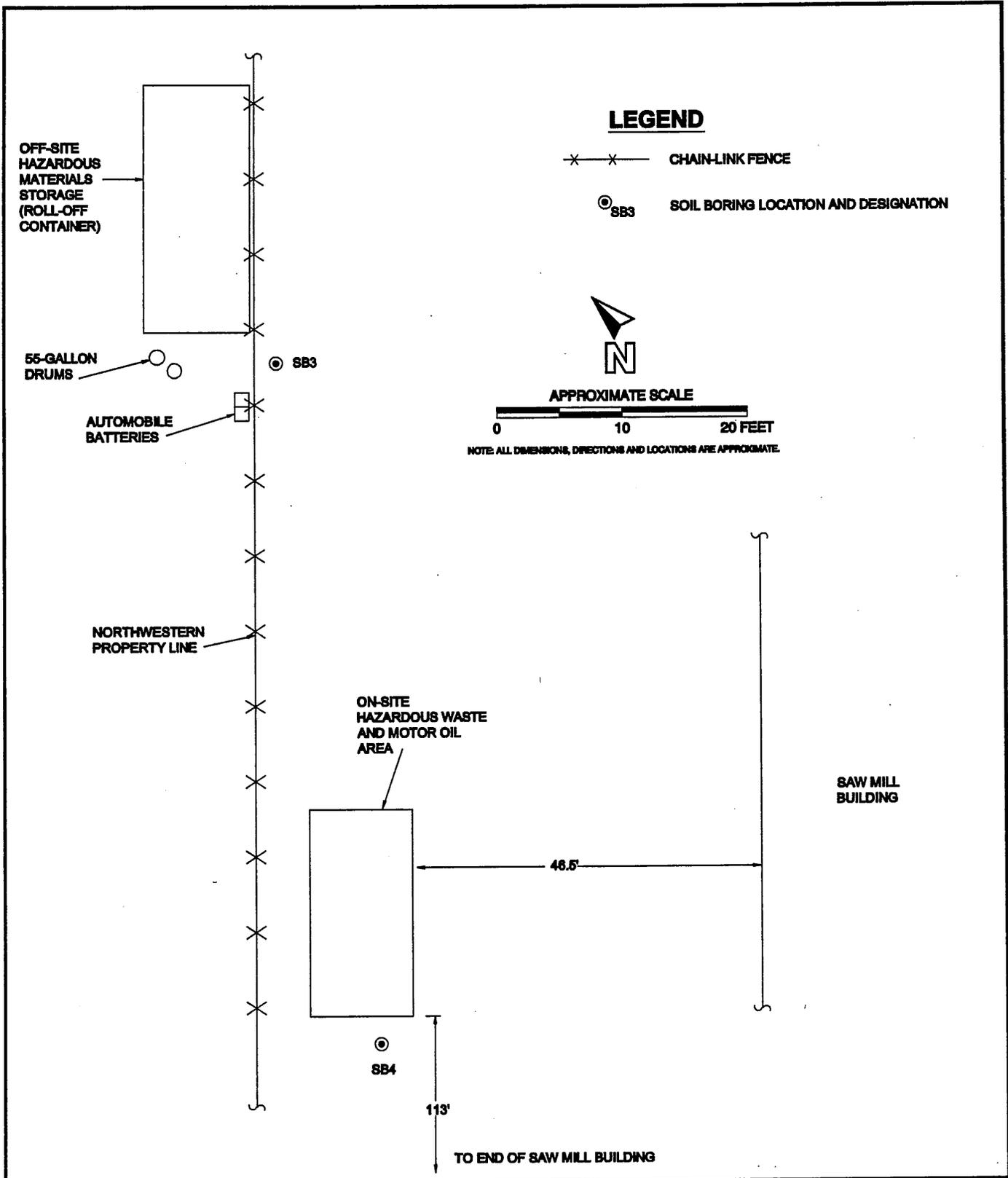
—X—X— CHAIN-LINK FENCE

⊙ SBZ SOIL BORING LOCATION AND DESIGNATION



NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

	PROJECT NO. 100213002	NORTHERN HAZARDOUS WASTE AND MOTOR OIL AREA 14700 EAST NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	FIGURE 4
	DATE 3/10		



	PROJECT NO. 100213001	SOUTHERN HAZARDOUS WASTE AND MOTOR OIL AREA 14700 EAST NELSON AVENUE CITY OF INDUSTRY, CALIFORNIA	FIGURE
	DATE 3/10		5

14700 Nelson Avenue
City of Industry, California

April 7, 2010
Project No. 100213002

APPENDIX A
LABORATORY REPORTS



23 March 2010

Mr. Paul Roberts
Arden Environmental Group
1141 Pamon Road, Suite E
Corona, CA 92882



H&P Project: ARD031910-SB1
Client Project: 100213002 / 14700 E. Nelson Ave.

Dear Client:

Enclosed is the analytical report for the above referenced project. The samples were received by H&P Mobile Geochemistry, Inc. on 19-Mar-10 and analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions
- Chain of Custody

Unless otherwise noted, all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,


Janis Villarreal
Laboratory Director

H&P Mobile Geochemistry, Inc. operates under CA Environmental Lab Accreditation Program Numbers 2579, 2740, 2741, 2742, 2743, 2745 and 2754. National Environmental Laboratory Accreditation Conference (NELAC) Standards Lab #11845

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1855 Coronado Avenue, Signal Hill, California 90755
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Ardent Environmental Group 1141 Pامona Road, Suite E Corona, CA 92882	Project: ARD031910-SB1 Project Number: 100213002 / 14700 E. Nelson Ave. Project Manager: Mr. Paul Roberts	Reported: 23-Mar-10 08:55
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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SG-1-5', 1PV, P111cc	E003080-01	Vapor	19-Mar-10	19-Mar-10
SG-1-5', 3PV, P332cc	E003080-02	Vapor	19-Mar-10	19-Mar-10
SG-1-5', 7PV, P776cc	E003080-03	Vapor	19-Mar-10	19-Mar-10
SG-2-5', P332cc	E003080-04	Vapor	19-Mar-10	19-Mar-10
SG-2-5' Dup, P382cc	E003080-05	Vapor	19-Mar-10	19-Mar-10
SG-3-5', P332cc	E003080-06	Vapor	19-Mar-10	19-Mar-10
SG-4-5', P332cc	E003080-07	Vapor	19-Mar-10	19-Mar-10
SG-5-5', P332cc	E003080-08	Vapor	19-Mar-10	19-Mar-10
SG-6-5', P332cc	E003080-09	Vapor	19-Mar-10	19-Mar-10
SG-7-5', P332cc	E003080-10	Vapor	19-Mar-10	19-Mar-10
SG-8-5', P332cc	E003080-11	Vapor	19-Mar-10	19-Mar-10
SG-9-5', P332cc	E003080-12	Vapor	19-Mar-10	19-Mar-10
SG-10-5', P332cc	E003080-13	Vapor	19-Mar-10	19-Mar-10
SG-11-5', P332cc	E003080-14	Vapor	19-Mar-10	19-Mar-10
SG-12-5', P332cc	E003080-15	Vapor	19-Mar-10	19-Mar-10
SG-13-5', P332cc	E003080-16	Vapor	19-Mar-10	19-Mar-10



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Ardent Environmental Group
 1141 Pamona Road, Suite E
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Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-1-5', 1PV, P111cc (E003080-01) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	0.11	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		98.1 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		110 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.4 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		89.2 %		75-125	"	"	"	"	



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Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-1-5', 3PV, P332cc (E003080-02) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		102 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		113 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		92.3 %		75-125	"	"	"	"	



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Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-1-5', 7PV, P776cc (E003080-03) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		99.5 %		75-125	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		111 %		75-125	"	"	"	"	
Surrogate: Toluene-d8		97.5 %		75-125	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.6 %		75-125	"	"	"	"	



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 Corona, CA 92882

Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-2-5', P332cc (E003080-04) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	0.24	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		97.9 %	75-125	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	75-125	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.2 %	75-125	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		92.8 %	75-125	"	"	"	"	"	



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Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-2-5' Dup, P382cc (E003080-05) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	0.20	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		93.1 %		75-125	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		108 %		75-125	"	"	"	"	
Surrogate: Toluene-d8		100 %		75-125	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.6 %		75-125	"	"	"	"	



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Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-3-5', P332cc (E003080-06) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		98.6 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.0 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		95.0 %		75-125	"	"	"	"	



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Ardent Environmental Group
 1141 Pamona Road, Suite E
 Corona, CA 92882

Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-4-5', P332cc (E003080-07) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		97.3 %		75-125	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		108 %		75-125	"	"	"	"	
Surrogate: Toluene-d8		101 %		75-125	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.0 %		75-125	"	"	"	"	



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Ardent Environmental Group 1141 Pamona Road, Suite E Corona, CA 92882	Project: ARD031910-SB1 Project Number: 100213002 / 14700 E. Nelson Ave. Project Manager: Mr. Paul Roberts	Reported: 23-Mar-10 08:55
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Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-5-5', P332cc (E003080-08) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		98.2 %	75-125	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	75-125	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	75-125	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		87.8 %	75-125	"	"	"	"	"	



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Ardent Environmental Group
 1141 Pamona Road, Suite E
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Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-6-5', P332cc (E003080-09) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	0.12	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		98.3 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.5 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		89.5 %		75-125	"	"	"	"	



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Ardent Environmental Group 1141 Pamona Road, Suite E Corona, CA 92882	Project: ARD031910-SB1 Project Number: 100213002 / 14700 E. Nelson Ave. Project Manager: Mr. Paul Roberts	Reported: 23-Mar-10 08:55
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Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-7-5', P332cc (E003080-10) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		101 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		109 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.6 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		88.7 %		75-125	"	"	"	"	



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Ardent Environmental Group
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Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-8-5', P332cc (E003080-11) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	0.18	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		94.4 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		86.8 %		75-125	"	"	"	"	



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Ardent Environmental Group 1141 Pامona Road, Suite E Corona, CA 92882	Project: ARD031910-SB1 Project Number: 100213002 / 14700 E. Nelson Ave. Project Manager: Mr. Paul Roberts	Reported: 23-Mar-10 08:55
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Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-9-5', P332cc (E003080-12) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	0.18	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		95.4 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		91.0 %		75-125	"	"	"	"	



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Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-10-5', P332cc (E003080-13) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
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Surrogate: Dibromofluoromethane		88.9 %		75-125	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		106 %		75-125	"	"	"	"	
Surrogate: Toluene-d8		109 %		75-125	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.0 %		75-125	"	"	"	"	



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Project: ARD031910-SB1
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 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-11-5', P332cc (E003080-14) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	0.20	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		89.7 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		110 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		92.1 %		75-125	"	"	"	"	



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 760-804-9159 Fax

Ardent Environmental Group
 1141 Pamona Road, Suite E
 Corona, CA 92882

Project: ARD031910-SB1
 Project Number: 100213002 / 14700 E. Nelson Ave.
 Project Manager: Mr. Paul Roberts

Reported:
 23-Mar-10 08:55

Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-12-5', P332cc (E003080-15) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
<i>Surrogate: Dibromofluoromethane</i>		95.0 %		75-125	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		111 %		75-125	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		106 %		75-125	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		89.9 %		75-125	"	"	"	"	



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Ardent Environmental Group 1141 Pamaona Road, Suite E Corona, CA 92882	Project: ARD031910-SB1 Project Number: 100213002 / 14700 E. Nelson Ave. Project Manager: Mr. Paul Roberts	Reported: 23-Mar-10 08:55
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Volatile Organic Compounds by EPA Method 8260B Modified

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SG-13-5', P332cc (E003080-16) Vapor Sampled: 19-Mar-10 Received: 19-Mar-10									
1,1-Difluoroethane (LCC)	ND	10	ug/l	0.05	EC01902	19-Mar-10	19-Mar-10	EPA 8260B	
Dichlorodifluoromethane	ND	0.50	"	"	"	"	"	"	
Vinyl chloride	ND	0.05	"	"	"	"	"	"	
Chloroethane	ND	0.50	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Methylene chloride	ND	0.50	"	"	"	"	"	"	
Freon 113	ND	0.50	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.50	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.50	"	"	"	"	"	"	
Chloroform	ND	0.10	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.10	"	"	"	"	"	"	
Benzene	ND	0.10	"	"	"	"	"	"	
Trichloroethene	ND	0.10	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.50	"	"	"	"	"	"	
Tetrachloroethene	ND	0.10	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
m,p-Xylene	ND	0.50	"	"	"	"	"	"	
o-Xylene	ND	0.50	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.50	"	"	"	"	"	"	
Surrogate: Dibromofluoromethane		94.4 %		75-125	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		106 %		75-125	"	"	"	"	
Surrogate: Toluene-d8		108 %		75-125	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.2 %		75-125	"	"	"	"	



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Ardent Environmental Group 1141 Pamona Road, Suite E Corona, CA 92882	Project: ARD031910-SB1 Project Number: 100213002 / 14700 E. Nelson Ave. Project Manager: Mr. Paul Roberts	Reported: 23-Mar-10 08:55
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Volatile Organic Compounds by EPA Method 8260B Modified - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EC01902 - EPA 5030

Blank (EC01902-BLK1)

Prepared & Analyzed: 19-Mar-10

1,1-Difluoroethane (LCC)	ND	10	ug/l							
Dichlorodifluoromethane	ND	0.50	"							
Vinyl chloride	ND	0.05	"							
Chloroethane	ND	0.50	"							
Trichlorofluoromethane	ND	0.50	"							
1,1-Dichloroethene	ND	0.50	"							
Methylene chloride	ND	0.50	"							
Freon 113	ND	0.50	"							
trans-1,2-Dichloroethene	ND	0.50	"							
1,1-Dichloroethane	ND	0.50	"							
cis-1,2-Dichloroethene	ND	0.50	"							
Chloroform	ND	0.10	"							
1,1,1-Trichloroethane	ND	0.50	"							
Carbon tetrachloride	ND	0.10	"							
1,2-Dichloroethane	ND	0.10	"							
Benzene	ND	0.10	"							
Trichloroethene	ND	0.10	"							
Toluene	ND	1.0	"							
1,1,2-Trichloroethane	ND	0.50	"							
Tetrachloroethene	ND	0.10	"							
Ethylbenzene	ND	0.50	"							
1,1,1,2-Tetrachloroethane	ND	0.50	"							
m,p-Xylene	ND	0.50	"							
o-Xylene	ND	0.50	"							
1,1,2,2-Tetrachloroethane	ND	0.50	"							

Surrogate: Dibromofluoromethane	2.46	"	2.50	98.3	75-125
Surrogate: 1,2-Dichloroethane-d4	2.75	"	2.50	110	75-125
Surrogate: Toluene-d8	2.45	"	2.50	98.1	75-125
Surrogate: 4-Bromofluorobenzene	2.33	"	2.50	93.3	75-125



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Ardent Environmental Group
1141 Pamona Road, Suite E
Corona, CA 92882

Project: ARD031910-SB1
Project Number: 100213002 / 14700 E. Nelson Ave.
Project Manager: Mr. Paul Roberts

Reported:
23-Mar-10 08:55

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference



Mobile
Geochemistry
Inc.

Chain of Custody Record

2470 Impacia Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Date: 3-19-10

H&P Project # ARD031910-SB1

Outside Lab

Client: Arcent Environmental Group, Inc. Collector: C. Smith Page 1 of 2
 Address: 441 Ramona Road Suite F Client Project #: 102213002 Project Contact: Paul Roberts
 Location: 14700 E. Nelson Ave. Phone: 951-736-5337 Turn around time: Field
 Email: proberts@arcentenvi.com Fax:

Geotrac or EFD Yes No
 Global ID Yes No
 Excel EDD Yes No
 Sample Receipt
 Initial Yes No
 Seal Initial Yes No M/A
 Date Yes No M/A
 Temperature Yes No N/A

See all instructions

Lab Work Order # E003080/EC0902

Sample Name	Field Point Name	Purge Vol	Time	Date	Sample Type	Container Type	Total # of containers
1 SG-1-5'-1PV		P11cc	0900	3-19-10	Vapor	61455	1
2 SG-1-5'-3PV		P382cc	0902				1
3 SG-1-5'-7PV		P976cc	0904				1
4 SG-2-5'		P332cc	1015				1
5 SG-2-5' Dup		P382cc	1016				1
6 SG-3-5'		P332cc	1040				1
7 SG-4-5'		P382cc	1045				1
8 SG-5-5'		P332cc	1100				1
9 SG-6-5'		P332cc	1120				1
10 SG-7-5'		P332cc	1135				1

Requested by (Signature): [Signature]
 Requested by (Signature): [Signature]

Received by (Signature): [Signature]
 Received by (Signature): [Signature]

Company: Arcent Environmental
 Company: Arcent Environmental

Date: 3-19-10
 Date: 3-19-10

Time: 1430
 Time: 1430

Sample disposal instruction: Disposal Return to client Pickup



Chain of Custody Record

Date: 3-19-10
 H&P Project #: ARDD03910-SB1
 Outside Lab

2470 Impala Dr., Carlsbad, CA 92010 • ph 760.804.9678 • fax 760.804.9159
 1855 Coronado Ave., Signal Hill, CA 90755 • ph 800.834.9888

Client: Advent Environmental Group, Inc. Collector: C. Smith Page: 2 of 2
 Address: 141 Pioneer Road Suite E Client Project #: 100213002 Project Contact: Paul Roberts
 City: Corona, CA 92882 Location: 4700 E. Nelson Ave
 Phone: 951-730-5334 Fax: Field

Geoticker EDF: Yes No
 Global ID: _____
 Excel EDD: Yes No
 Special Instructions: _____

Sample Receipt
 Initialed: Yes No
 Seal Initialed: Yes No
 Cooled: Yes No N/A
 Temperature: N/A

Sample Name	Well Point Name	Plurge Vol	Time	Date	Sample Type	Container Type	Total # of containers
11 SG-8-5'		P330a	1155	3-19-10	Vapor	Glass Syringe	1
12 SG-9-5'		P330a	1205				1
13 SG-10-5'			1235				1
14 SG-11-5'			1240				1
15 SG-12-5'			1330				1
16 SG-13-5'			1335				1

Lab. Work Order #: E003080/EC01902

Soil/GW Analysis:
 SOIL: 8260B Full List 8260B TPH gas BTEX/OXY TPH gas 8015M TPH g d ext
 4181 TRPH TO-15
 VOCs: Full List 8260B TO-15
 VOCs: Short List/DTSC 8260B TO-15
 VOCs: SAM, 8260B SAM A SAM B
 Naphthalene 8260B TO-15
 Oxygenides 8260B TO-15
 TPHV gas 8260B TO-15
 Ketones 8260B TO-15
 Other 8260B TO-15
 Leak Check Compound 1 DFA OTHER
 Methane CO2 N2

Company: Arden Environmental (company)
 Analyst (Signature): [Signature] (Signature)
 Analyst (Print Name): Arden Environmental (company)
 Received by (Signature): [Signature] (Signature)
 Received by (Print Name): Arden Environmental (company)
 Date: 3-19-10 (Date)
 Time: 14:30 (Time)

Source of disposal instructions: _____
 Return to client:
 Degraded:
 Return to client:
 Package:



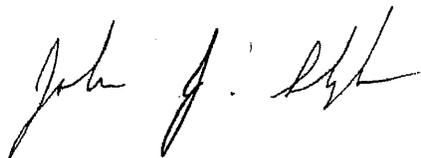
25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

26 March 2010

Paul Roberts
Ardent Environmental Group, Inc.
1141 Pomona Road, Suite E
Corona, CA 92882
RE: Richard Watson, 14700 Nelson

Enclosed are the results of analyses for samples received by the laboratory on 03/19/10 11:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



John Shepler
Laboratory Director



25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

Ardent Environmental Group, Inc.
1141 Pomona Road, Suite E
Corona CA, 92882

Project: Richard Watson, 14700 Nelson
Project Number: 100213002
Project Manager: Paul Roberts

Reported:
03/26/10 15:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB1-10	T000234-02	Soil	03/19/10 00:00	03/19/10 11:20
SB2-2.5	T000234-03	Soil	03/19/10 00:00	03/19/10 11:20
SB3-2.5	T000234-05	Soil	03/19/10 00:00	03/19/10 11:20
SB4-2.5	T000234-07	Soil	03/19/10 00:00	03/19/10 11:20
SB5-3	T000234-09	Soil	03/19/10 00:00	03/19/10 11:20
SB6-3	T000234-10	Soil	03/19/10 00:00	03/19/10 11:20
SB7-3	T000234-11	Soil	03/19/10 00:00	03/19/10 11:20

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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 949.297.5027 Fax

Ardent Environmental Group, Inc. 1141 Pomona Road, Suite E Corona CA, 92882	Project: Richard Watson, 14700 Nelson Project Number: 100213002 Project Manager: Paul Roberts	Reported: 03/26/10 15:12
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SB1-10
T000234-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015C

C23-C32	ND	10	mg/kg	1	0031906	03/19/10	03/25/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C10-C12	ND	10	"	"	"	"	"	"	
Surrogate: <i>p</i> -Terphenyl		100 %		65-135	"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	0032203	03/22/10	03/25/10	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	6.2	5.0	"	"	"	"	"	"	
Barium	180	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	03/25/10	"	
Cadmium	ND	2.0	"	"	"	"	03/25/10	"	
Chromium	26	2.0	"	"	"	"	"	"	
Cobalt	16	2.0	"	"	"	"	"	"	
Copper	32	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	1.0	"	"	"	"	"	"	
Nickel	22	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	56	5.0	"	"	"	"	"	"	
Zinc	66	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	0031809	03/22/10	03/23/10	EPA 7471A Soil	
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SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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Ardent Environmental Group, Inc.
 1141 Pomona Road, Suite E
 Corona CA, 92882

Project: Richard Watson, 14700 Nelson
 Project Number: 100213002
 Project Manager: Paul Roberts

Reported:
 03/26/10 15:12

SB1-10
T000234-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	5.0	ug/kg	1	0031816	03/23/10	03/26/10	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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Ardent Environmental Group, Inc.
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 Corona CA, 92882

Project: Richard Watson, 14700 Nelson
 Project Number: 100213002
 Project Manager: Paul Roberts

Reported:
 03/26/10 15:12

SB1-10
T000234-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	0031816	03/23/10	03/26/10	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Tert-amyl methyl ether	ND	20	"	"	"	"	"	"	
Tert-butyl alcohol	ND	50	"	"	"	"	"	"	
Di-isopropyl ether	ND	20	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	20	"	"	"	"	"	"	

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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Ardent Enviromental Group, Inc. 1141 Pomona Road, Suite E Corona CA, 92882	Project: Richard Watson, 14700 Nelson Project Number: 100213002 Project Manager: Paul Roberts	Reported: 03/26/10 15:12
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SB1-10
T000234-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Surrogate: 4-Bromofluorobenzene	102 %	75.1-121			0031816	03/23/10	03/26/10	EPA 8260B	
Surrogate: Dibromofluoromethane	101 %	90-135			"	"	"	"	
Surrogate: Toluene-d8	97.1 %	85-115			"	"	"	"	

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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SB2-2.5
T000234-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015C

C23-C32	ND	10	mg/kg	1	0031906	03/19/10	03/25/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C10-C12	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		81.8 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	0032203	03/22/10	03/25/10	EPA 6010B	
Silver	ND	2.0	"	"	"	"	"	"	
Arsenic	ND	5.0	"	"	"	"	"	"	
Barium	130	1.0	"	"	"	"	"	"	
Beryllium	ND	1.0	"	"	"	"	03/25/10	"	
Cadmium	ND	2.0	"	"	"	"	03/25/10	"	
Chromium	21	2.0	"	"	"	"	"	"	
Cobalt	13	2.0	"	"	"	"	"	"	
Copper	24	1.0	"	"	"	"	"	"	
Lead	ND	3.0	"	"	"	"	"	"	
Molybdenum	ND	1.0	"	"	"	"	"	"	
Nickel	18	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	46	5.0	"	"	"	"	"	"	
Zinc	61	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	0031809	03/22/10	03/23/10	EPA 7471A Soil	
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SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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Ardent Enviromental Group, Inc. 1141 Pomona Road, Suite E Corona CA, 92882	Project: Richard Watson, 14700 Nelson Project Number: 100213002 Project Manager: Paul Roberts	Reported: 03/26/10 15:12
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SB2-2.5
T000234-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	5.0	ug/kg	1	0031816	03/23/10	03/26/10	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	

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SB2-2.5
T000234-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	0031816	03/23/10	03/26/10	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		75.1-121	"	"	"	"	
Surrogate: Dibromofluoromethane		104 %		90-135	"	"	"	"	
Surrogate: Toluene-d8		102 %		85-115	"	"	"	"	

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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SB3-2.5
T000234-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015C

C23-C32	ND	10	mg/kg	1	0031906	03/19/10	03/25/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C10-C12	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		80.6 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	0032203	03/22/10	03/25/10	EPA 6010B	
Silver	ND	2.0	"	"	"	"	03/25/10	"	
Arsenic	ND	5.0	"	"	"	"	03/25/10	"	
Barium	150	1.0	"	"	"	"	03/25/10	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	03/25/10	"	
Chromium	26	2.0	"	"	"	"	"	"	
Cobalt	14	2.0	"	"	"	"	"	"	
Copper	30	1.0	"	"	"	"	03/25/10	"	
Lead	ND	3.0	"	"	"	"	03/25/10	"	
Molybdenum	ND	1.0	"	"	"	"	"	"	
Nickel	20	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	57	5.0	"	"	"	"	"	"	
Zinc	56	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	0031809	03/22/10	03/23/10	EPA 7471A Soil	
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SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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Ardent Environmental Group, Inc.
 1141 Pomona Road, Suite E
 Corona CA, 92882

Project: Richard Watson, 14700 Nelson
 Project Number: 100213002
 Project Manager: Paul Roberts

Reported:
 03/26/10 15:12

SB3-2.5
T000234-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	5.0	ug/kg	1	0031816	03/23/10	03/25/10	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Ardent Environmental Group, Inc. 1141 Pomona Road, Suite E Corona CA, 92882	Project: Richard Watson, 14700 Nelson Project Number: 100213002 Project Manager: Paul Roberts	Reported: 03/26/10 15:12
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SB3-2.5
T000234-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	0031816	03/23/10	03/25/10	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %		75.1-121	"	"	"	"	
Surrogate: Dibromofluoromethane		106 %		90-135	"	"	"	"	
Surrogate: Toluene-d8		99.0 %		85-115	"	"	"	"	

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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Ardent Environmental Group, Inc.
 1141 Pomona Road, Suite E
 Corona CA, 92882

Project: Richard Watson, 14700 Nelson
 Project Number: 100213002
 Project Manager: Paul Roberts

Reported:
 03/26/10 15:12

SB4-2.5
T000234-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015C

C23-C32	ND	10	mg/kg	1	0031906	03/19/10	03/25/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C10-C12	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		82.5 %	65-135		"	"	"	"	

Metals by EPA 6010B

Antimony	ND	3.0	mg/kg	1	0032203	03/22/10	03/25/10	EPA 6010B	
Silver	ND	2.0	"	"	"	"	03/25/10	"	
Arsenic	ND	5.0	"	"	"	"	03/25/10	"	
Barium	150	1.0	"	"	"	"	03/25/10	"	
Beryllium	ND	1.0	"	"	"	"	"	"	
Cadmium	ND	2.0	"	"	"	"	03/25/10	"	
Chromium	25	2.0	"	"	"	"	"	"	
Cobalt	14	2.0	"	"	"	"	"	"	
Copper	30	1.0	"	"	"	"	03/25/10	"	
Lead	ND	3.0	"	"	"	"	03/25/10	"	
Molybdenum	ND	1.0	"	"	"	"	"	"	
Nickel	20	2.0	"	"	"	"	"	"	
Selenium	ND	5.0	"	"	"	"	"	"	
Thallium	ND	2.0	"	"	"	"	"	"	
Vanadium	57	5.0	"	"	"	"	"	"	
Zinc	59	1.0	"	"	"	"	"	"	

Cold Vapor Extraction EPA 7470/7471

Mercury	ND	0.10	mg/kg	1	0031809	03/22/10	03/23/10	EPA 7471A Soil	
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SB4-2.5
T000234-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromobenzene	ND	5.0	ug/kg	1	0031816	03/23/10	03/25/10	EPA 8260B	
Bromochloromethane	ND	5.0	"	"	"	"	"	"	
Bromodichloromethane	ND	5.0	"	"	"	"	"	"	
Bromoform	ND	5.0	"	"	"	"	"	"	
Bromomethane	ND	5.0	"	"	"	"	"	"	
n-Butylbenzene	ND	5.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	5.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	5.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	5.0	"	"	"	"	"	"	
Chlorobenzene	ND	5.0	"	"	"	"	"	"	
Chloroethane	ND	5.0	"	"	"	"	"	"	
Chloroform	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	5.0	"	"	"	"	"	"	
2-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	5.0	"	"	"	"	"	"	
Dibromochloromethane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	5.0	"	"	"	"	"	"	
Dibromomethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	5.0	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	5.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	5.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	5.0	"	"	"	"	"	"	
2,2-Dichloropropane	ND	5.0	"	"	"	"	"	"	
1,1-Dichloropropene	ND	5.0	"	"	"	"	"	"	

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SB4-2.5
T000234-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Volatile Organic Compounds by EPA Method 8260B

cis-1,3-Dichloropropene	ND	5.0	ug/kg	1	0031816	03/23/10	03/25/10	EPA 8260B	
trans-1,3-Dichloropropene	ND	5.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	5.0	"	"	"	"	"	"	
Isopropylbenzene	ND	5.0	"	"	"	"	"	"	
p-Isopropyltoluene	ND	5.0	"	"	"	"	"	"	
Methylene chloride	ND	5.0	"	"	"	"	"	"	
Naphthalene	ND	5.0	"	"	"	"	"	"	
n-Propylbenzene	ND	5.0	"	"	"	"	"	"	
Styrene	ND	5.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	5.0	"	"	"	"	"	"	
Tetrachloroethene	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	5.0	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.0	"	"	"	"	"	"	
Trichloroethene	ND	5.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	5.0	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
Vinyl chloride	ND	5.0	"	"	"	"	"	"	
Benzene	ND	5.0	"	"	"	"	"	"	
Toluene	ND	5.0	"	"	"	"	"	"	
Ethylbenzene	ND	5.0	"	"	"	"	"	"	
m,p-Xylene	ND	5.0	"	"	"	"	"	"	
o-Xylene	ND	5.0	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		75.1-121	"	"	"	"	
Surrogate: Dibromofluoromethane		111 %		90-135	"	"	"	"	
Surrogate: Toluene-d8		91.9 %		85-115	"	"	"	"	

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SB5-3
T000234-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015C

C10-C12	ND	10	mg/kg	1	0031906	03/19/10	03/25/10	EPA 8015C	
C23-C32	ND	10	"	"	"	"	"	"	
C13-22	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		82.6 %	65-135		"	"	"	"	

PAH compounds by Semivolatile GCMS

Acenaphthene	ND	300	ug/kg	1	0031905	03/19/10	03/25/10	EPA 8270C	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
<i>Surrogate: Terphenyl-d4</i>		49.5 %	29.1-130		"	"	"	"	

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SB6-3
T000234-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015C

C10-C12	ND	10	mg/kg	1	0031906	03/19/10	03/25/10	EPA 8015C	
C23-C32	ND	10	"	"	"	"	"	"	
C13-22	ND	10	"	"	"	"	"	"	
Surrogate: p-Terphenyl		81.6 %	65-135		"	"	"	"	

PAH compounds by Semivolatile GCMS

Acenaphthene	ND	300	ug/kg	1	0031905	03/19/10	03/25/10	EPA 8270C	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
Surrogate: Terphenyl-d14		58.4 %	29.1-130		"	"	"	"	

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SB7-3
T000234-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

Extractable Petroleum Hydrocarbons by 8015C

C23-C32	ND	10	mg/kg	1	0031906	03/19/10	03/25/10	EPA 8015C	
C13-22	ND	10	"	"	"	"	"	"	
C10-C12	ND	10	"	"	"	"	"	"	
<i>Surrogate: p-Terphenyl</i>		81.6 %	65-135		"	"	"	"	

PAH compounds by Semivolatile GCMS

Acenaphthene	ND	300	ug/kg	1	0031905	03/19/10	03/25/10	EPA 8270C	
Acenaphthylene	ND	300	"	"	"	"	"	"	
Anthracene	ND	300	"	"	"	"	"	"	
Benzo (a) anthracene	ND	300	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	300	"	"	"	"	"	"	
Benzo (g,h,i) perylene	ND	1000	"	"	"	"	"	"	
Benzo (a) pyrene	ND	300	"	"	"	"	"	"	
Chrysene	ND	300	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	300	"	"	"	"	"	"	
Fluoranthene	ND	300	"	"	"	"	"	"	
Fluorene	ND	300	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	300	"	"	"	"	"	"	
Naphthalene	ND	300	"	"	"	"	"	"	
Phenanthrene	ND	300	"	"	"	"	"	"	
Pyrene	ND	300	"	"	"	"	"	"	
<i>Surrogate: Terphenyl-d14</i>		43.0 %	29.1-130		"	"	"	"	

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Extractable Petroleum Hydrocarbons by 8015C - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0031906 - EPA 3550B GC										
Blank (0031906-BLK1) Prepared: 03/19/10 Analyzed: 03/25/10										
C13-22	ND	10	mg/kg							
C10-C12	ND	10	"							
C23-C32	ND	10	"							
Surrogate: p-Terphenyl	102		"	100		102	65-135			
LCS (0031906-BS1) Prepared: 03/19/10 Analyzed: 03/25/10										
C13-C28 (DRO)	440	10	mg/kg	500		87.0	75-125			
Surrogate: p-Terphenyl	82.6		"	100		82.6	65-135			
Matrix Spike (0031906-MS1) Source: T000234-09 Prepared: 03/19/10 Analyzed: 03/25/10										
C13-C28 (DRO)	440	10	mg/kg	500	ND	88.7	75-125			
Surrogate: p-Terphenyl	82.4		"	100		82.4	65-135			
Matrix Spike Dup (0031906-MSD1) Source: T000234-09 Prepared: 03/19/10 Analyzed: 03/25/10										
C13-C28 (DRO)	520	10	mg/kg	500	ND	104	75-125	15.9	20	
Surrogate: p-Terphenyl	105		"	100		105	65-135			

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Metals by EPA 6010B - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0032203 - EPA 3051

Blank (0032203-BLK1)				Prepared: 03/22/10 Analyzed: 03/25/10						
Antimony	ND	3.0	mg/kg							
Silver	ND	2.0	"							
Arsenic	ND	5.0	"							
Barium	ND	1.0	"							
Beryllium	ND	1.0	"							
Cadmium	ND	2.0	"							
Chromium	ND	2.0	"							
Cobalt	ND	2.0	"							
Copper	ND	1.0	"							
Lead	ND	3.0	"							
Molybdenum	ND	1.0	"							
Nickel	ND	2.0	"							
Selenium	ND	5.0	"							
Thallium	ND	2.0	"							
Vanadium	ND	5.0	"							
Zinc	ND	1.0	"							

LCS (0032203-BS1)				Prepared: 03/22/10 Analyzed: 03/25/10						
Arsenic	97.1	5.0	mg/kg	100	97.1	75-125				
Barium	97.6	1.0	"	100	97.6	75-125				
Cadmium	95.8	2.0	"	100	95.8	75-125				
Chromium	98.1	2.0	"	100	98.1	75-125				
Lead	98.3	3.0	"	100	98.3	75-125				

Matrix Spike (0032203-MS1)				Source: T000243-03		Prepared: 03/22/10 Analyzed: 03/25/10				
Arsenic	94.0	5.0	mg/kg	100	1.46	92.5	75-125			
Barium	222	1.0	"	100	123	98.5	75-125			
Cadmium	93.9	2.0	"	100	2.12	91.7	75-125			
Chromium	124	2.0	"	100	26.0	98.2	75-125			
Lead	93.0	3.0	"	100	1.21	91.8	75-125			

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Metals by EPA 6010B - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0032203 - EPA 3051

Matrix Spike Dup (0032203-MSD1)	Source: T000243-03			Prepared: 03/22/10		Analyzed: 03/25/10				
Arsenic	94.0	5.0	mg/kg	100	1.46	92.5	75-125	0.00805	20	
Barium	254	1.0	"	100	123	131	75-125	13.6	20	QM-07
Cadmium	95.5	2.0	"	100	2.12	93.3	75-125	1.70	20	
Chromium	132	2.0	"	100	26.0	106	75-125	6.00	20	
Lead	93.4	3.0	"	100	1.21	92.2	75-125	0.431	20	

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Cold Vapor Extraction EPA 7470/7471 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0031809 - EPA 7471A Soil										
Blank (0031809-BLK1) Prepared: 03/22/10 Analyzed: 03/23/10										
Mercury	ND	0.10	mg/kg							
LCS (0031809-BS1) Prepared: 03/22/10 Analyzed: 03/23/10										
Mercury	0.409	0.10	mg/kg	0.417		98.2	80-120			
Matrix Spike (0031809-MS1) Source: T000229-03 Prepared: 03/22/10 Analyzed: 03/23/10										
Mercury	0.418	0.10	mg/kg	0.417	ND	100	75-125			
Matrix Spike Dup (0031809-MSD1) Source: T000229-03 Prepared: 03/22/10 Analyzed: 03/23/10										
Mercury	0.426	0.10	mg/kg	0.417	ND	102	75-125	1.96	20	

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 Corona CA, 92882

Project: Richard Watson, 14700 Nelson
 Project Number: 100213002
 Project Manager: Paul Roberts

Reported:
 03/26/10 15:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0031816 - EPA 5030 GCMS

Prepared: 03/18/10 Analyzed: 03/25/10

Blank (0031816-BLK1)

Bromobenzene	ND	5.0	ug/kg							
Bromochloromethane	ND	5.0	"							
Bromodichloromethane	ND	5.0	"							
Bromoform	ND	5.0	"							
Bromomethane	ND	5.0	"							
n-Butylbenzene	ND	5.0	"							
sec-Butylbenzene	ND	5.0	"							
tert-Butylbenzene	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Chloroethane	ND	5.0	"							
Chloroform	ND	5.0	"							
Chloromethane	ND	5.0	"							
2-Chlorotoluene	ND	5.0	"							
4-Chlorotoluene	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							
1,2-Dibromoethane (EDB)	ND	5.0	"							
Dibromomethane	ND	5.0	"							
1,2-Dichlorobenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	5.0	"							
1,4-Dichlorobenzene	ND	5.0	"							
Dichlorodifluoromethane	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
1,1-Dichloroethene	ND	5.0	"							
cis-1,2-Dichloroethene	ND	5.0	"							
trans-1,2-Dichloroethene	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
1,3-Dichloropropane	ND	5.0	"							
2,2-Dichloropropane	ND	5.0	"							
1,1-Dichloropropene	ND	5.0	"							
cis-1,3-Dichloropropene	ND	5.0	"							
trans-1,3-Dichloropropene	ND	5.0	"							
Hexachlorobutadiene	ND	5.0	"							
Isopropylbenzene	ND	5.0	"							

SunStar Laboratories, Inc.

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John Shepler, Laboratory Director



25712 Commercentre Drive
 Lake Forest, California 92630
 949.297.5020 Phone
 949.297.5027 Fax

Ardent Environmental Group, Inc. 1141 Pomona Road, Suite E Corona CA, 92882	Project: Richard Watson, 14700 Nelson Project Number: 100213002 Project Manager: Paul Roberts	Reported: 03/26/10 15:12
---	---	-----------------------------

Volatile Organic Compounds by EPA Method 8260B - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 0031816 - EPA 5030 GCMS

Blank (0031816-BLK1)

Prepared: 03/18/10 Analyzed: 03/25/10

p-Isopropyltoluene	ND	5.0	ug/kg							
Methylene chloride	ND	5.0	"							
Naphthalene	ND	5.0	"							
n-Propylbenzene	ND	5.0	"							
Styrene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,1,2-Tetrachloroethane	ND	5.0	"							
Tetrachloroethene	ND	5.0	"							
1,2,3-Trichlorobenzene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1,1-Trichloroethane	ND	5.0	"							
Trichloroethene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
1,2,3-Trichloropropane	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
Vinyl chloride	ND	5.0	"							
Benzene	ND	5.0	"							
Toluene	ND	5.0	"							
Ethylbenzene	ND	5.0	"							
m,p-Xylene	ND	5.0	"							
o-Xylene	ND	5.0	"							

Surrogate: 4-Bromofluorobenzene	44.6		"	40.0		112	75.1-121			
Surrogate: Dibromofluoromethane	41.8		"	40.0		105	90-135			
Surrogate: Toluene-d8	41.8		"	40.0		105	85-115			

LCS (0031816-BS1)

Prepared: 03/18/10 Analyzed: 03/25/10

Chlorobenzene	106	5.0	ug/kg	100		106	75-125			
1,1-Dichloroethene	96.1	5.0	"	100		96.1	75-125			
Trichloroethene	89.4	5.0	"	100		89.4	75-125			
Benzene	93.5	5.0	"	100		93.5	75-125			
Toluene	91.5	5.0	"	100		91.5	75-125			
Surrogate: 4-Bromofluorobenzene	42.1		"	40.0		105	75.1-121			
Surrogate: Dibromofluoromethane	46.4		"	40.0		116	90-135			
Surrogate: Toluene-d8	41.0		"	40.0		102	85-115			

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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Ardent Environmental Group, Inc.
 1141 Pomona Road, Suite E
 Corona CA, 92882

Project: Richard Watson, 14700 Nelson
 Project Number: 100213002
 Project Manager: Paul Roberts

Reported:
 03/26/10 15:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 0031816 - EPA 5030 GCMS

LCS Dup (0031816-BSD1)

Prepared: 03/18/10 Analyzed: 03/25/10

Chlorobenzene	101	5.0	ug/kg	100	101	101	75-125	4.35	20	
1,1-Dichloroethene	94.4	5.0	"	100	94.4	94.4	75-125	1.78	20	
Trichloroethene	83.7	5.0	"	100	83.7	83.7	75-125	6.59	20	
Benzene	100	5.0	"	100	100	100	75-125	6.87	20	
Toluene	90.4	5.0	"	100	90.4	90.4	75-125	1.21	20	
Surrogate: 4-Bromofluorobenzene	42.9		"	40.0	107	107	75.1-121			
Surrogate: Dibromofluoromethane	45.4		"	40.0	114	114	90-135			
Surrogate: Toluene-d8	40.0		"	40.0	100	100	85-115			

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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 Lake Forest, California 92630
 949.297.5020 Phone
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Ardent Environmental Group, Inc. 1141 Pomona Road, Suite E Corona CA, 92882	Project: Richard Watson, 14700 Nelson Project Number: 100213002 Project Manager: Paul Roberts	Reported: 03/26/10 15:12
---	---	-----------------------------

PAH compounds by Semivolatile GCMS - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 0031905 - EPA 3550 ECD/GCMS

Blank (0031905-BLK1)										
					Prepared: 03/19/10 Analyzed: 03/25/10					
Acenaphthene	ND	300	ug/kg							
Acenaphthylene	ND	300	"							
Anthracene	ND	300	"							
Benzo (a) anthracene	ND	300	"							
Benzo (b) fluoranthene	ND	300	"							
Benzo (k) fluoranthene	ND	300	"							
Benzo (g,h,i) perylene	ND	1000	"							
Benzo (a) pyrene	ND	300	"							
Chrysene	ND	300	"							
Dibenz (a,h) anthracene	ND	300	"							
Fluoranthene	ND	300	"							
Fluorene	ND	300	"							
Indeno (1,2,3-cd) pyrene	ND	300	"							
Naphthalene	ND	300	"							
Phenanthrene	ND	300	"							
Pyrene	ND	300	"							
<i>Surrogate: Terphenyl-d4</i>	837		"	1670		50.2	29.1-130			

LCS (0031905-BS1)										
					Prepared: 03/19/10 Analyzed: 03/25/10					
Acenaphthene	816	300	ug/kg	1670		48.9	38.9-79.4			
Pyrene	811	300	"	1670		48.7	25-85.2			
<i>Surrogate: Terphenyl-d4</i>	708		"	1670		42.5	29.1-130			

LCS Dup (0031905-BSD1)										
					Prepared: 03/19/10 Analyzed: 03/25/10					
Acenaphthene	951	300	ug/kg	1670		57.0	38.9-79.4	15.3	31	
Pyrene	910	300	"	1670		54.6	25-85.2	11.5	31	
<i>Surrogate: Terphenyl-d4</i>	814		"	1670		48.9	29.1-130			

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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Ardent Enviromental Group, Inc.
1141 Pomona Road, Suite E
Corona CA, 92882

Project: Richard Watson, 14700 Nelson
Project Number: 100213002
Project Manager: Paul Roberts

Reported:
03/26/10 15:12

Notes and Definitions

- QM-07 The spike recovery and or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

SunStar Laboratories, Inc.

John Shepler, Laboratory Director

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14700 Nelson Avenue
City of Industry, California

April 7, 2010
Project No. 100213002

APPENDIX B

RISK ASSESSMENT DOCUMENTATION

Reset to Defaults

DATA ENTRY SHEET

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C _s (µg/cm ³)	OR	ENTER Soil gas conc., C _s (ppmv)	Chemical
71432	2.40E+02			Benzene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L _f (15 to 200 cm)	ENTER Soil gas sampling depth below grade, L _s (cm)	ENTER Average soil temperature, T _s (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	ENTER User-defined vadose zone soil vapor permeability, k _v (cm ²)
15	152.4	24		1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ _s (g/cm ³)	ENTER Vadose zone soil total porosity, n _v (unitless)	ENTER Vadose zone soil water-filled porosity, θ _v	ENTER Average vapor flow rate into bldg. (Leave blank to calculate)
	1.5	0.43	0.15	Q _{avg} (L/m ²)
ENTER Lookup Soil Parameters				5

MORE
↓

ENTER Averaging time for carcinogens, ATC (yr)	ENTER Averaging time for noncarcinogens, ATNC (yr)	ENTER Exposure duration, ED (yr)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{b,n}$ (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\text{kg}/\text{m}^3\text{-}^1$)	Reference conc., RC (mg/m^3)	Molecular weight, MW (g/mol)
8.80E-02	9.80E-06	5.54E-03	25	7.342	353.24	562.16	2.9E-05	3.0E-02	78.11

END

INTERMEDIATE CALCULATIONS SHEET

Source- building separation, L_T (cm)	Vadose zone soil porosity, θ_v (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_w (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor- wall soil seem perimeter, X_{soil} (cm)	Blgd. ventilation rate, $Q_{subline}$ (cm ³ /s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4.000	2.40E+02
							3.39E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- total area rate, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TIS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TIS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H_{TIS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_v (cm ² /s)	Diffusion path length, L_p (cm)
1.00E+06	5.00E-03	15	7.977	5.29E-03	2.17E-01	1.80E-04	6.86E-03	137.4

Convection path length, L_c (cm)	Source vapor conc., C_{source} (μg/m ³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{ave} (cm ³ /s)	Crack effective diffusion coefficient, D_{crack} (cm ² /s)	Area of crack, A_{crack} (cm ²)	Exponent of equivalent foundation Pebel number, $exp(P_e)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ (μg/m ³)
15	2.40E+02	1.25	8.33E+01	6.86E-03	5.00E+03	3.50E+10	9.22E-04	2.21E-01

Unit
risk
factor,
URF
(μg/m³)⁻¹

Reference
conc.,
R/C
(mg/m³)

2.9E-05 3.0E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor	Hazard quotient from vapor
Intrusion to indoor air, carcinogen (unless)	Intrusion to indoor air, noncarcinogen (unless)

2.6E-06	7.1E-03
---------	---------

MESSAGE SUMMARY BELOW:

END

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DATA ENTRY SHEET

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil conc., C _s (µg/m ³)	OR	ENTER Soil gas conc., C _g (ppmv)	Chemical Benzene
71432	1.58E+02			

ENTER Depth below grade to bottom of enclosed space floor, L _c (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L _s (cm)	ENTER Average soil temperature, T _s (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	ENTER User-defined vadose zone soil vapor permeability, k _v (cm ²)
15	152.4	24		1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, ρ _d (g/cm ³)	ENTER Vadose zone soil total porosity, n _v (unitless)	ENTER Vadose zone soil water-filled porosity, θ _v	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q _{avg} (L/m)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, ATC (yrs)	ENTER Averaging time for noncarcinogens, ATNC (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

MORE
↓

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}\cdot\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^\circ\text{C}$)	Enthalpy of vaporization at the normal boiling point, ΔH_{vap} (cal/mol)	Normal boiling point, T_B ($^\circ\text{K}$)	Critical temperature, T_C ($^\circ\text{K}$)	Unit risk factor, URF ($(\text{kg}/\text{m}^3)^{-1}$)	Reference conc., R/C (mg/m^3)	Molecular weight, MW (g/mol)	
8.80E-02	9.80E-06	5.54E-03	25	7.342	353.24	562.16	2.9E-05	3.0E-02	78.11

END

INTERMEDIATE CALCULATIONS SHEET

Source- building separation, L _T (cm)	Vadose zone soil porosity, θ _v (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S _{we} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k _i (cm ²)	Vadose zone soil relative air permeability, k _{ra} (cm ²)	Floor- wall seam perimeter, X _{max} (cm)	Soil gas conc., Q _{soil} (μg/m ³)	Buildg. ventilation rate, Q _{vent} (cm ³ /s)
137.4	0.280	#N/A	#N/A	1.00E-08	4.000	1.58E+02	3.39E+04

Area or enclosed space below grade, A _B (cm ²)	Crack- total area ratio, η (unitless)	Crack depth below grade, Z _{crack} (cm)	Crack depth below grade, Z _{crack} (cm)	Henry's law constant at ave. soil temperature, H _{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H _{TS} (unitless)	Vapor viscosity at ave. soil temperature, H _{TS} (g/cm ²)	Vadose zone effective diffusion coefficient, D ^{eff} (cm ² /s)	Diffusion path length, L _g (cm)
1.00E+06	5.00E-03	15	7.977	5.29E-03	2.17E-01	1.80E-04	6.86E-03	137.4

Convection path length, L _s (cm)	Source vapor conc., C _{source} (μg/m ³)	Average vapor flow rate into buildg., Q _{avg} (cm ³ /s)	Crack radius, r _{crack} (cm)	Crack effective diffusion coefficient, D _{crack} (cm ² /s)	Area of crack, A _{crack} (cm ²)	Exponent of equivalent foundation number, exp(P _e) (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source buildg. conc., C _{soil} (μg/m ³)
15	1.58E+02	8.33E+01	1.25	6.86E-03	5.00E+03	3.50E+10	9.22E-04	1.46E-01

Unit
risk
factor,
URF
(μg/m³)⁻¹

Reference
conc.,
R/C
(mg/m³)

2.9E-05 3.0E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor	Hazard quotient from vapor
Intrusion to indoor air, carcinogen (unless)	Intrusion to indoor air, noncarcinogen (unless)

1.7E-06	4.7E-03
---------	---------

MESSAGE SUMMARY BELOW:

END

SG-SCREEN
PA Version 2.0; 04/

Reset to
Defaults

DATA ENTRY SHEET

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C _s (µg/cm ³)	OR	ENTER Soil gas conc., C _s (µg/m ³)	Chemical
71432	1.58E+02			Benzene

MORE
↓

ENTER Depth below grade to bottom of enclosed space floor, L _f (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L _s (cm)	ENTER Average soil temperature, T _s (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	ENTER User-defined vadose zone soil vapor permeability, k _v (cm ²)
15	152.4	24		1.00E-08

MORE
↓

ENTER Vadose zone SCS soil type	ENTER Vadose zone soil dry bulk density, P _d (g/cm ³)	ENTER Vadose zone soil total porosity, n _v (unitless)	ENTER Vadose zone soil water-filled porosity, θ _v	ENTER Average vapor flow rate into bldg. (Leave blank to calculate)
	1.5	0.43	0.15	5

MORE
↓

ENTER Averaging time for carcinogens, ATC (yrs)	ENTER Averaging time for noncarcinogens, ATNC (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H ($\text{atm}^{-1}\text{m}^3/\text{mol}$)	Henry's law constant reference temperature, T_R ($^{\circ}\text{C}$)	Enthalpy of vaporization at the normal boiling point, ΔH_{boil} (cal/mol)	Normal boiling point, T_B ($^{\circ}\text{K}$)	Critical temperature, T_C ($^{\circ}\text{K}$)	Unit risk factor, URF ($\mu\text{g}/\text{m}^3\text{y}^{-1}$)	Reference conc., RC (mg/m^3)	Molecular weight, MW (g/mol)
8.80E-02	9.80E-06	5.54E-03	25	7.342	353.24	562.16	2.9E-05	3.0E-02	78.11

END

INTERMEDIATE CALCULATIONS SHEET

Source- building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_v (cm ³ /cm ³)	Vadose zone effective total fluid saturation, S_{se} (cm ³ /cm ³)	Vadose zone soil intrinsic permeability, k_i (cm ²)	Vadose zone soil relative air permeability, k_{ra} (cm ²)	Vadose zone soil effective vapor permeability, k_v (cm ²)	Floor wall seam perimeter, X_{crack} (cm)	Soil gas conc., $C_{soil,gas}$ (µg/cm ³)	Bldg. ventilation rate, $Q_{infiltration}$ (cm ³ /s)
137.4	0.280	#N/A	#N/A	#N/A	1.00E-08	4.000	1.58E+02	7.63E+04

Area of enclosed space below grade, A_B (cm ²)	Crack- total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m ³ /mol)	Henry's law constant at ave. soil temperature, H_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D_{eff} (cm ² /s)	Diffusion path length, L_p (cm)
1.00E+06	5.00E-03	15	15	7.977	5.29E-03	2.17E-01	1.80E-04	6.86E-03	137.4

Convection path length, L_c (cm)	Source vapor conc., C_{source} (µg/m ³)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{flow} (cm ³ /s)	Crack effective diffusion coefficient, D_{crack} (cm ² /s)	Exponent of equivalent foundation number, $exp(P_{e'})$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{infinite}$ (µg/m ³)
15	1.58E+02	1.25	8.33E+01	6.86E-03	3.50E+10	4.10E-04	6.47E-02

Unit
risk
factor,
URF
(µg/m³)⁻¹

Reference
conc.,
R/C
(mg/m³)

2.9E-05 3.0E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor	Hazard quotient from vapor
intrusion to indoor air, carcinogen (unitless)	intrusion to indoor air, noncarcinogen (unitless)

7.7E-07	2.1E-03
---------	---------

MESSAGE SUMMARY BELOW:

END

SG-SCREEN
PA Version 2.0; 04/

Reset to Defaults

DATA ENTRY SHEET

DTSC
Vapor Intrusion Guidance
Interim Final 12/04
(last modified 2/4/09)

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C _s (µg/m ³)	OR	ENTER Soil gas conc., C _s (ppmv)
71432	2.40E+02		Benzene

ENTER Depth below grade to bottom of enclosed space floor, L _f (15 to 200 cm)	ENTER Soil gas sampling depth below grade, L _s (cm)	ENTER Average soil temperature, T _s (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	ENTER User-defined vadose zone soil vapor permeability, k _v (cm ³)
15	152.4	24		1.00E-08

MORE ↓

ENTER Vadose zone SCS soil type Lookup Soil Parameters	ENTER Vadose zone soil dry bulk density, p _d (g/cm ³)	ENTER Vadose zone soil total porosity, n _v (unitless)	ENTER Vadose zone soil water-filled porosity, θ _v (cm ³ /cm ³)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q _{avg} (L/m)
	1.5	0.43	0.15	5

MORE ↓

ENTER Averaging time for carcinogens, ATC (yrs)	ENTER Averaging time for noncarcinogens, ATNC (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
70	30	30	350

MORE ↓

END

CHEMICAL PROPERTIES SHEET

Diffusivity in air, D (cm ² /s)	Henry's law constant at reference temperature, H (atm ⁻¹ m ³ /mol)	Henry's law constant reference temperature, T _R (°C)	Enthalpy of vaporization at the normal boiling point, ΔH _{v,b} (cal/mol)	Normal boiling point, T _B (°K)	Critical temperature, T _C (°K)	Unit risk factor, URF (kg/m ³) ⁻¹	Reference conc., R-C (mg/m ³)	Molecular weight, MW (g/mol)	
8.80E-02	9.80E-06	5.54E-03	25	7.342	353.24	562.16	2.9E-05	3.0E-02	78.11

END

INTERMEDIATE CALCULATIONS SHEET

Vadose zone soil air-filled porosity, θ_v	Vadose zone total fluid saturation, S_{at}	Vadose zone intrinsic permeability, k_i	Vadose zone relative air permeability, k_{ra}	Vadose zone effective vapor permeability, k_v	Floor wall seam permimeter, X_{seam}	Soil gas conc., $Q_{soilgas}$	Bldg. ventilation rate, Q_{vent}
(cm^3/cm^3)	(cm^3/cm^3)	(cm^2)	(cm^2)	(cm^2)	(cm)	$(\mu g/m^3)$	(cm^3/s)
137.4	0.280	#N/A	#N/A	1.00E-08	4.000	2.40E+02	7.63E+04

Area of enclosed space below grade, AB	Crack-to-total area ratio, η	Crack depth below grade, Z_{crack}	Crack depth below grade, Z_{crack}	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$	Henry's law constant at ave. soil temperature, H_{TS}	Henry's law constant at ave. soil temperature, H_{TS}	Vapor viscosity at ave. soil temperature, μ_{TS}	Vadose zone effective diffusion coefficient, D_{eff}	Vadose zone diffusion path length, L_s
(cm^2)	(unitless)	(cm)	(cm)	(cal/mol)	$(atm\cdot m^3/mol)$	$(atm\cdot m^3/mol)$	$(g/cm\cdot s)$	(cm^2/s)	(cm)
1.00E+06	5.00E-03	15	7.977	5.29E-03	2.17E-01	1.80E-04	6.86E-03	137.4	

Convection path length, L_c	Source vapor conc., C_{source}	Average vapor flow rate into bldg., Q_{bldg}	Crack radius, r_{crack}	Crack effective diffusion coefficient, D_{crack}	Area of crack, A_{crack}	Exponent of foundation Peclet number, $exp(Pe')$	Infinite source indoor attenuation coefficient, α	Infinite source bldg. conc., $C_{infinite}$
(cm)	$(\mu g/m^3)$	(cm^3/s)	(cm)	(cm^2/s)	(cm^2)	(unitless)	(unitless)	$(\mu g/m^3)$
15	2.40E+02	8.33E+01	1.25	6.86E-03	5.00E+03	3.50E+10	4.10E-04	9.83E-02

Unit risk factor, URF $(\mu g/m^3)^{-1}$

Reference conc., R/C (mg/m^3)

2.9E-05

3.0E-02

END

RESULTS SHEET

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor	Intrusion to indoor air, carcinogen (unless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unless)
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1.2E-06	3.1E-03
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MESSAGE SUMMARY BELOW:

END

14700 Nelson Avenue
City of Industry, California

April 7, 2010
Project No. 100213002

APPENDIX C
BORING LOGS



Ardent Environmental Group Inc.
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BORING NUMBER SB1

PAGE 1 OF 1

CLIENT Industry Urban-Development Agency PROJECT NAME 14700 Nelson Avenue
 PROJECT NUMBER 100213001 PROJECT LOCATION 14700 Nelson Avenue, City of Industry, California
 DATE STARTED 3/19/10 COMPLETED 3/19/10 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR _____ GROUND WATER LEVELS:
 DRILLING METHOD Direct Push AT TIME OF DRILLING ---
 LOGGED BY PAR CHECKED BY PAR AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S. GRAPHIC LOG	MATERIAL DESCRIPTION
0				
			0.5	Concrete (SM)
5	SB1-5	PID <1 ppm	SM	Moderate yellowish brown (10YR 5/4), moist, silty fine SAND.
10	SB1-10	PID <1 ppm	10.0	

No petroleum hydrocarbon odor or staining noted in samples.
 Bottom of borehole at 10.0 feet.



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BORING NUMBER SB2

PAGE 1 OF 1

CLIENT Industry Urban-Development Agency PROJECT NAME 14700 Nelson Avenue
 PROJECT NUMBER 100213001 PROJECT LOCATION 14700 Nelson Avenue, City of Industry, California
 DATE STARTED 3/19/10 COMPLETED 3/19/10 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR _____ GROUND WATER LEVELS:
 DRILLING METHOD Direct Push AT TIME OF DRILLING ---
 LOGGED BY PAR CHECKED BY PAR AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
				0.5	Concrete
	SB2-2.5	PID <1 ppm	SM	[Stippled Pattern]	(SM) Dark yellowish orange (10YR 6/6), moist, silty fine SAND with trace pieces of concrete and fine gravel. Fill material.
	SB2-5	PID <1 ppm			Becomes moderate yellowish brown (10YR 5/4) at 2 feet. Native soil.
5				5.0	

No petroleum hydrocarbon odor or staining noted throughout continuous sample collected from 1 to 5 feet.
 Bottom of borehole at 5.0 feet.



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BORING NUMBER SB3

PAGE 1 OF 1

CLIENT Industry Urban-Development Agency PROJECT NAME 14700 Nelson Avenue
 PROJECT NUMBER 100213001 PROJECT LOCATION 14700 Nelson Avenue, City of Industry, California
 DATE STARTED 3/19/10 COMPLETED 3/19/10 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR _____ GROUND WATER LEVELS:
 DRILLING METHOD Direct Push AT TIME OF DRILLING ---
 LOGGED BY PAR CHECKED BY PAR AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
				0.5	
	SB3-2.5	PID <1 ppm	SM	(SM)	Moderate yellowish brown (10YR 5/4), moist, silty fine SAND.
	SB3-5	PID <1 ppm			
5				5.0	

No petroleum hydrocarbon odor or staining noted throughout continuous sample collected from 1 to 5 feet.
 Bottom of borehole at 5.0 feet.



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BORING NUMBER SB4

PAGE 1 OF 1

CLIENT Industry Urban-Development Agency PROJECT NAME 14700 Nelson Avenue
 PROJECT NUMBER 100213001 PROJECT LOCATION 14700 Nelson Avenue, City of Industry, California
 DATE STARTED 3/19/10 COMPLETED 3/19/10 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR _____ GROUND WATER LEVELS:
 DRILLING METHOD Direct Push AT TIME OF DRILLING _____
 LOGGED BY PAR CHECKED BY PAR AT END OF DRILLING _____
 NOTES _____ AFTER DRILLING _____

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
				0.5	Asphalt (SM)
	SB4-2.5	PID <1 ppm	SM	5.0	Moderate yellowish brown (10YR 5/4), moist, silty fine SAND.
	SB4-5	PID <1 ppm			
5					

No petroleum hydrocarbon odor or staining noted throughout continuous sample collected from 1 to 5 feet.
 Bottom of borehole at 5.0 feet.



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BORING NUMBER SB5

PAGE 1 OF 1

CLIENT Industry Urban-Development Agency PROJECT NAME 14700 Nelson Avenue
 PROJECT NUMBER 100213001 PROJECT LOCATION 14700 Nelson Avenue, City of Industry, California
 DATE STARTED 3/19/10 COMPLETED 3/19/10 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR _____ GROUND WATER LEVELS:
 DRILLING METHOD Direct Push AT TIME OF DRILLING ---
 LOGGED BY PAR CHECKED BY PAR AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
	SB5-3			0.5	Asphalt
			GP	2.0	(GP) Base material. Fine gravel.
		PID <1 ppm	SM	3.0	(SM) Moderate yellowish brown (10YR 5/4), moist, silty fine SAND.

No petroleum hydrocarbon odor or staining noted throughout continuous sample collected from 1 to 3 feet.
 Bottom of borehole at 3.0 feet.



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BORING NUMBER SB6

PAGE 1 OF 1

CLIENT Industry Urban-Development Agency PROJECT NAME 14700 Nelson Avenue
 PROJECT NUMBER 100213001 PROJECT LOCATION 14700 Nelson Avenue, City of Industry, California
 DATE STARTED 3/19/10 COMPLETED 3/19/10 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR _____ GROUND WATER LEVELS:
 DRILLING METHOD Direct Push AT TIME OF DRILLING ---
 LOGGED BY PAR CHECKED BY PAR AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
	SB6-3	PID <1 ppm			0.5 Asphalt
			GP		1.0 (GP) Base material. Fine gravel.
			CL		2.0 (CL) Dark yellowish brown (10YR 4/2), moist, silty CLAY. Fill material.
			SM		3.0 (SM) Moderate yellowish brown (10YR 5/4), moist, silty fine SAND. Native soil.

No petroleum hydrocarbon odors or staining noted throughout continuous sample collected from 1 to 3 feet.
 Bottom of borehole at 3.0 feet.



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BORING NUMBER SB7
 PAGE 1 OF 1

CLIENT Industry Urban-Development Agency PROJECT NAME 14700 Nelson Avenue
 PROJECT NUMBER 100213001 PROJECT LOCATION 14700 Nelson Avenue, City of Industry, California
 DATE STARTED 3/19/10 COMPLETED 3/19/10 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR _____ GROUND WATER LEVELS:
 DRILLING METHOD Direct Push AT TIME OF DRILLING ---
 LOGGED BY PAR CHECKED BY PAR AT END OF DRILLING ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					
	SB7-3	PID 1.5 ppm			0.5 Asphalt
			GP		1.0 (GP) Base material. Fine gravel.
			CL		2.0 (CL) Dark yellowish brown (10YR 5/4), moist, silty CLAY with trace fine gravel and fill material.
			SM		3.0 (SM) Moderate yellowish brown (10YR 5/4), moist, silty fine SAND. Native soil.

No petroleum hydrocarbon odor or staining noted in continuous sample collected from 1 to 3 feet.
 Bottom of borehole at 3.0 feet.

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