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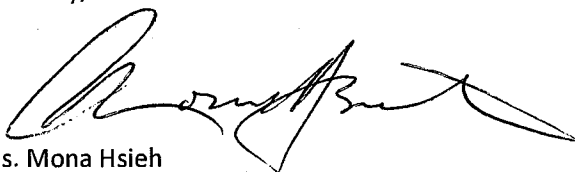
Mr. Keith Nowell  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Ste. 250  
Alameda, CA 94502-6577  
[keith.nowell@acgov.org](mailto:keith.nowell@acgov.org)

Subject: **Additional Soil Gas Investigation and Request for Case Closure**  
3101 35<sup>th</sup> Avenue, Oakland, CA  
Fuel Leak Case No. RO0003164; Global ID T10000006539

Dear Mr. Nowell,

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached *Additional Soil Gas Investigation and Request for Case Closure* are true and correct to the best of my knowledge.

Sincerely,



Ms. Mona Hsieh  
Responsible Party Representative



***Additional Soil Gas Investigation and  
Request for Case Closure***

**3101 35<sup>th</sup> Avenue  
Oakland, California**

**November 2, 2016**

***Prepared for:***

Green Oak Builders  
Attn: Ms. Mona Hsieh & Mr. Patrick Kong  
888 Brannan Street, #101  
Oakland, CA 94103

***Prepared by:***

Almar Environmental  
407 Almar Avenue  
Santa Cruz, California 95060

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<b>TABLE OF CONTENTS</b>	<b>Page No.</b>
1.0 INTRODUCTION .....	1
2.0 SITE INFORMATION .....	1
2.1 Physical Setting .....	1
3.0 ADDITIONAL SOIL GAS FIELD INVESTIGATION .....	4
3.1 Regulatory Liaison, Permitting, and Project Management .....	4
3.2 Drilling and Soil Sampling .....	5
3.3 Construction of Soil-Gas Sampling Points .....	5
3.4 Soil Gas Sampling .....	5
3.5 Backfilling of Borings .....	5
4.0 SAMPLE ANALYSIS AND RESULTS .....	6
4.1 Laboratory Analytical Methods .....	6
4.2 Soil Gas Analytical Results .....	6
4.3 Discussion of Analytical Results.....	6
5.0 CONCLUSIONS AND RECOMMENDATIONS .....	7
5.1 Conclusions.....	7
5.2 Recommendations.....	7
6.0 CERTIFICATION AND DISTRIBUTION.....	8
7.0 REFERENCES .....	9

**FIGURES**

- Figure 1 – Site Vicinity Map
- Figure 2 – Aerial Photograph of Site Area
- Figure 3 – Detailed Site Map
- Figure 4 – Site Map Showing Current and Historical Sampling Locations
- Figure 5 – Site Map Showing Current and Historical Soil Gas Sampling Results
- Figure 6 – Site Map Showing Soil Gas Sampling Results and Proposed New Construction Floor Plan

**TABLES**

- Table 1A – Summary of Historical Soil Analytical Data – Hydrocarbons and VOCs
- Table 1B – Summary of Historical Soil Analytical Data – PAHs
- Table 1C – Summary of Historical Soil Analytical Data – Metals
- Table 2 – Summary of Historical Groundwater Analytical Data
- Table 3 – Summary of Current and Historical Soil Gas Analytical Data

**APPENDICES**

- Appendix A ACEH Email Approval
- Appendix B ACPWA Drilling Permit
- Appendix C Boring Logs
- Appendix D Soil Gas Purge Data Sheets
- Appendix E Soil Gas Lab Data Sheets

## 1.0 INTRODUCTION

Almar Environmental (Almar) appreciates the opportunity to work on the 3101 35<sup>th</sup> Avenue project in Oakland, California (Figures 1 through 3). Almar has been retained by Green Oak Builders to prepare this *Additional Soil Gas Investigation and Request for Case Closure* for the subject site.

Following a case review meeting with Alameda County Environmental Health Department (ACEH) staff on October 19, 2016, Almar prepared a *Soil Gas Sampling Proposal* which outlined a specific set of tasks to install and sample six (6) additional soil gas sampling points at the subject site. The purpose of the proposal was to further define the lateral extent of soil vapor contamination identified in previous investigations. The proposal was approved by the ACEH in an email correspondence dated October 3, 2016 (Appendix A) and the investigation was implemented in October 2016. The details and results of the investigation are presented, herein.

## 2.0 SITE INFORMATION

The project site is located at 3101 35<sup>th</sup> Avenue in the city of Oakland, California (Figure 1). The site consists of a roughly rectangular property associated with Alameda County Assessor's parcel number 28-951-12-1. The site is located on the northern corner of the intersection of 35<sup>th</sup> Avenue and School Street. An Aerial Photograph of the Site Area is included as Figure 2 and a detailed Site Map is included as Figure 3.

### 2.1 Physical Setting

Based on the U.S. Geological Survey Oakland East, California Quadrangle 7.5 Minute Series Topo Map, the subject property is approximately 160 feet (ft) above mean sea level (msl). The topographic slope of the subject property and surrounding areas is generally to the west, towards the San Francisco Bay (Figure 1).

According to the *Geologic Map and Map Database of the Oakland Metropolitan Area, Alameda, Contra Costa, and San Francisco Counties, California*, the site lies upon Pleistocene alluvial fan and fluvial deposits (Qpaf) (Graymer, 1996). Site specific soils, encountered during previous investigations have been identified as predominately Clayey Gravel to Gravelly Clay (CL) of varying consistency and plasticity from the ground surface until the total depths explored (approximately 30 feet bgs) (Almar, 2015). Subsurface soils encountered during this current investigation are described in detail in Section 3.2.1 and depicted on the boring logs (Appendix C).

The nearest surface water to the site is the seasonal Peralta Creek, located approximately 800 feet north and north west of the subject site. The larger San Francisco Bay is located approximately 2.5 miles west of the site (Figure 1). Based upon topography of the area, regional groundwater flow is expected to be to the west/southwest (towards the San Francisco Bay). Site specific groundwater data is unavailable. However, an active leaking underground storage tank case is located directly across School Street from the subject site (Figure 2). The site is a former Exxon Service Station associated with 3055 35<sup>th</sup> Avenue (ACHCSA Case #RO0000271). Significant groundwater studies have been conducted at this site, including over 50 groundwater monitoring events since 1999. During the most recent groundwater monitoring event conducted at this site, static groundwater was encountered at between 12 and 16 feet bgs and has been shown to consistently flow in a west to west by southwest direction (Weber Hayes, 2015).

## 2.2 Site History

The subject site appears to have operated as a gasoline service station from at least 1929 until the early 1980s. In the later years the service station was owned and operated by Texaco. Texaco sold the property in 1982. It appears that the USTs associated with the former Texaco station were previously located near the southern corner of the property (Figure 3) and were removed sometime prior to 1982. From the mid 1980s until the late 1990s the site was an auto parts sales and auto glass repair facility. The building and associated canopy appear to have remained unoccupied from at least 1995 until the buildings were demolished in 2014. The property is currently a vacant lot surrounded by a chain link fence.

## 2.3 Summary of Previous Environmental Investigations

### Phase I Environmental Site Assessment (ESA) – January, 2005

On January 31, 2005 as part of a property transfer, a Phase I ESA was prepared for the subject site by Martin & Associates of Oakland, California (Martin). Part of the conclusions of that report found:

*“No evidence of (current) storage tanks or pipelines was identified. Former USTs were reportedly removed when gasoline service station activities were discontinued in the early 1980s. No further action or investigation is recommended regarding storage tanks or pipelines at the project.”*

Based upon these findings and recommendations, the current property owner proceeded with purchasing the property.

### Phase I Environmental Site Assessment (ESA) – October, 2014

On October 3, 2014 a second Phase I ESA, as part of a loan process, was prepared for the subject site by Piers Environmental Services, Inc. of Mill Valley, California (Piers). Part of the conclusions of that report found:

*This assessment has revealed evidence of a **Recognized Environmental Condition (REC)** from the prior use of the Property. The Property operated as a gasoline service station from at least 1929 to 1982, apparently with several generations of tank locations.*

*The gasoline service station closed before environmental regulations existed that required the tanks to be removed and inspected by the regulatory agencies. PIERS was unable to obtain any information concerning tank removals. **Therefore, PIERS recommends performing a geophysical survey in the known tank locations to determine if the tanks have been removed.***

*A groundwater monitoring well, MW-6, from an adjacent down-gradient LUST case at 3055 35<sup>th</sup> Avenue has detected 1,800 parts per billion (ppb) of Total Petroleum Hydrocarbons (TPH) as gasoline and 230 ppb of benzene, significantly above the Water Quality Objective of 1,000 ppb and one ppb, respectively.*

*PIERS contacted Mr. Keith Nowell of the ACEH regarding the 3055 35<sup>th</sup> Avenue LUST case and the consultant’s claim that, based on well MW-6 in front of the Property, contamination from the Property was migrating to the 3055 35<sup>th</sup> site. **Therefore, PIERS recommends conducting a limited soil and groundwater site investigation to determine if the gasoline and benzene concentrations detected in well MW-6 are due to an on-site source of contamination from the Property.***

*A Phase II investigation of soil and groundwater conditions and additional effort to determine if there are any tanks remaining at the Property should be completed.*

#### UST Removal Activities – January, 2015

Based upon the findings of the Piers Phase I ESA, an underground survey of the property was conducted and three (3) 350 gallon USTs were identified on the property. Two of the tanks contained gasoline and were located along the western property boundary, along School Street. The third tank was a waste oil tank located near the center of the property. The tank locations are shown on Figure 3. The tanks were subsequently removed under permit by Environmental Restoration Services of Menlo Park, California (ERS). Confirmation soil samples were collected by ERS from below each of the former tanks and the two associated former pump island locations. Elevated concentrations of Total Petroleum Hydrocarbons as gasoline (TPHg) were detected in soil samples collected from below the former western most pump island (Table 1A and Figure 4). A detailed summary of the tank removal and initial sampling activities is documented in ERS's *Underground Tank Technical Closure Report*.

#### Interim Remedial Action by Overexcavation – April, 2015

Based upon the findings of the elevated hydrocarbon concentrations documented during the tank removal activities, ERS prepared and implemented an *Interim Remedial Action Workplan* for the subject site. Interim remedial activities consisted of overexcavated hydrocarbon impacted soils in the area of the former dispenser location. In total, approximately 25 cubic yards of non-hazardous petroleum impacted soils were excavated and transported to Newby Island Landfill under non-hazardous manifests. Interim remedial activities are documented in ERS's *Report of Interim Remedial Action*.

#### Data Gap Investigation Workplan and Site Conceptual Model – June, 2015

On June 25<sup>th</sup>, 2015 Almar prepared a *Data Gap Investigation Workplan and Site Conceptual Model* for the site. This Workplan identified several data gaps which remained unaddressed prior to the being eligible for closure under the State's Low Threat Closure Policy (LTCP). The Workplan, in addition to presenting an initial site conceptual model for the site, set forth a series of tasks to close those data gaps. The ACEH reviewed the Workplan and issued a directive letter approving the proposed scope of work. As such, the Workplan was implemented in November 2015 (see below).

#### Soil, Water, and Soil Gas Investigation – November, 2015

On December 4, 2015 Almar prepared a *Soil, Water, and Soil Gas Investigation & Updated LTCP Data Gap Analysis* for the site. This report documented the installation and sampling of three temporary borings for soil and groundwater as well as the installation and sampling of three soil gas sample points. Based upon the results of the investigation, the ACEH requested an additional investigation be conducted to further assess the extent of subsurface contamination at the site and adequately characterize the site as it pertains to the requirements contained within the LTCP. As such, Almar prepared a Workplan and subsequent Workplan Addendum to satisfy these requirements. The Workplan and Addendum were subsequently approved by the ACEH in their May 9, 2016 Directive Letter. The investigation was implemented in May and June 2016. The details and results of the investigation were presented within the following report (see below).

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### Soil, Water, and Soil Gas Investigation – July, 2016

On July 5, 2016 Almar prepared a *Soil, Water, and Soil Gas Investigation* report for the site. The report documented the installation and sampling of soil and grab groundwater samples from five (5) additional temporary borings (DP-6 through DP-10) and the installation and collection of soil gas samples from one (1) temporary soil gas sampling point (SG-4). The purpose of this investigation was to 1.) Further define the extent of contaminants of concern in subsurface soils and groundwater identified in previous investigation, 2.) Determine if subsurface soils and groundwater have been impacted by the presence of subsurface hydraulic lifts formerly located near the northern property line, and 3.) Confirm the presence of PCE in soil vapor, previously detected in samples collected from the sand filled former tank pit. The results of this investigation found:

1. The vertical and lateral extent of CoCs in subsurface soils appear to be fully defined and contamination does not exist at concentrations exceeding either ESLs or recommended LTCP values.
2. The groundwater contaminate plume emanating from the subject site appears to be defined in the downgradient direction by wells RW-13 and RW-14 located on the former Exxon Station property and is less than 100 feet in length.
3. The results of this current sampling event confirmed the results of the previous sampling, as PCE was detected at a similar concentration of 310  $\mu\text{g}/\text{m}^3$  in SG-4.

Based upon these results, Almar recommended the case be reviewed for closure under the State's Low Threat Closure Policy (LTCP).

### Case Review and Meeting with Oversight Agency – October, 2016

Based upon the findings and recommendations of the above referenced report, the ACEH called a meeting to discuss the case status. In the meeting the ACEH verbally agreed with Almar's recommendation that the case likely qualified for closure under the LTCP. However, further delineation of soil gas contaminants was necessary. As such, Almar prepared a *Soil Gas Sampling Proposal* which outlined a specific set of tasks to install and sample six (6) additional soil gas sampling points at the subject site. The proposal was approved by the ACEH in an email correspondence dated October 3, 2016 (Appendix A) and the investigation was implemented in October 2016. The details and results of the investigation are presented within the following sections.

## **3.0 ADDITIONAL SOIL GAS FIELD INVESTIGATION**

In general, Almar conducted field activities involving the installation and sampling of six (6) temporary soil gas sampling points (SG-5 through SG-10). The specific details of the investigation are presented below. All project activities were completed under the direction of a State of California Professional Geologist in October 2016.

### **3.1 Regulatory Liaison, Permitting, and Project Management**

Almar represented the client with regulatory agencies in meetings and/or communications. A representative of Almar coordinated, oversaw, and/or conducted all activities detailed in this report. Almar also obtained the appropriate subsurface drilling permit from the Alameda County Public Works Agency (ACPWA) (Appendix B). As required by law, Almar marked the subject property and notified

Underground Service Alert (USA) to clear the boring locations of underground utilities prior to drilling activities.

### **3.2 Drilling and Soil Sampling**

Soil borings were advanced using a 2-inch diameter hand auger by a licensed State of California Professional Geologist. Encountered subsurface soils were logged using the Unified Soil Classification System (USCS). The boring locations are shown on Figure 4 and detailed boring logs depicting the encountered subsurface materials are presented in Appendix C.

### **3.3 Construction of Soil-Gas Sampling Points**

Following advancement of the soil gas borings, Almar converted each boring into a temporary soil gas sampling points. Each sampling point was constructed by placing ¼-inch diameter Teflon<sup>®</sup> tubing attached to a polyethylene vapor implant to 5.0 feet bgs. A sand pack consisting of #2/12 sand was then installed around the implant from 5.5 to 4.5 feet bgs. Approximately 12-inches of dry granular bentonite was placed above the sand pack, followed by a hydrated bentonite seal to the ground surface. The seal was designed to minimize ambient air from the atmosphere from intruding into the area of the polyethylene probe.

### **3.4 Soil Gas Sampling**

On October 10, 2016, after allowing at least 48 hours post installation for the soil-gas sampling points to equilibrate to natural subsurface conditions, Almar conducted the purging and sampling of soil gas sampling points SG-5 through SG-10. To ensure representative soil gas samples were collected, Almar followed the steps outlined by the CA DTSC in their *Soil Gas Advisory Document* (March 2010). In general, a Helium tracer shroud was used to perform a quantitative leak test while sampling each soil gas point. A sealed chamber was placed over the head of the soil gas point. A minimum 20% Helium in air atmosphere was maintained around the sample train and above the sample point annulus. The soil gas sample was collected using a SUMA<sup>®</sup> canister supplied by the contracted laboratory. Prior to the collection of the sample, the at least 3 purge volumes of air (soil gas) were removed from the probe and tubing associated with the point. The sampling point was purged using a SUMA<sup>®</sup> canister (purge canister) attached to a flow meter which, in turn is attached to the Teflon tubing of the soil gas point. The sampling point was purged at a rate of 150 ml/minute. Once the point was purged, a sample collection SUMA<sup>®</sup> canister was attached to the Teflon tubing of the sampling point, the initial negative pressure of the canister measured (and recorded), and soil gas was delivered to the canister from the well until a negative pressure of about five-inches of Hg is noted on the vacuum gauge on the sample collection SUMA<sup>®</sup> canister. All vacuum readings were documented on the chain of custody record and are shown on the soil gas purge data sheets (Appendix D). A discussion of the soil gas sampling analytical results is presented in Section 4.3.

### **3.5 Backfilling of Borings**

Once all soil gas samples were collected from the borings, each boring was backfilled from the bottom of the boring to ground surface with neat cement grout. The neat cement grout was composed of a mix consistency of one 94 pound bag of Portland cement to five gallons of water. As required in the drilling permit, the grouting operations were witnessed by a representative of the ACPWA.



## 4.0 SAMPLE ANALYSIS AND RESULTS

Soil gas samples for laboratory analysis were collected in the methods described in Section 3.4. The analytical results are summarized in the following sections.

### 4.1 Laboratory Analytical Methods

Once the soil gas sample was collected, it was transported, observing formal chain-of-custody (COC) procedures to Curtis & Tompkins, Ltd. (State of California-certified testing laboratory #2896) for analysis. The soil gas sample was analyzed for VOCs (including PCE) by EPA Test Method TO-15, gasoline range organics (TPHg) by EPA Test Method TO-3, and the fixed gases Oxygen and Helium by ASTM D1946.

### 4.2 Soil Gas Analytical Results

A total of six soil gas samples (SG-5 through SG-10) was collected and submitted for laboratory analysis. A summary of the soil vapor sampling analytical laboratory results is presented in Table 3 and the complete laboratory data sheets are presented in Attachment E. A brief summary of the analytical data is presented as follows:

- **O<sub>2</sub>** was reported in each of the six samples at mol % concentrations ranging from 5.9% (SG-10) to 17% (SG-6 and SG-8);
- **Helium** was not reported in any of the six samples above laboratory detection limits. This indicates that no breakthrough occurred and the samples are valid;
- **TPHg (C<sub>6</sub>-C<sub>12</sub>)** was reported in each of the six samples at concentrations ranging from 240 µg/m<sup>3</sup> (SG-6) to 240,000 µg/m<sup>3</sup> (SG-7);
- **Benzene** was reported in one of the samples, SG-5, at a concentration of 6.8 µg/m<sup>3</sup>;
- **Toluene** was reported in four of the six samples at concentrations ranging from 4.1 µg/m<sup>3</sup> (SG-6) to 290 µg/m<sup>3</sup> (SG-7);
- **Ethylbenzene** was not reported in any of the six samples above laboratory detection limits;
- **Xylenes (total)** were reported in two of the six samples at concentrations ranging from 7.6 µg/m<sup>3</sup> (SG-5) to 120 µg/m<sup>3</sup> (SG-7);
- **Naphthalene** was not reported in any of the six samples above laboratory detection limits;
- **PCE** was reported in four of the six samples at concentrations ranging from 160 µg/m<sup>3</sup> (SG-6) to 310 µg/m<sup>3</sup> (SG-5); and
- No other contaminants of concern (COCs) were reported above laboratory detection limits in soil gas samples SG-5 through SG-10.

### 4.3 Discussion of Analytical Results

The purpose of this investigation was to further define the lateral extent of soil vapor contamination (specifically TPHg and PCE) identified in previous investigations. The results of the investigation confirm the results of previous soil gas sampling investigations at the site, in that both TPHg and PCE exist in relatively low concentrations of soil gas across the site. To date, a total of 10 soil gas samples (including the six collected as part of this investigation) have been collected at the site. TPHg was detected in each of the 10 samples at concentrations up to a maximum of 240,000 µg/m<sup>3</sup> (Table 3). All detected TPHg concentrations are well below both the residential (300,000 µg/m<sup>3</sup>) and commercial (2,500,000 µg/m<sup>3</sup>) Environmental Screening Levels (ESLs) for TPHg. This indicates that the detected concentrations of TPHg can be assumed to not pose a significant threat to human health, water resources, or the environment.

PCE has been detected in six of the 10 soil gas samples collected at the site, to date. Although the detected PCE concentrations do not appear to follow a typical distribution pattern, the highest detected

concentrations (up to 310  $\mu\text{g}/\text{m}^3$ ) were found in samples SG-4 and SG-5 (Table 3). Both of these sample points were installed within the former Texaco tank pit (Figure 5). Although this detected concentration is slightly above both its corresponding residential ESL and California Human Health Screening Level (CHHSL). None of the detected concentrations are above commercial ESLs or CHHSLs. The proposed new development at the site consists of 6 residential units and one commercial unit. As shown on Figure 6, each of the soil gas samples (SG-4, SG-5, SG-8 and SG-9) which contained concentrations of PCE exceeding residential, but below commercial ESLs and CHHSLs, are located either within the proposed floor plan of the commercial unit or within the proposed parking areas. This indicates that the new development can be constructed as proposed without the detected soil gas concentrations posing a significant threat to human health.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusions

The following conclusions are based upon review of historical environmental reports, interpretation of analytical data, and field measurements collected during October 2016:

- As stated in previous investigation, the site appears to qualify for closure under the RWQCB's Low Threat Closure Policy, as the site appears to 1.) meet all eight (identified as a through h) of the general criteria of the LTCP, 2.) meet the media-specific criteria of the LTCP for petroleum vapor intrusion to indoor air, 3.) meet the media-specific criteria of the LTCP for direct contact and outdoor air exposure, and 4.) meet media-specific criteria of the LTCP for groundwater (Scenario 1).
- To date, a total of ten soil gas samples have been collected at the site, including six as part of this current investigation. The sampling results indicate that both TPHg and PCE exist in relatively low concentrations of soil gas across the site.
- All detected TPHg concentrations are well below both the residential (300,000  $\mu\text{g}/\text{m}^3$ ) and commercial (2,500,000  $\mu\text{g}/\text{m}^3$ ) Environmental Screening Levels (ESLs) for TPHg. This indicates that the detected concentrations of TPHg can be assumed to not pose a significant threat to human health, water resources, or the environment.
- Four of the soil gas samples (SG-4, SG-5, SG-8 and SG-9) collected to date, were found to contain concentrations of PCE exceeding residential, but below commercial ESLs and CHHSLs. As shown on Figure six, each of these four samples are located either within the proposed floor plan of the commercial unit or within the proposed parking areas. This indicates that the new development can be constructed as proposed without the detected soil gas concentrations posing a significant threat to human health.

### 5.2 Recommendations

Based on the data collected during this investigation and the above conclusions, Almar makes the following recommendations:

- The fuel release case should be reviewed by the local oversight agency for case closure under the RWQCB's Low Threat Closure Policy.
- The proposed new development at the site can be constructed as proposed without the detected soil gas concentrations posing a significant threat to human health. However, to

ensure against the vapor intrusion of PCE in soil gas to indoor air, it may be prudent to install a vapor barrier below the proposed concrete slab floor of the new development.

## 6.0 CERTIFICATION AND DISTRIBUTION

To the best of our knowledge, all statements made in this Report are true and correct. This report is based on data provided by the client and others, site conditions observed, samples collected and analytical data. No warranty whatsoever is made that this report addresses all contamination found on the site.

Respectfully submitted,



Forrest N. Cook  
Owner/Principal Scientist  
Almar Environmental  
California Professional Geologist #8201 (exp 9/18)

cc:

Mr. Keith Nowell  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Ste. 250  
Alameda, CA 94502-6577  
[keith.nowell@acgov.org](mailto:keith.nowell@acgov.org)

Ms. Dillon Roe  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Ste. 250  
Alameda, CA 94502-6577  
[dillan.roe@acgov.org](mailto:dillan.roe@acgov.org)

## 7.0 REFERENCES

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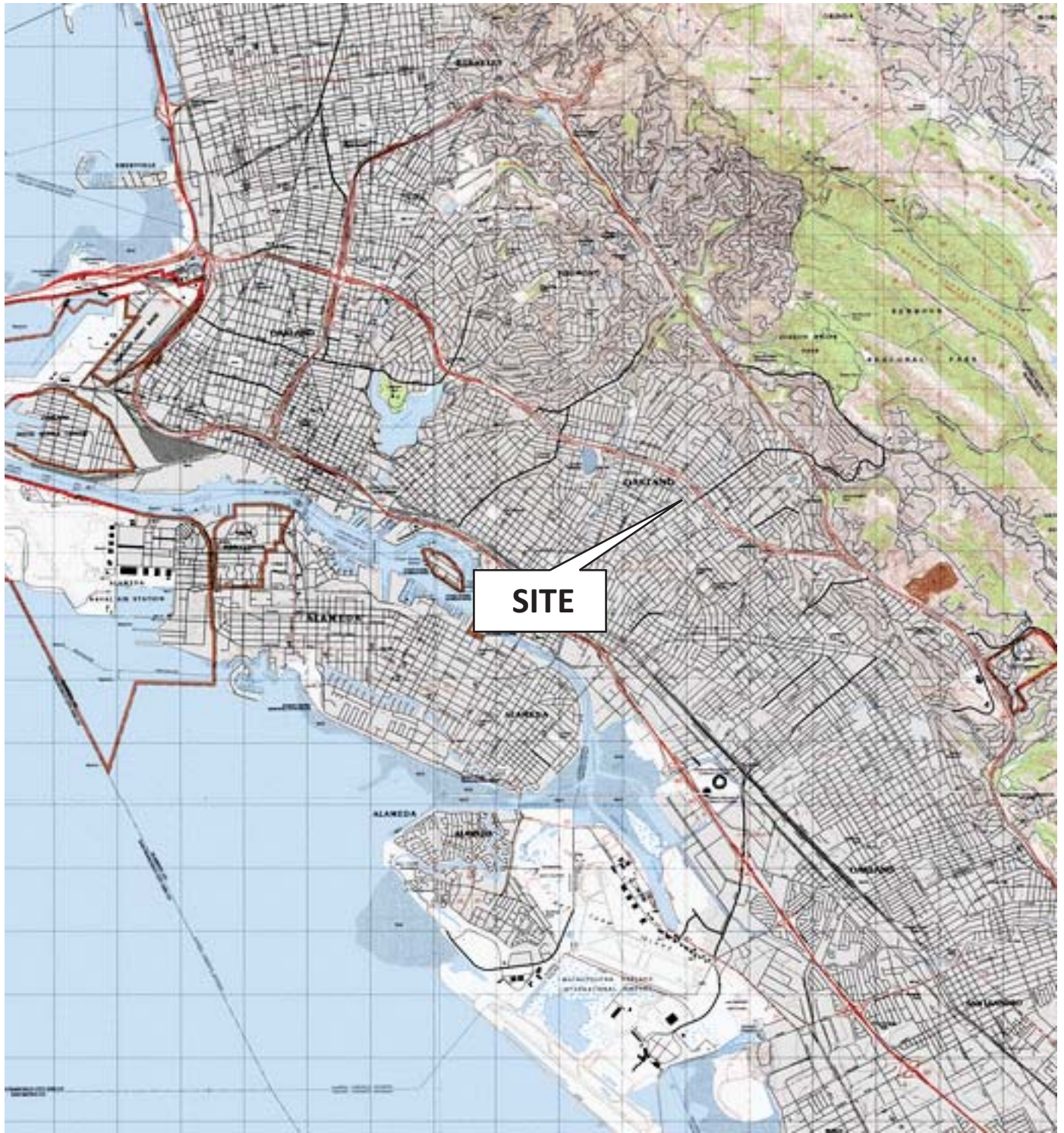
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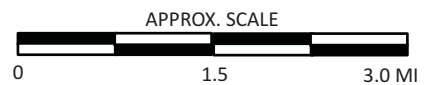
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## FIGURES



SOURCE: USGS 1:24,000 SCALE SERIES OAKLAND EAST, CA QUAD



3101 35th AVENUE  
OAKLAND, CALIFORNIA

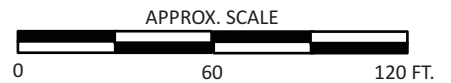
SITE VICINITY TOPO MAP

FIGURE

1



SOURCE: Google Earth, 2015

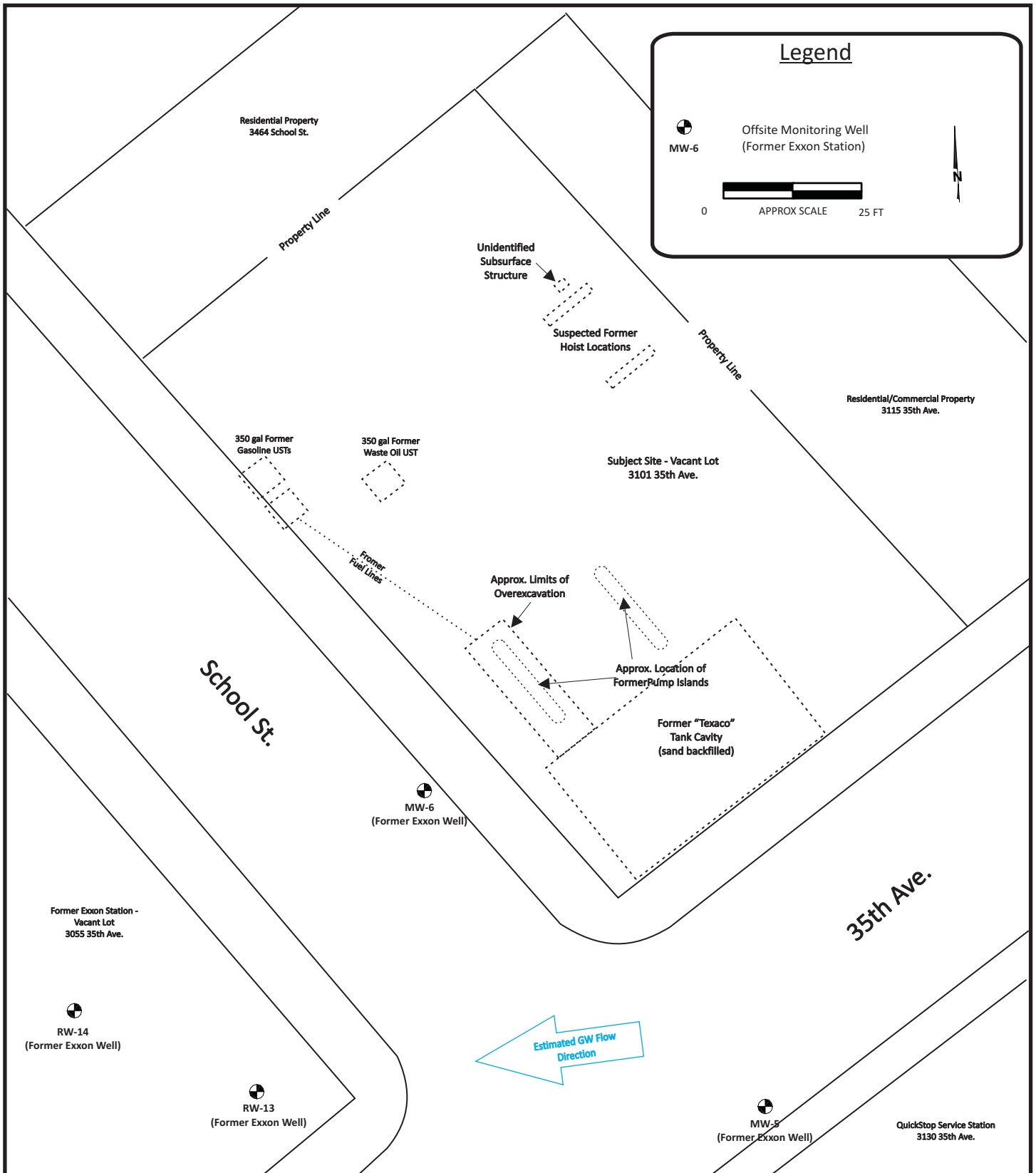


3101 35th AVENUE  
OAKLAND, CALIFORNIA

AERIAL PHOTOGRAPH  
OF SITE AREA

FIGURE

2



**Legend**

Offsite Monitoring Well  
 (Former Exxon Station)

0      APPROX SCALE      25 FT

N



**3101 35th AVENUE  
OAKLAND, CALIFORNIA**





**DETAILED SITE MAP**

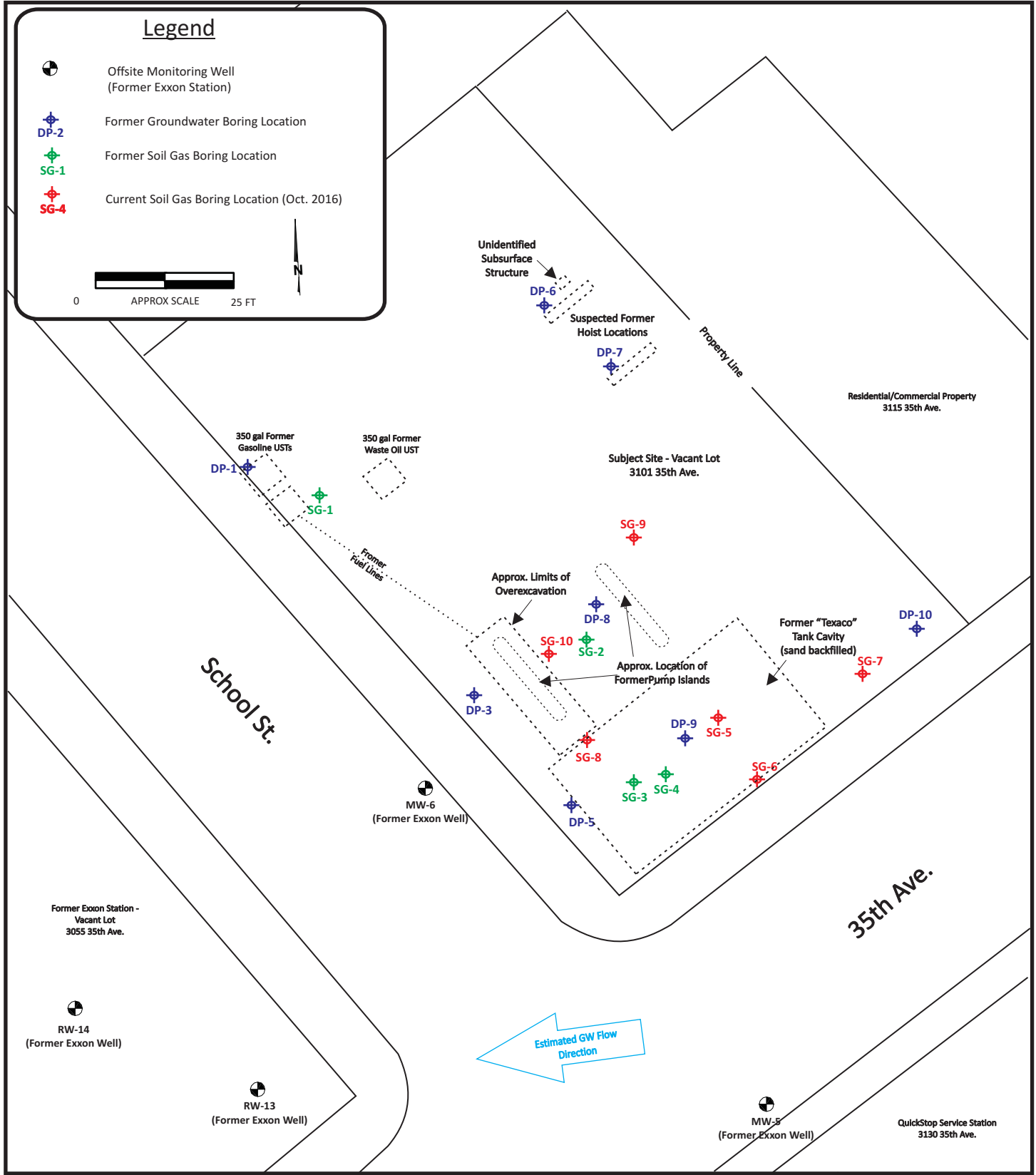
**FIGURE**

**3**



**Legend**

-  Offsite Monitoring Well (Former Exxon Station)
-  Former Groundwater Boring Location
-  Former Soil Gas Boring Location
-  Current Soil Gas Boring Location (Oct. 2016)






3101 35th AVENUE  
OAKLAND, CALIFORNIA


FIGURE

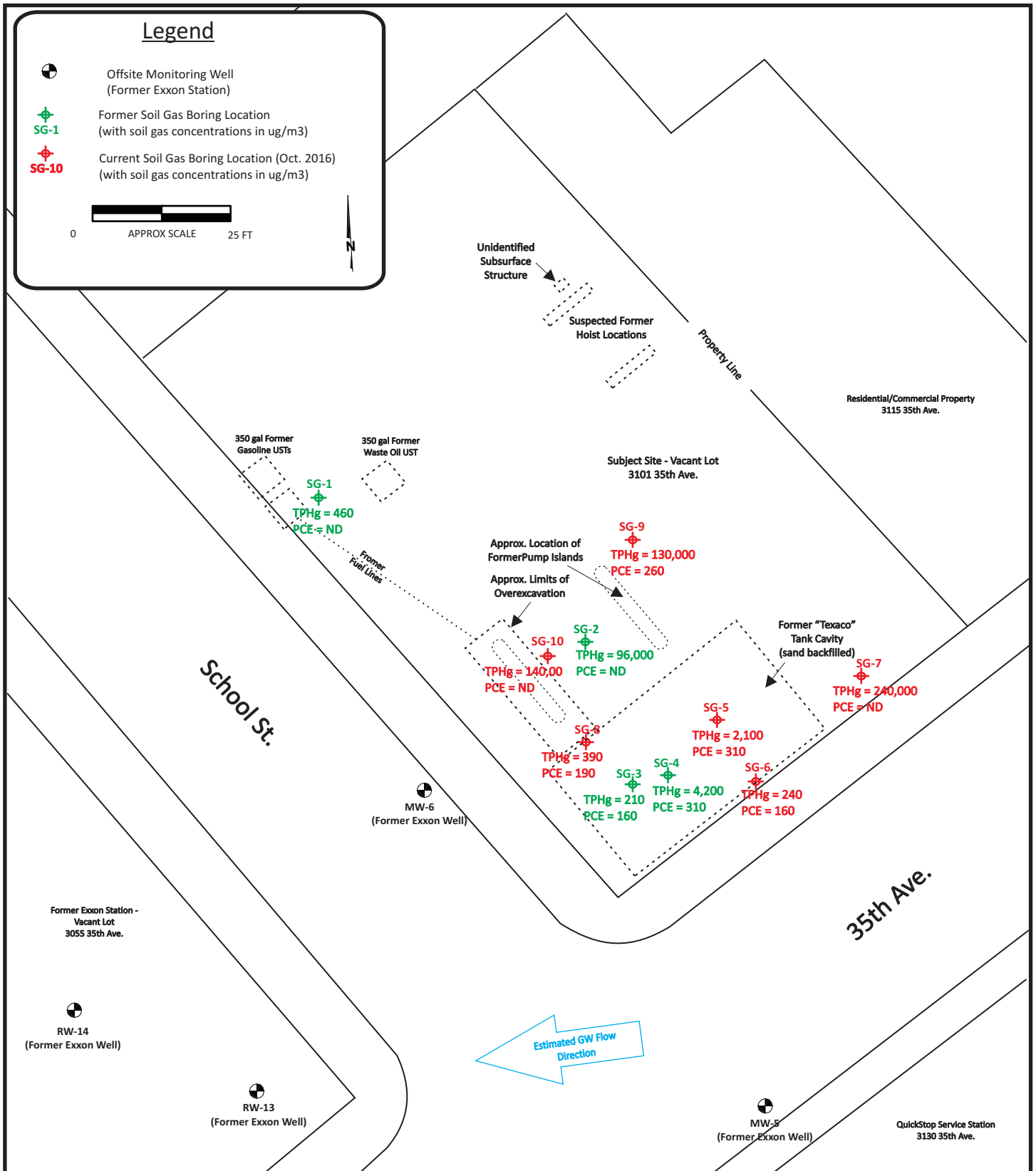
SITE MAP SHOWING CURRENT AND  
HISTORICAL SAMPLING LOCATIONS

4

**Legend**

-  Offsite Monitoring Well (Former Exxon Station)
-  Former Soil Gas Boring Location (with soil gas concentrations in ug/m3)
-  Current Soil Gas Boring Location (Oct. 2016) (with soil gas concentrations in ug/m3)

0  25 FT  
APPROX SCALE






3101 35th AVENUE  
OAKLAND, CALIFORNIA

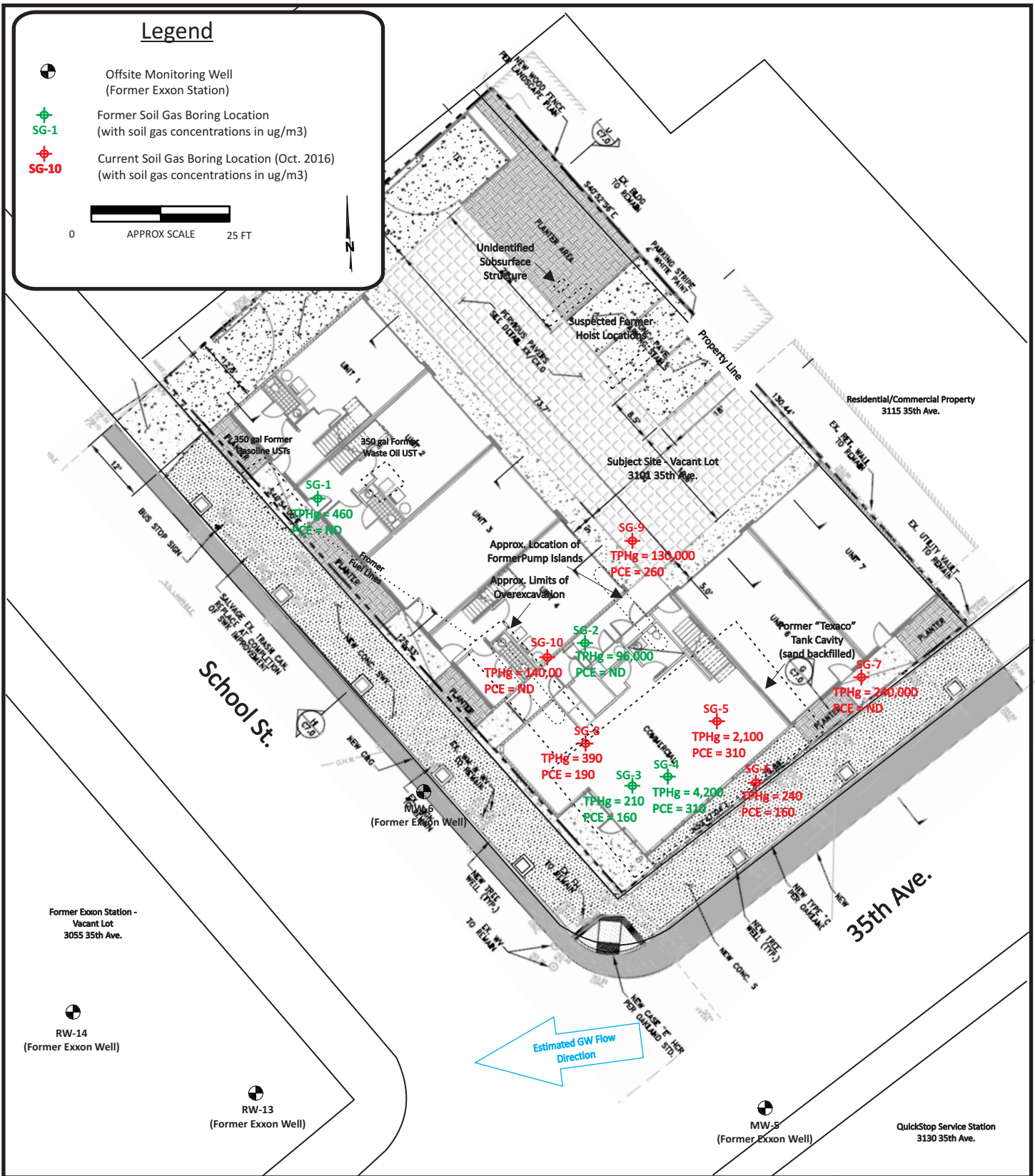
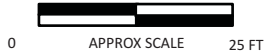
SITE MAP SHOWING CURRENT AND  
HISTORICAL SOIL GAS SAMPLING RESULTS

FIGURE

5

**Legend**

-  Offsite Monitoring Well (Former Exxon Station)
-  Former Soil Gas Boring Location (with soil gas concentrations in ug/m3)
-  Current Soil Gas Boring Location (Oct. 2016) (with soil gas concentrations in ug/m3)



3101 35th AVENUE  
OAKLAND, CALIFORNIA

FIGURE

SITE MAP SHOWING SOIL GAS  
SAMPLING RESULTS AND PROPOSED  
NEW CONSTRUCTION FLOOR PLAN

6

## TABLES

**TABLE 1A**  
**SUMMARY OF CURRENT AND HISTORICAL SOIL ANALYTICAL DATA - Hydrocarbons and VOCs**  
**3101 35th Avenue**  
**Oakland, California**

Sample ID	Sample Depth (ft.)	Sample Date	TPHg (mg/Kg)	TPHd (mg/Kg)	TPHmo (mg/Kg)	B (mg/Kg)	T (mg/Kg)	E (mg/Kg)	X (mg/Kg)	MtBE (mg/Kg)	Naph. (mg/Kg)	TBA (mg/Kg)	Other VOCs (mg/Kg)
WO d 7.5'	7.5	01/27/15	ND<0.25	ND<1.0	ND<1.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	---	All ND
T1 d 9'	9.0	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
T2 d 9'	9.0	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Disp. SW d 3'	3.0	01/27/15	<b>230</b>	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Disp. NW d 3'	3.0	01/27/15	<b>850</b>	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Disp. SE d 3.5'	3.5	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Disp. NE d 3'	3.0	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
SW TP d 9.5'	9.5	01/27/15	<b>180</b>	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Dispenser SP	stopckpile	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
Main TP SP	Stockpile	01/27/15	ND<0.25	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	---	---	All ND
WO SP	Stockpile	01/27/15	<b>32</b>	<b>84</b>	<b>360</b>	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	<b>0.71</b>	---	All ND
Disp.Ad5'	5.0	04/16/15	<b>46</b>	---	---	ND<0.005	ND<0.005	ND<0.005	<b>0.069</b>	ND<0.05	---	---	---
Disp.Bd4'	4.0	04/16/15	<b>1.1</b>	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.050	ND<0.05	---	---	---
Disp.Cd5'	5.0	04/16/15	<b>77</b>	---	---	ND<0.001	ND<0.001	<b>0.17</b>	<b>0.22</b>	ND<0.10	---	---	---
Disp.Dd5'	5.0	04/16/15	<b>110</b>	---	---	ND<0.05	<b>0.21</b>	<b>0.87</b>	<b>0.16</b>	ND<0.05	---	---	---
Disp.Ed5'	5.0	04/16/15	<b>21</b>	---	---	ND<0.05	<b>0.031</b>	<b>0.012</b>	<b>0.16</b>	ND<0.05	---	---	---
Disp.Fd5'	5.0	04/16/15	<b>68</b>	---	---	ND<0.05	ND<0.005	ND<0.005	<b>0.035</b>	ND<0.05	---	---	---
Disp.Gd4'	4.0	04/16/15	ND<1.0	---	---	ND<0.05	ND<0.005	ND<0.005	ND<0.050	ND<0.05	---	---	---
Disp.Hd4'	4.0	04/16/15	<b>68</b>	---	---	ND<0.05	<b>0.34</b>	ND<0.050	<b>0.093</b>	ND<0.05	---	---	---
ESL Residential			<b>770</b>	<b>240</b>	<b>11,000</b>	<b>0.250</b>	<b>1,000</b>	<b>5.5</b>	<b>600</b>	<b>44</b>	<b>1.9</b>	---	<b>varies</b>
LTCP Residential (0' to 5')			---	---	---	<b>1.9</b>	---	<b>21.0</b>	---	---	<b>9.7</b>	---	<b>varies</b>
LTCP Residential (5' to 10')			---	---	---	<b>2.8</b>	---	<b>32.0</b>	---	---	<b>9.7</b>	---	<b>varies</b>

Continued.

**TABLE 1A**  
**SUMMARY OF CURRENT AND HISTORICAL SOIL ANALYTICAL DATA - Hydrocarbons and VOCs**  
**3101 35th Avenue**  
**Oakland, California**

Sample ID	Sample Depth (ft.)	Sample Date	TPHg	TPHd	TPHmo	B	T	E	X	MtBE	Naphth.	TBA	Other VOCs
			(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
DP-1d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-1d10.0	10.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-1d15.0	15.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-3d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-3d10.0	10.0	11/02/15	12	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-3d20.0	20.0	11/02/15	0.73	---	---	0.0023	0.013	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-3d30.0	30.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d10.0	10.0	11/02/15	6.1	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d15.0	15.0	11/02/15	0.30	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d20.0	20.0	11/02/15	18	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
DP-5d30.0	30.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
SG-1d5.0	5.0	11/02/15	0.065	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
SG-2d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
SG-3d5.0	5.0	11/02/15	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	---
ESL Residential			770	240	11,000	0.250	1,000	5.5	600	44	1.9	---	varies
LTCP Residential (0' to 5')			---	---	---	1.9	---	21.0	---	---	9.7	---	varies
LTCP Residential (5' to 10')			---	---	---	2.8	---	32.0	---	---	9.7	---	varies

Continued.

**TABLE 1A**  
**SUMMARY OF CURRENT AND HISTORICAL SOIL ANALYTICAL DATA - Hydrocarbons and VOCs**  
**3101 35th Avenue**  
**Oakland, California**

Sample ID	Sample Depth (ft.)	Sample Date	TPHg (mg/Kg)	TPHd (mg/Kg)	TPHmo (mg/Kg)	B (mg/Kg)	T (mg/Kg)	E (mg/Kg)	X (mg/Kg)	MtBE (mg/Kg)	Naphth. (mg/Kg)	TBA (mg/Kg)	Other VOCs (mg/Kg)
SG-4d5.0	5.0	05/31/16	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-6d5.0	5.0	05/31/16	ND<0.20	ND<10.0	<b>42</b>	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-6d10.0	10.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-7d5.0	5.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-7d10.0	10.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-8d5.0	5.0	05/31/16	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-8d10.0	10.0	05/31/16	ND<0.20	---	---	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-9d5.0	5.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-9d8.0	8.0	05/31/16	<b>3.2</b>	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND <sup>1</sup>
DP-9d15.0	15.0	05/31/16	<b>1.0</b>	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-10d5.0	5.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
DP-10d10.0	10.0	05/31/16	ND<0.20	ND<10.0	ND<20.0	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.050	All ND
<b>ESL Residential</b>			<b>770</b>	<b>240</b>	<b>11,000</b>	<b>0.250</b>	<b>1,000</b>	<b>5.5</b>	<b>600</b>	<b>44</b>	<b>1.9</b>	---	<b>varies</b>
<b>LTCP Residential (0' to 5')</b>			---	---	---	<b>1.9</b>	---	<b>21.0</b>	---	---	<b>9.7</b>	---	<b>varies</b>
<b>LTCP Residential (5' to 10')</b>			---	---	---	<b>2.8</b>	---	<b>32.0</b>	---	---	<b>9.7</b>	---	<b>varies</b>

**Notes:**

11/25/14 & 4/16/15 samples collected by ERS

1 = n-Butylbenzene @ 0.022 mg/Kg & sec-Butylbenzen @ 0.0096mg/Kg

--- = Parameter not analyzed

<0.5 / ND = Not present at or above practical laboratory detection limit

mg/Kg = micrograms per kilogram = parts per million = ppm

ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table S-1: Res. Shallow Soil Exposure)

LTCP = Low Threat Closure Policy - Table 1: Concentrations of Petroleum Constituents in soil

that will have no significant risk of adversely affecting human health

TPHg = Total Petroleum Hydrocarbons as gasoline

TPHd = Total Petroleum Hydrocarbons as diesel

TPHmo = Total Petroleum Hydrocarbons as motor oil

B = Benzene

MtBE = Methyl-t-butyl ether

**Bolded Value** =detected concentration

T = Toluene

TBA = tert Butyl Alcohol

**Shaded Value** = concentration exceeds either ESL or LTCP value

E = Ethylbenzene

X = Total Xylenes

**TABLE 1B**  
**SUMMARY OF CURRENT AND HISTORICAL SOIL ANALYTICAL DATA - PAHs**  
**3101 35th Avenue**  
**Oakland, California**

Sample ID	WO d 7.5'	WO SP	DP-6d5.0	DP-6d10.0	DP-7d5.0	DP-7d10.0	LTCP Res.	LTCP Res.	Res.
Sample Depth	7.5 ft bgs	Stockpile	5.0 ft bgs	10 ft bgs	5.0 ft bgs	10 ft bgs	0 to 5 ft bgs	5 to 10 ft bgs	ESL
Sample Date	01/27/15	01/27/15	05/31/16	05/31/16	05/31/16	05/31/16	(mg/Kg)	(mg/Kg)	(mg/Kg)
Units	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
Acenaphthene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	16
Acenaphthylene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	13
Anthracene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	2.8
Benzo[a]anthracene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.7
Benzo[b]fluoranthene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.7
Benzo[k]fluoranthene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	2.6
Benzo[a]pyrene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.07
Benzo[g,h,i]perylene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	2.5
Chrysene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	3.8
Dibenzo[a,h]anthracene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.07
Fluoranthene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	60
Fluorene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	8.9
Indeno[1,2,3-cd]pyrene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.7
1-Methylnaphthalene	ND<0.010	<b>0.66</b>	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	NA
2-Methylnaphthalene	ND<0.010	<b>1.2</b>	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	0.25
Napthalene	ND<0.010	<b>0.71</b>	ND<0.10	ND<0.10	ND<0.10	ND<0.10	9.7	9.7	1.2
Phenanthrene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	11
Pyrene	ND<0.010	ND<0.010	ND<0.10	ND<0.10	ND<0.10	ND<0.10	0.063	NA	85

**Notes:**

--- = Parameter not analyzed  
 <0.5 / ND = Not present at or above reporting detection limit  
 mg/Kg = micrograms per kilogram = parts per million = ppm  
 ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table S-1: Res. Shallow Soil Exposure)  
**Bolded Value** =detected concentration  
**Shaded Value** = concentration exceeds either ESL or LTCP value  
 PAH = polynuclear aromatic hydrocarbons



**TABLE 1C**  
**SUMMARY OF CURRENT AND HISTORICAL SOIL ANALYTICAL DATA - Metals**  
**3101 35th Avenue**  
**Oakland, California**

Sample ID	Sample Depth (ft)	Sample Date	Sb (mg/Kg)	As (mg/Kg)	Ba (mg/Kg)	Be (mg/Kg)	Cd (mg/Kg)	Cr (mg/Kg)	Co (mg/Kg)	Cu (mg/Kg)	Pb (mg/Kg)	Hg (mg/Kg)	Mo (mg/Kg)	Ni (mg/Kg)	Se (mg/Kg)	Ag (mg/Kg)	Tl (mg/Kg)	V (mg/Kg)	Zn (mg/Kg)
WO d 7.5'	7.5	01/27/15	---	---	---	---	ND<0.25	46	---	---	6.9	---	---	100	---	---	---	---	120
T1 d 9'	9.0	01/27/15	---	---	---	---	---	---	---	---	6.5	---	---	---	---	---	---	---	---
T2 d 9'	9.0	01/27/15	---	---	---	---	---	---	---	---	9.7	---	---	---	---	---	---	---	---
Disp. SW	3.0	01/27/15	---	---	---	---	---	---	---	---	25	---	---	---	---	---	---	---	---
Disp. NW	3.0	01/27/15	---	---	---	---	---	---	---	---	35	---	---	---	---	---	---	---	---
Disp. SE d	3.5	01/27/15	---	---	---	---	---	---	---	---	13	---	---	---	---	---	---	---	---
Disp. NE d	3.0	01/27/15	---	---	---	---	---	---	---	---	8.3	---	---	---	---	---	---	---	---
SW TP d	9.5	01/27/15	---	---	---	---	---	---	---	---	18	---	---	---	---	---	---	---	---
Dispenser	stopckpile	01/27/15	---	---	---	---	---	---	---	---	170	---	---	---	---	---	---	---	---
Main TP	Stockpile	01/27/15	---	---	---	---	---	---	---	---	43	---	---	---	---	---	---	---	---
WO SP	Stockpile	01/27/15	---	---	---	---	0.32	52	---	---	65	---	---	80	---	---	---	---	160
DP-6d5.0	5.0	05/31/16	ND<4.4	5.3	160	0.43	ND<0.44	54	10	78	6.7	0.099	0.52	67	ND<4.4	0.3	ND<4.4	52	92
DP-6d10.0	10.0	05/31/16	ND<5.0	9.1	240	0.45	ND<0.50	51	15	81	8.2	0.19	0.26	72	ND<5.0	0.35	ND<5.0	70	100
DP-7d5.0	5.0	05/31/16	ND<5.0	10	220	0.4	ND<0.50	54	17	67	11	0.082	0.35	91	ND<5.0	0.3	ND<5.0	62	99
DP-7d10.0	10	05/31/16	ND<5.0	7.7	220	0.4	ND<0.50	57	17	83	8.1	0.16	0.35	70	ND<5.0	0.31	ND<5.0	74	110
ESL Residential			31	0.067	15,000	0.083	0.014	NA	0.23	3100	80	13	390	820	390	6900	0.78	140,000	23,000
TTLc			500	500	10,000	75	100	500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000

**Notes:**  
Sb = Antimony                      Cr = Chromium (total)                      Mo = Molybdenum                      V = Vanadium  
As = Arsenic                        Co = Cobalt    Ni = Nickel                                      Z = Zinc  
Ba = Barium                         Cu = Copper                                        Se = Selenium                                Bolded Value = a detected concentration  
Be = Beryllium                      Pb = Lead    Ag = Silver                                      Shaded Value = concentration detected above corresponding TTLc  
Ca = Cadmium                       Hg = Mercury                                      Tl = Thallium

<0.5 / ND = Not present at or above reporting detection limit  
mg/Kg = milligrams per kilogram = parts per million = ppm  
ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table S-1: Res. Shallow Soil Exposure)  
TTLc = Total Threshold Limit Concentration

**TABLE 2**  
**SUMMARY OF CURRENT AND HISTORICAL GROUNDWATER ANALYTICAL DATA**  
**3101 35th Avenue**  
**Oakland, California**

Sample ID	Sample Date	TPHg (ug/L)	TPHd (ug/L)	TPHmo (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MtBE (ug/L)	Naphth. (ug/L)	TBA (ug/L)	PCE (ug/L)	Other VOCs (ug/L)	Metals* (ug/L)
DP-1	11/03/15	ND<50	---	---	ND<0.50	<b>0.11</b>	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<10	---	---	---
DP-3	11/03/15	<b>1,000</b>	---	---	<b>19</b>	<b>1.1</b>	<b>34</b>	<b>5.1</b>	ND<0.50	<b>7.2</b>	ND<10	---	---	---
DP-5	11/03/15	<b>3,700</b>	---	---	<b>2.2</b>	<b>1.5</b>	<b>1.4</b>	<b>5.5</b>	ND<0.50	<b>2.6</b>	ND<10	---	---	---
DP-6	06/01/16	ND<50	ND<200	<b>500</b>	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	---	ND<0.50	All ND	All ND
DP-8	06/01/16	<b>57</b>	---	---	<b>3.3</b>	ND<0.50	<b>1.9</b>	ND<1.0	ND<0.50	ND<0.50	---	ND<0.50	All ND <sup>1</sup>	---
DP-9	06/01/16	<b>330</b>	---	---	<b>3.4</b>	ND<0.50	<b>2.5</b>	ND<1.0	ND<0.50	ND<0.50	---	ND<0.50	All ND <sup>2</sup>	---
DP-10	06/01/16	ND<50	---	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	---	ND<0.50	All ND	---
<b>Tier 1 ESL</b>		<b>100</b>	<b>100</b>	<b>50,000</b>	<b>1.0</b>	<b>40</b>	<b>13</b>	<b>20</b>	<b>5.0</b>	<b>0.12</b>	<b>12.0</b>	<b>3.0</b>	<b>varies</b>	<b>varies</b>

**Notes:**

All samples collected as "grab" groundwater samples

--- = Parameter not analyzed

<0.5 / ND = Not present at or above laboratory practical quantitation limit

ug/L = micrograms per Liter = parts per billion = ppb

Tier 1 ESL = RWQCB Environmental Screening Level (February 2016)

LTCP = Low Threat Closure Policy - Table 1: Concentrations of Petroleum Constituents in soil that will have no significant risk of adversely affecting human health

TPHg = Total Petroleum Hydrocarbons as gasoline

TPHd = Total Petroleum Hydrocarbons as diesel

TPHmo = Total Petroleum Hydrocarbons as motor oil

B = Benzene                      Naphth. = Naphthalene

T = Toluene                      MtBE = Methyl-t-butyl ether

E = Ethylbenzene              TBA = tert Butyl Alcohol

X = Total Xylenes              PCE = tetrachloroethene

1 = Isopropylbenzene @ 0.70 ug/L & n-Propylbenzene @ 1.2 ug/L

2 = n-Butylbenzene & sec-Butylbenzene @ 1.0 ug/L, & Isopropylbenzene = 2.2 ug/L

n-Propylbenzene = 3.4 ug/L & 1,3,5-Trimethylbenzene = 2.0 ug/L

Metals\* = Cd, Cr, Pb, Ni, & Zn

**Bolded Value** =detected concentration

**Shaded Value** = concentration exceeds either ESL or LTCP value

**TABLE 3**  
**SUMMARY OF CURRENT AND HISTORICAL SOIL VAPOR ANALYTICAL DATA**  
**3101 35th Ave.**  
**Oakland, California**

SAMPLE ID	Sample Depth (ft.)	Sample Date	Oxygen (O <sub>2</sub> )	Helium	TPHg (C6-C12)	Tetrahydrofuran	Carbon Disulfide	n-Hexane	Chloroform	Benzene	Toluene	Ethylbenzene	Xylenes (total)	Isopropanol	PCE	Naphthalene	Other VOCs
			Mol%	Mol%	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )	(µg/m <sup>3</sup> )
SG-1	5.0	11/09/15	2.6	ND<0.47	460	80	47	ND<2.3	16	10	28	ND<2.3	ND<2.3	ND<2.3	ND<2.3	ND<2.3	<MDL
SG-2	5.0	11/09/15	4.1	ND<0.45	96,000	190	140	70	ND<14	61	91	ND<14	74	ND<14	ND<14	ND<14	<MDL <sup>1</sup>
SG-3	5.0	11/09/15	15	ND<0.19	210	22	12	ND<0.97	ND<0.97	3.3	7.8	ND<0.97	ND<0.97	ND<0.97	160	ND<3.9	<MDL
SG-4	5.0	06/01/16	17	ND<0.21	4,200	9.2	ND<3.3	130	ND<5.1	ND<3.4	4.4	ND<4.8	ND<4.6	ND<10	310	ND<22	<MDL <sup>2</sup>
SG-5	5.0	10/10/16	16	ND<0.20	2,100	20	ND<3.1	24	11	6.8	11	ND<4.3	7.6	ND<9.8	310	ND<21	<MDL <sup>3</sup>
SG-6	5.0	10/10/16	17	ND<0.19	240	12	ND<3.0	ND<3.5	ND<4.7	ND<3.1	4.1	ND<4.2	ND<8.4	ND<9.4	160	ND<20	<MDL
SG-7	5.0	10/10/16	9.8	ND<0.19	240,000	67	91	ND<68	410	ND<62	290	ND<84	120	ND<190	ND<130	ND<410	<MDL
SG-8	5.0	10/10/16	17	ND<0.18	390	21	ND<2.8	ND<3.2	ND<4.4	ND<2.9	6.9	ND<4.1	ND<7.8	12	190	ND<19	<MDL
SG-9	5.0	10/10/16	6.5	ND<0.20	130,000	ND<58	ND<61	ND<69	140	ND<63	ND<74	ND<86	ND<172	ND<190	260	ND<410	<MDL
SG-10	5.0	10/10/16	5.9	ND<0.21	140,000	ND<62	110	ND<74	170	ND<67	ND<79	ND<91	ND<182	ND<210	ND<140	ND<440	<MDL
<b>Residential ESL</b>			NA	NA	300,000	NA	NA	NA	61	48	160,000	560	52,000	NA	240	41	Varies
<b>Comm/Ind ESL</b>			NA	NA	2,500,000	NA	NA	NA	530	420	1,300,000	4,900	440,000	NA	2,100	360	Varies
<b>Residential CHHSL</b>			NA	NA	NA	NA	NA	NA	NA	36.2	135,000	NA	319,000	NA	180	31.9	Varies
<b>Comm/Ind CHHSL</b>			NA	NA	NA	NA	NA	NA	NA	122	378,000	NA	887,000	NA	603	106	Varies
<b>LTCP w/Bioattenuation</b>			NA	NA	NA	NA	NA	NA	NA	85,000	NA	1,000,000	NA	NA	NA	93,000	Varies
<b>LTCP w/o Bioattenuation</b>			NA	NA	NA	NA	NA	NA	NA	85	NA	1,100	NA	NA	NA	93	Varies

**Notes:**

--- = Parameter not Sampled  
 NA = Not analyzed or Not established  
 <0.5 / ND = Not present at or above reporting detection limit  
 ug/m3 = micrograms per cubic meter = ppmv  
 ESLs = RWQCB Environmental Screening Levels - Feb. 2016 (Table SG-1: Vapor Intrusion: Human Health Risk Levels)  
 CHHSL = California Human Health Screening Level - January 2005  
 LTCP = Low Threat Closure Policy (Appendix 4 - Scenerio 4)  
**Bold** = detected concentration  
**Shaded Value** = concentration exceeds either ESL or LTCP value

<MDL<sup>1</sup> = 1,2,4-Trimethylbenzene at 73 ug/m3  
 <MDL<sup>2</sup> = Acetone at 73 ug/m3 & Cyclyhexane at 180 ug/m3 & n-heptane at 51 ug/m3  
 <MDL<sup>3</sup> = n-heptane at 8.9 ug/m3

## **APPENDIX A**

### **ACEH Email Approval**



Forrest Cook &lt;cook.forrest@gmail.com&gt;

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**Work Plan Approval- Fuel leak case RO3164 and GeoTracker Global ID T1000006539, Green Oak Builders, 3101 35th Ave., Oakland**

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**Nowell, Keith, Env. Health** <Keith.Nowell@acgov.org>

Mon, Oct 3, 2016 at 9:21 AM

To: Forrest Cook &lt;cook.forrest@gmail.com&gt;

Cc: Mona Hsieh &lt;mona.hsieh@yahoo.com&gt;, "patrickykong@gmail.com" &lt;patrickykong@gmail.com&gt;, "Roe, Dilan, Env. Health" &lt;Dilan.Roe@acgov.org&gt;, "Yoo, James" &lt;jamesy@acpwa.org&gt;

Forest,

Your Work Plan for advancing six (6) bores for the collection of soil vapor samples has been approved. Please perform the work at your earliest convenience and provide a copy of the laboratory analysis report as an electronic mail attachment for our review and discussion.

Thank you,

Keith Nowell

**From:** Forrest Cook [mailto:[cook.forrest@gmail.com](mailto:cook.forrest@gmail.com)]**Sent:** Friday, September 30, 2016 4:26 PM**To:** Nowell, Keith, Env. Health <[Keith.Nowell@acgov.org](mailto:Keith.Nowell@acgov.org)>; Roe, Dilan, Env. Health <[Dilan.Roe@acgov.org](mailto:Dilan.Roe@acgov.org)>; Mona Hsieh <[mona.hsieh@yahoo.com](mailto:mona.hsieh@yahoo.com)>; Patrick Kong <[patrickykong@gmail.com](mailto:patrickykong@gmail.com)>**Subject:** 3101 35th Ave - Soil Gas Sampling Proposal

Good Afternoon Keith,

Per our meeting on Wednesday regarding the Green Oak Builders site at 3101 35th Avenue in Oakland, Almar Environmental is proposing to install and sample a series of 6 additional soil vapor sampling points. The purpose of this investigation will be to further define the extent of soil vapor contamination identified in previous investigations.

The 6 proposed soil gas sampling points (SG-5 through SG-10) will be installed in the approximate locations shown on the attached Figure.

Each sample point will be installed and sampled following the same procedures outlined in Section 4.0 of Almar's previous "Soil, Groundwater, and Soil Gas Sampling Work Plan" dated March 24, 2016. A copy of that Work Plan can be found online at the following link:

[http://geotracker.waterboards.ca.gov/esi/uploads/geo\\_report/5869696915/T1000006539.PDF](http://geotracker.waterboards.ca.gov/esi/uploads/geo_report/5869696915/T1000006539.PDF)

It should be noted, however, that the borings for the soil gas sampling points will be installed with a hand auger rather than a direct-push geoprobe rig as outlined in the Work Plan.

If you have any questions, please do not hesitate to contact us.

Thank you,

Forrest Cook, PG  
Owner/Principal Scientist

**ALMAR ENVIRONMENTAL**

[831.420.7923](tel:831.420.7923)

407 Almar Avenue

Santa Cruz, CA 95060

[www.almarenvironmental.com](http://www.almarenvironmental.com)



## **APPENDIX B**

### **ACPWA Drilling Permit**

# Alameda County Public Works Agency - Water Resources Well Permit



Public Works Agency  
—Alameda County—

399 Elmhurst Street  
Hayward, CA 94544-1395  
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 10/04/2016 By jamesy

Permit Numbers: W2016-0731  
Permits Valid from 10/07/2016 to 10/07/2016

Application Id: 1475537252014  
Site Location: 3101 35th Avenue  
Project Start Date: 10/07/2016  
Assigned Inspector: Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org

City of Project Site:Oakland

Completion Date:10/07/2016

Applicant: Almar Environmental - Forrest Cook  
407 Almar Avenue, Santa Cruz, CA 95060  
Property Owner: Green Oak Builders, Inc.  
888 Brannan Street, #101, San Francisco, CA 94103  
Client: \*\* same as Property Owner \*\*

Phone: 831-420-7923

Phone: --

Receipt Number: WR2016-0496 Total Due: \$265.00  
Payer Name : Forrest Cook Total Amount Paid: \$265.00  
Paid By: VISA PAID IN FULL

## Works Requesting Permits:

Borehole(s) for Investigation-Vapor Sampling 24 to 48 hours only - 6 Boreholes  
Driller: Almar Environmental - Lic #: 0 - Method: Hand

Work Total: \$265.00

### Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0731	10/04/2016	01/05/2017	6	2.00 in.	5.50 ft

### Specific Work Permit Conditions

1. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
2. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.
4. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost and liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.



## Alameda County Public Works Agency - Water Resources Well Permit

5. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
6. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
7. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.
8. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.
9. NOTE:  
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.
10. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Temp Vapor wells shall not be converted to monitoring Vapor wells, without a separate permit application process.
11. Vapor monitoring wells constructed with tubing shall be decommissioned by complete removal of tubing, grout seal, and fill material of sand or bentonite. Fill material may be removed by hand auger if material can be removed completely.

Vapor monitoring wells constructed with pvc pipe less than 2" shall be overdrilled to total depth.

Vapor monitoring wells constructed with 2" pvc pipe or larger may be grouted by tremie pipe (any depth) or pressure grouted (less than 30', 25 psi for 5 min).

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## **APPENDIX C**

### **Boring Logs**

FIELD LOCATION OF BORING:

PROJECT: No. 10781 DATES DRILLED: 10/7/16

CLIENT: Neishi Bros. Nursery DRILLER: ERS (C-57 #589652)

SITE ADDRESS: 357 105th Ave., Oakland, CA LOGGED BY: Forrest Cook PG#8201

PAGE 1 OF 1

DRILLING METHOD AND EQUIPMENT: Geoprobe w/macro core sampler

WATER LEVEL		TIME	
1st Encountered	NA	Start	
Static	NA	Finish	

Depth (Feet)	Sample	Sample ID	Blow Count	PID (ppm)	Well Const.	Lithology	USCS	SOIL DESCRIPTION
1								2" Ashpalt plus baserock
2								FORMER TANK PIT - FILL - SAND (SM): Very dark grayish brown (10YR3/2), estimated slightly damp, estimated loose, sand is coarse.
3						SM		
4								
5								
6							BOH = 5.5'	
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

WELL / BORING CONSTRUCTION DETAILS:

Sampled and backfilled with neat cement (Portland I/II) on 10/10/16



3101 35th AVE.  
OAKLAND, CALIFORNIA

BORING LOG

BORING

SG-5

FIELD LOCATION OF BORING:

PROJECT: No. 10781 DATES DRILLED: 10/7/16

CLIENT: Neishi Bros. Nursery DRILLER: ERS (C-57 #589652)

SITE ADDRESS: 357 105th Ave., Oakland, CA LOGGED BY: Forrest Cook PG#8201

PAGE 1 OF 1

DRILLING METHOD AND EQUIPMENT: Geoprobe w/macro core sampler

WATER LEVEL		TIME	
Ist Encountered	NA	Start	
Static	NA	Finish	

Depth (Feet)	Sample	Sample ID	Blow Count	PID (ppm)	Well Const.	Lithology	USCS	SOIL DESCRIPTION
1								2" Concrete slab
2								FORMER TANK PIT - FILL - SAND (SM): Very dark grayish brown (10YR3/2), estimated slightly damp, estimated loose, sand is coarse.
3						SM		
4								
5								
6								
6								BOH = 5.5'
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

WELL / BORING CONSTRUCTION DETAILS:

Sampled and backfilled with neat cement (Portland I/II) on 10/10/16



3101 35th AVE.  
OAKLAND, CALIFORNIA

BORING LOG

BORING

SG-6

FIELD LOCATION OF BORING:

PROJECT: No. 10781 DATES DRILLED: 10/7/16

CLIENT: Neishi Bros. Nursery DRILLER: ERS (C-57 #589652)

SITE ADDRESS: 357 105th Ave., Oakland, CA LOGGED BY: Forrest Cook PG#8201

PAGE 1 OF 1

DRILLING METHOD AND EQUIPMENT: Geoprobe w/macro core sampler

WATER LEVEL		TIME	
1st Encountered	NA	Start	
Static	NA	Finish	

Depth (Feet)	Sample	Sample ID	Blow Count	PID (ppm)	Well Const.	Lithology	USCS	SOIL DESCRIPTION
1								1" Asphalt plus baserock
2							CL	SILTY CLAY (CL): Black (10YR2/1), estimated slightly damp, estimated firm, estimated low to medium plasticity.
3								
4								
5								
6								
6								BOH = 5.5'
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

WELL / BORING CONSTRUCTION DETAILS:

Sampled and backfilled with neat cement (Portland I/II) on 10/10/16



3101 35th AVE.  
OAKLAND, CALIFORNIA

BORING LOG

BORING

SG-7

FIELD LOCATION OF BORING:

PROJECT: No. 10781 DATES DRILLED: 10/7/16

CLIENT: Neishi Bros. Nursery DRILLER: ERS (C-57 #589652)

SITE ADDRESS: 357 105th Ave., Oakland, CA LOGGED BY: Forrest Cook PG#8201

PAGE 1 OF 1

DRILLING METHOD AND EQUIPMENT: Geoprobe w/macro core sampler

WATER LEVEL		TIME	
1st Encountered	NA	Start	
Static	NA	Finish	

Depth (Feet)	Sample	Sample ID	Blow Count	PID (ppm)	Well Const.	Lithology	USCS	SOIL DESCRIPTION
1								2" Concrete slab
2								FORMER TANK PIT - FILL - SAND (SM): Very dark grayish brown (10YR3/2), estimated slightly damp, estimated loose, sand is coarse.
3						SM		
4								
5								
6							BOH = 5.5'	
7								
8								
9								
10								
11								
12								
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14								
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22								
23								
24								
25								

WELL / BORING CONSTRUCTION DETAILS:

Sampled and backfilled with neat cement (Portland I/II) on 10/10/16



3101 35th AVE.  
OAKLAND, CALIFORNIA

BORING LOG

BORING

SG-8

FIELD LOCATION OF BORING:

PROJECT: No. 10781 DATES DRILLED: 10/7/16

CLIENT: Neishi Bros. Nursery DRILLER: ERS (C-57 #589652)

SITE ADDRESS: 357 105th Ave., Oakland, CA LOGGED BY: Forrest Cook PG#8201

PAGE 1 OF 1

DRILLING METHOD AND EQUIPMENT: Geoprobe w/macro core sampler

WATER LEVEL		TIME	
1st Encountered	NA	Start	
Static	NA	Finish	

Depth (Feet)	Sample	Sample ID	Blow Count	PID (ppm)	Well Const.	Lithology	USCS	SOIL DESCRIPTION
1								1" Asphalt plus baserock
2								CL GRAVELLY CLAY (CL): Very dark grayish brown (10YR3/2), estimated slightly damp, estimated hard, estimated low plasticity.
3								
4								
5								
6								
6								BOH = 5.5'
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

WELL / BORING CONSTRUCTION DETAILS:

Sampled and backfilled with neat cement (Portland I/II) on 10/10/16



3101 35th AVE.  
OAKLAND, CALIFORNIA

BORING LOG

BORING

SG-9

## **APPENDIX D**

### **Soil Gas Purge Data Sheets**





# Soil Vapor Well Purging and Sampling Form

Well No.

SG-5

Project Name	Green Oak Bldgs.	Project No.	1078	Date	10-10-16
Project Address, City, County	3101 35th Ave, Oakland, CA				

**PURGING AND SAMPLING INSTRUMENTATION AND METHOD**

Water Level Meter (Model/ID)	-	Interface probe (Model/ID)	
Water Quality Meter (Model/ID)	-	Decontamination Method	
Purging Method(s)	<input checked="" type="checkbox"/> Summa	<input type="checkbox"/> Vacuum Truck	<input type="checkbox"/> Submersible Pump <input type="checkbox"/> Other
Sampling Method(s)	<input checked="" type="checkbox"/> Summa Canister	<input type="checkbox"/> Disposal Bailer	<input type="checkbox"/> Other

**BOREHOLE AND WELL CASING VOLUME INFORMATION**

Borehole Diameter (Circle)	<u>2"</u> 6" 8"	Casing Diameter (Circle)	<u>3 1/8"</u>
		Casing Multiplier (CM) (mL/foot)	<u>3.42</u>

**MONITORING MEASUREMENTS**

**PURGING CALCULATORS**

Depth to Free Product (feet)	-	Casing Volume (CV)	
Depth to Water (DTW) (feet)	-	WD x CM	CV (mL) x 3.0 CV (mL)
Total Well Depth (WD) (feet)	<u>5.0</u>	<u>purge = 150 mL/min</u>	
Water Column (WC) (feet)	-		
Free Product Thickness (feet)	-	Free Product Purged (gal)	

**PURGING DATA**

Time (24 hr)	10:10	10:11	10:17	10:18	10:19
mL Purged	<u>0</u>	<u>150</u>	<u>300</u>	<u>450</u>	<u>600</u>
He % in shroud	<u>27.5</u>	<u>29.1</u>	<u>28.2</u>	<u>24.7</u>	<u>21.0</u>
He % out	<u>00.5</u>	<u>00.3</u>	<u>00.2</u>	<u>00.2</u>	<u>00.2</u>
Sample Time	<u>10:14</u>	<u>10:16</u>	<u>10:18</u>	<u>10:20</u>	<u>10:22</u>
He % in shroud	<u>21.0</u>	<u>26.3</u>	<u>23.4</u>	<u>20.9</u>	<u>18.5</u>
Hg "	<u>-25</u>	<u>-28</u>	<u>-15</u>	<u>-10</u>	<u>-5</u>
Other	<u>-20</u>				
Other	<u>-18</u>				

Sample Time 10:22  
canister # 334  
manifold # A00264

**SAMPLING DATA**

Sample ID	Time	Quantity	Volume	Type	Filtered	Preserved	Analysis

**FIELD PERSONNEL**

Field Technician Representative(s):	F. Cook	Subcontractor:	
Signature		Date:	



# Soil Vapor Well Purging and Sampling Form

Well No.

SG-6

Project Name <i>Green Oak Bluffs.</i>	Project No. <i>1078</i>	Date <i>10-10-16</i>
Project Address, City, County <i>7121 35<sup>th</sup> Ave, Oakland, CA</i>		

### PURGING AND SAMPLING INSTRUMENTATION AND METHOD

Water Level Meter (Model/ID) <i>-</i>	Interface probe (Model/ID) <i>-</i>
Water Quality Meter (Model/ID) <i>-</i>	Decontamination Method <i>-</i>
Purging Method(s) <input checked="" type="checkbox"/> Summa	<input type="checkbox"/> Vacuum Truck <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Other
Sampling Method(s) <input checked="" type="checkbox"/> Summa Canister	<input type="checkbox"/> Disposal Bailer <input type="checkbox"/> Other

### BOREHOLE AND WELL CASING VOLUME INFORMATION

Borehole Diameter (Circle) <i>2"</i> 6" 8"	Casing Diameter (Circle) <i>3/16"</i>
	Casing Multiplier (CM) (mL/foot) <i>5.42</i>

### MONITORING MEASUREMENTS

Depth to Free Product (feet) <i>-</i>
Depth to Water (DTW) (feet) <i>-</i>
Total Well Depth (WD) (feet) <i>5'</i>
Water Column (WC) (feet) <i>-</i>
Free Product Thickness (feet) <i>-</i>

### PURGING CALCULATORS

Casing Volume (CV)
<input type="checkbox"/> WD x CM <input type="checkbox"/> CV (mL) x 3.0 CV (mL)
<i>purge = 150 mL/Min</i>
Free Product Purged (gal)

### PURGING DATA

Time (24 hr)	<i>10:40</i>	<i>10:41</i>	<i>10:42</i>	<i>10:43</i>	<i>10:44</i>	<i>10:45</i>		
mL Purged	<i>0</i>	<i>150</i>	<i>300</i>	<i>450</i>	<i>600</i>	<i>750</i>		
He % in shroud	<i>31.2</i>	<i>31.5</i>	<i>28.6</i>	<i>23.6</i>	<i>20.3</i>	<i>28.4</i>		
He % out	<i>00.5</i>	<i>00.4</i>	<i>00.4</i>	<i>00.4</i>	<i>00.4</i>	<i>00.4</i>		
Sample Time	<i>10:45</i>	<i>10:46</i>	<i>10:47</i>	<i>10:48</i>	<i>10:49</i>	<i>10:50</i>		
He % in shroud	<i>28.4</i>	<i>25.3</i>	<i>21.7</i>	<i>19.6</i>		<i>18.1</i>		
Hg "	<i>-27</i>	<i>-25</i>	<i>-20</i>	<i>-15</i>	<i>-10</i>	<i>-5</i>		
Other <i>purge det</i>	<i>-16</i>							
Other <i>end</i>	<i>-13</i>							

Sample Time *10:50*  
 canister *246*  
 men. lidd # *A00150*

### SAMPLING DATA

Sample ID	Time	Quantity	Volume	Type	Filtered	Preserved	Analysis

### FIELD PERSONNEL

Field Technician Representative(s):	Subcontractor:
Signature	Date:



# Soil Vapor Well Purging and Sampling Form

Well No.

SG-7

Project Name <i>Green Oak Bluffs</i>	Project No. <i>1078</i>	Date <i>10-10-16</i>
Project Address, City, County <i>3101 35th Ave, Oakland, CA</i>		

**PURGING AND SAMPLING INSTRUMENTATION AND METHOD**

Water Level Meter (Model/ID) <i>-</i>	Interface probe (Model/ID)
Water Quality Meter (Model/ID) <i>-</i>	Decontamination Method
Purging Method(s) <input checked="" type="checkbox"/> Summa <input type="checkbox"/> Vacuum Truck <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Other	
Sampling Method(s) <input checked="" type="checkbox"/> Summa Canister <input type="checkbox"/> Disposal Bailer <input type="checkbox"/> Other	

**BOREHOLE AND WELL CASING VOLUME INFORMATION**

Borehole Diameter (Circle) <i>2</i> 6" 8"	Casing Diameter (Circle) <i>3/16"</i>
	Casing Multiplier (CM) (mL/foot) <i>5.42</i>

**MONITORING MEASUREMENTS**

**PURGING CALCULATORS**

Depth to Free Product (feet) <i>-</i>	Casing Volume (CV)
Depth to Water (DTW) (feet) <i>-</i>	WD x CM CV (mL) x 3.0 CV (mL)
Total Well Depth (WD) (feet) <i>115'</i>	<i>purge = 150 mL/min</i>
Water Column (WC) (feet) <i>-</i>	
Free Product Thickness (feet) <i>-</i>	Free Product Purged (gal)

**PURGING DATA**

Time (24 hr)	11:10	11:11	11:12	11:13	11:14
mL Purged	<del>0</del>	150	300	450	600
He % in shroud	33.3	34.2	31.4	28.2	25.0
He % out	00.7	00.7	00.7	00.7	00.7
Sample Time	11:14	11:17	11:19	11:21	11:23
He % in shroud	23.7	15.9	26.4	21.7	19.1
Hg "	-25	-20	-15	-10	-5
Other	-13				
Other	-9				

*Sample Time 11:23  
canister # 154  
manifold # A0026*

**SAMPLING DATA**

Sample ID	Time	Quantity	Volume	Type	Filtered	Preserved	Analysis

**FIELD PERSONNEL**

Field Technician Representative(s):	Subcontractor:
Signature <i>[Signature]</i>	Date:



## Soil Vapor Well Purging and Sampling Form

Well No.

SG-8

Project Name <i>Green Oak Bluffs</i>	Project No. <i>1078</i>	Date <i>10-10-16</i>
Project Address, City, County		

**PURGING AND SAMPLING INSTRUMENTATION AND METHOD**

Water Level Meter (Model/ID)	Interface probe (Model/ID)
Water Quality Meter (Model/ID)	Decontamination Method
Purging Method(s) _____ Summa _____ Vacuum Truck _____ Submersible Pump _____ Other _____	
Sampling Method(s) _____ Summa Canister _____ Disposal Bailer _____ Other _____	

**BOREHOLE AND WELL CASING VOLUME INFORMATION**

Borehole Diameter (Circle)      2"      6"      8"	Casing Diameter (Circle)      3/16"
	Casing Multiplier (CM) (mL/foot)      5.42

**MONITORING MEASUREMENTS**

**PURGING CALCULATORS**

Depth to Free Product (feet)	Casing Volume (CV)
Depth to Water (DTW) (feet)	_____ WD x CM      _____ CV (mL) x 3.0 CV (mL) _____
Total Well Depth (WD) (feet)	<i>purge = 150 m/min</i>
Water Column (WC) (feet)	
Free Product Thickness (feet)	Free Product Purged (gal)

**PURGING DATA**

Time (24 hr)	9:44	9:45	9:46	9:47	9:48			
mL Purged	<i>0</i>	<i>150</i>	<i>300</i>	<i>450</i>	<i>600</i>			
He % in shroud	<i>27.2'</i>	<i>29.0</i>	<i>27.4</i>	<i>26.7</i>	<i>26.0</i>			
He % out	<i>00.3</i>	<i>00.2</i>	<i>00.4</i>	<i>00.4</i>	<i>00.4</i>			
Sample Time	<i>9:48</i>	<i>9:56</i>	<i>9:52</i>		<i>9:56</i>	<i>9:58</i>		
He % in shroud	<i>26.0</i>	<i>26.5</i>	<i>25.2</i>		<i>29.4</i>	<i>26.4</i>		
Hg "	<i>-30</i>	<i>-25</i>	<i>-20</i>	<i>-15</i>	<i>-10</i>	<i>-5</i>		
Other <i>purge start</i>	<i>-24'</i>							
Other <i>end</i>								
							<i>sample time = 9:58</i>	
							<i>canister # 121</i>	
							<i>meter field # A00259</i>	

**SAMPLING DATA**

Sample ID	Time	Quantity	Volume	Type	Filtered	Preserved	Analysis

**FIELD PERSONNEL**

Field Technician Representative(s): <i>F. Ceoli</i>	Subcontractor:
Signature <i>[Signature]</i>	Date:



# Soil Vapor Well Purging and Sampling Form

Well No.

SG-9

Project Name <i>Green Oak Dldrs.</i>	Project No. <i>1078</i>	Date <i>10-10-16</i>
Project Address, City, County <i>3101 35th Ave, Oakland, CA</i>		

### PURGING AND SAMPLING INSTRUMENTATION AND METHOD

Water Level Meter (Model/ID)	Interface probe (Model/ID)
Water Quality Meter (Model/ID)	Decontamination Method
Purging Method(s) <input checked="" type="checkbox"/> Summa <input type="checkbox"/> Vacuum Truck <input type="checkbox"/> Submersible Pump <input type="checkbox"/> Other	
Sampling Method(s) <input checked="" type="checkbox"/> Summa Canister <input type="checkbox"/> Disposal Bailer <input type="checkbox"/> Other	

### BOREHOLE AND WELL CASING VOLUME INFORMATION

Borehole Diameter (Circle) <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">2"</span> 6" 8"	Casing Diameter (Circle) <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">3/16"</span>
	Casing Multiplier (CM) (mL/foot) <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">5.42</span>

### MONITORING MEASUREMENTS

### PURGING CALCULATORS

Depth to Free Product (feet) <i>-</i>	Casing Volume (CV)
Depth to Water (DTW) (feet) <i>-</i>	WD x CM CV (mL) x 3.0 CV (mL)
Total Well Depth (WD) (feet) <i>5.0</i>	<i>Purge = 150 mL/min</i>
Water Column (WC) (feet) <i>-</i>	
Free Product Thickness (feet) <i>-</i>	Free Product Purged (gal)

### PURGING DATA

Time (24 hr)	8:35	8:36	8:37	8:38	8:39	8:40			
mL Purged	<del>2</del>	150	300	450	600	750			
He % in shroud	27.6	29.2	28.6	27.6	26.0	24.9			
He % out	00.6	-1.1	-1.3	-1.3	-1.3	-1.3			
Sample Time	8:40	8:41	8:43	8:46	8:48	8:50			
He % in shroud	24.9	23.0	22.3	27.5	25.5	22.9			
Hg "	-27	-25	-20	-15	-10	-5			
Other <i>purge stop</i>	<i>-29"</i>								
Other <i>end</i>									

*Sample Time 8:50*

*canister # 1703*

*msn: add # A00152*

### SAMPLING DATA

Sample ID	Time	Quantity	Volume	Type	Filtered	Preserved	Analysis

### FIELD PERSONNEL

Field Technician Representative(s): <i>F. Cook</i>	Subcontractor:
Signature <i>[Signature]</i>	Date:



# Soil Vapor Well Purging and Sampling Form

Well No.

SG-10

Project Name Green Oak Trl/cls. Project No. 1078 Date 10-10-16

Project Address, City, County \_\_\_\_\_

**PURGING AND SAMPLING INSTRUMENTATION AND METHOD**

Water Level Meter (Model/ID) - Interface probe (Model/ID) -

Water Quality Meter (Model/ID) - Decontamination Method -

Purging Method(s) X Summa \_\_\_\_\_ Vacuum Truck \_\_\_\_\_ Submersible Pump \_\_\_\_\_ Other \_\_\_\_\_

Sampling Method(s) X Summa Canister \_\_\_\_\_ Disposal Bailer \_\_\_\_\_ Other \_\_\_\_\_

**BOREHOLE AND WELL CASING VOLUME INFORMATION**

Borehole Diameter (Circle) 5 6" 8" Casing Diameter (Circle) 3/16"

Casing Multiplier (CM) (mL/foot) 5.42

**PURGING CALCULATORS**

MONITORING MEASUREMENTS

Depth to Free Product (feet) -

Depth to Water (DTW) (feet) -

Total Well Depth (WD) (feet) 5'

Water Column (WC) (feet) -

Free Product Thickness (feet) -

Casing Volume (CV) \_\_\_\_\_

WD x CM \_\_\_\_\_ CV (mL) x 3.0 CV (mL) \_\_\_\_\_

Free Product Purged (gal) \_\_\_\_\_

*purse = 150 mL/min*

**PURGING DATA**

Time (24 hr)	9:05	9:06	9:07	9:08	9:09				
mL Purged	<del>150</del>	150	300	450	600				
He % in shroud	30.7	32.3	30.8	27.7	26.0				
He % out	-00.5	-01.2	-01.7	-01.7	-01.7				
Sample Time	9:09	9:16	9:20	9:25	9:32	9:36			
He % in shroud	26.0	21.5	18.9	24.9	22.0				
Hg "	-30	-25	-25	-15	-10	-5			
Other							Sample time	9:36	
Other							canister #	191	
							manifold #		

**SAMPLING DATA**

Sample ID	Time	Quantity	Volume	Type	Filtered	Preserved	Analysis

**FIELD PERSONNEL**

Field Technician Representative(s): \_\_\_\_\_ Signature \_\_\_\_\_

Subcontractor: \_\_\_\_\_ Date: \_\_\_\_\_

*M*

## **APPENDIX E**

### **Soil Gas Lab Data Sheets**



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







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

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 282002  
ANALYTICAL REPORT

Almar Environmental

Project : 1078  
Location : Green Oak Builders  
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
SG-5	282002-001
SG-6	282002-002
SG-7	282002-003
SG-8	282002-004
SG-9	282002-005
SG-10	282002-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: \_\_\_\_\_

Date: 10/19/2016

Will Rice  
Project Manager  
will.rice@ctberk.com

### CASE NARRATIVE

Laboratory number: 282002  
Client: Almar Environmental  
Project: 1078  
Location: Green Oak Builders  
Request Date: 10/11/16  
Samples Received: 10/10/16

This data package contains sample and QC results for six air samples, requested for the above referenced project on 10/11/16. The samples were received cold and intact.

#### Volatile Organics in Air by MS (EPA TO-15):

Low response was observed for carbon tetrachloride in the ICV analyzed 08/24/16 02:30; affected data was qualified with "b". High response was observed for vinyl acetate in the CCV analyzed 10/16/16 14:37; affected data was qualified with "b". High recoveries were observed for vinyl acetate in the BS/BSD for batch 240198; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples. SG-7 (lab # 282002-003), SG-9 (lab # 282002-005), and SG-10 (lab # 282002-006) were diluted due to high hydrocarbons. No other analytical problems were encountered.

#### Volatile Organics in Air GC (ASTM D1946 and EPA TO-3):

Gasoline range organics C6-C12 was detected between the MDL and the RL in the method blank for batch 240295. No other analytical problems were encountered.

**Curtis & Tompkins, Ltd.**  
 Analytical Laboratory Since 1878  
 2323 Fifth Street  
 Berkeley, CA 94710  
 (510)486-0900 Phone  
 (510)486-0532 Fax

## AIR TESTING CHAIN OF CUSTODY & PURCHASE ORDER

Page 1 of 1  
 Chain of Custody # : \_\_\_\_\_

C&T LOGIN # \_\_\_\_\_

Project No: 1078  
 Project Name: Green Oak Builders  
 EDD Format: \_\_\_\_\_ Rpt Level: II III IV  
 Turnaround Time:  RUSH  Standard

Sampler: F. Cook  
 Report To: F. Cook  
 Company: Almer Env.  
 Telephone: 831-420-7923  
 Email: cook.fornetto@gmail.com

### TESTING REQUESTED

TPHs + VOCs by TO-15	Fixed Gases O <sub>2</sub> + He				
X	X				
X	X				
X	X				
X	X				
X	X				

Lab No.	Sample ID.	Sampling Information				
		Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)
1	SG-5	10-10-16	10:22	334	A00264	-5
2	SG-6	↓	10:50	246	A00150	-5
3	SG-7		11:23	154	A00216	-5
4	SG-8		9:58	121	A00259	-5
5	SG-9		8:50	1703	A00152	-5
6	SG-10		9:36	191	?	-5

Notes:		RELIQUISHED BY:	RECEIVED BY:
		<u>[Signature]</u> 10-10-16 14:04 <small>DATE/TIME</small>	<u>[Signature]</u> 10/10/16 19:04 <small>DATE/TIME</small>
		<small>DATE/TIME</small>	<small>DATE/TIME</small>
		<small>DATE/TIME</small>	<small>DATE/TIME</small>

**COOLER RECEIPT CHECKLIST**



Login # 282002 Date Received 10/10/16 Number of coolers 0  
 Client Almer Env. Project Green Oak Builders  
 Date Opened 10/10 By (print) SL (sign) [Signature]  
 Date Logged in 10/11 By (print) FYA (sign) [Signature]  
 Date Labeled ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) \_\_\_\_\_ YES  NO  
 Shipping info \_\_\_\_\_
- 2A. Were custody seals present? ....  YES (circle) on cooler on samples  NO  
 How many \_\_\_\_\_ Name \_\_\_\_\_ Date \_\_\_\_\_
- 2B. Were custody seals intact upon arrival? \_\_\_\_\_ YES NO  N/A
3. Were custody papers dry and intact when received? \_\_\_\_\_  YES NO
4. Were custody papers filled out properly (ink, signed, etc)? \_\_\_\_\_  YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) \_\_\_\_\_  YES NO
6. Indicate the packing in cooler: (if other, describe) \_\_\_\_\_  
 Bubble Wrap     Foam blocks     Bags     None  
 Cloth material     Cardboard     Styrofoam     Paper towels
7. Temperature documentation: \* Notify PM if temperature exceeds 6°C  
 Type of ice used:  Wet     Blue/Gel     None    Temp(°C) \_\_\_\_\_  
 Temperature blank(s) included?  Thermometer# \_\_\_\_\_  IR Gun# \_\_\_\_\_  
 Samples received on ice directly from the field. Cooling process had begun
8. Were Method 5035 sampling containers present? \_\_\_\_\_ YES  NO  
 If YES, what time were they transferred to freezer? \_\_\_\_\_
9. Did all bottles arrive unbroken/unopened? \_\_\_\_\_  YES NO
10. Are there any missing / extra samples? \_\_\_\_\_ YES  NO
11. Are samples in the appropriate containers for indicated tests? \_\_\_\_\_  YES NO
12. Are sample labels present, in good condition and complete? \_\_\_\_\_  YES NO
13. Do the sample labels agree with custody papers? \_\_\_\_\_  YES NO
14. Was sufficient amount of sample sent for tests requested? \_\_\_\_\_  YES NO
15. Are the samples appropriately preserved? \_\_\_\_\_ YES NO  N/A
16. Did you check preservatives for all bottles for each sample? \_\_\_\_\_ YES NO  N/A
17. Did you document your preservative check? (pH strip lot# \_\_\_\_\_) YES NO  N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? \_\_\_\_\_ YES NO  N/A
19. Did you change the hold time in LIMS for preserved terracores? \_\_\_\_\_ YES NO  N/A
20. Are bubbles > 6mm absent in VOA samples? \_\_\_\_\_ YES NO  N/A
21. Was the client contacted concerning this sample delivery? \_\_\_\_\_ YES  NO  
 If YES, Who was called? \_\_\_\_\_ By \_\_\_\_\_ Date: \_\_\_\_\_

COMMENTS  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



Client Sample ID : SG-8

Laboratory Sample ID :

282002-004

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Isopropanol	4.8		3.6		ppbv	As Recd	1.800	EPA TO-15	METHOD
Tetrahydrofuran	7.0		0.90		ppbv	As Recd	1.800	EPA TO-15	METHOD
Toluene	1.8		0.90		ppbv	As Recd	1.800	EPA TO-15	METHOD
Tetrachloroethene	27		0.90		ppbv	As Recd	1.800	EPA TO-15	METHOD
Carbon Dioxide	7,700		1,800		ppmv	As Recd	1.800	ASTM D1946	METHOD
Oxygen	170,000		1,800		ppmv	As Recd	1.800	ASTM D1946	METHOD
Gasoline Range Organics C6-C12	94		90	10	ppbv	As Recd	1.800	EPA TO-3	METHOD

Client Sample ID : SG-9

Laboratory Sample ID :

282002-005

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Chloroform	28		20		ppbv	As Recd	39.40	EPA TO-15	METHOD
Tetrachloroethene	38		20		ppbv	As Recd	39.40	EPA TO-15	METHOD
Carbon Dioxide	84,000		2,000		ppmv	As Recd	1.970	ASTM D1946	METHOD
Oxygen	65,000		2,000		ppmv	As Recd	1.970	ASTM D1946	METHOD
Gasoline Range Organics C6-C12	32,000		2,000	220	ppbv	As Recd	39.40	EPA TO-3	METHOD

Client Sample ID : SG-10

Laboratory Sample ID :

282002-006

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	34		21		ppbv	As Recd	41.80	EPA TO-15	METHOD
Chloroform	34		21		ppbv	As Recd	41.80	EPA TO-15	METHOD
Carbon Dioxide	100,000		2,100		ppmv	As Recd	2.090	ASTM D1946	METHOD
Oxygen	59,000		2,100		ppmv	As Recd	2.090	ASTM D1946	METHOD
Gasoline Range Organics C6-C12	33,000		2,100	230	ppbv	As Recd	41.80	EPA TO-3	METHOD

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-5	Diln Fac:	1.990
Lab ID:	282002-001	Batch#:	240125
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/14/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.0	ND	4.9
Freon 114	ND	1.0	ND	7.0
Chloromethane	ND	1.0	ND	2.1
Vinyl Chloride	ND	1.0	ND	2.5
1,3-Butadiene	ND	1.0	ND	2.2
Bromomethane	ND	1.0	ND	3.9
Chloroethane	ND	1.0	ND	2.6
Trichlorofluoromethane	ND	1.0	ND	5.6
Acrolein	ND	4.0	ND	9.1
1,1-Dichloroethene	ND	1.0	ND	3.9
Freon 113	ND	1.0	ND	7.6
Acetone	ND	4.0	ND	9.5
Carbon Disulfide	ND	1.0	ND	3.1
Isopropanol	ND	4.0	ND	9.8
Methylene Chloride	ND	1.0	ND	3.5
trans-1,2-Dichloroethene	ND	1.0	ND	3.9
MTBE	ND	1.0	ND	3.6
n-Hexane	6.9	1.0	24	3.5
1,1-Dichloroethane	ND	1.0	ND	4.0
Vinyl Acetate	ND	1.0	ND	3.5
cis-1,2-Dichloroethene	ND	1.0	ND	3.9
2-Butanone	ND	1.0	ND	2.9
Ethyl Acetate	ND	1.0	ND	3.6
Tetrahydrofuran	6.6	1.0	20	2.9
Chloroform	2.2	1.0	11	4.9
1,1,1-Trichloroethane	ND	1.0	ND	5.4
Cyclohexane	2.6	1.0	8.8	3.4
Carbon Tetrachloride	ND	1.0	ND	6.3
Benzene	2.1	1.0	6.8	3.2
1,2-Dichloroethane	ND	1.0	ND	4.0
n-Heptane	2.2	1.0	8.9	4.1
Trichloroethene	ND	1.0	ND	5.3
1,2-Dichloropropane	ND	1.0	ND	4.6
Bromodichloromethane	ND	1.0	ND	6.7
cis-1,3-Dichloropropene	ND	1.0	ND	4.5

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-5	Diln Fac:	1.990
Lab ID:	282002-001	Batch#:	240125
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/14/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.0	ND	4.1
Toluene	2.9	1.0	11	3.7
trans-1,3-Dichloropropene	ND	1.0	ND	4.5
1,1,2-Trichloroethane	ND	1.0	ND	5.4
Tetrachloroethene	46	1.0	310	6.7
2-Hexanone	ND	1.0	ND	4.1
Dibromochloromethane	ND	1.0	ND	8.5
1,2-Dibromoethane	ND	1.0	ND	7.6
Chlorobenzene	ND	1.0	ND	4.6
Ethylbenzene	ND	1.0	ND	4.3
m,p-Xylenes	1.7	1.0	7.6	4.3
o-Xylene	ND	1.0	ND	4.3
Styrene	ND	1.0	ND	4.2
Bromoform	ND	1.0	ND	10
1,1,2,2-Tetrachloroethane	ND	1.0	ND	6.8
4-Ethyltoluene	ND	1.0	ND	4.9
1,3,5-Trimethylbenzene	ND	1.0	ND	4.9
1,2,4-Trimethylbenzene	ND	1.0	ND	4.9
1,3-Dichlorobenzene	ND	1.0	ND	6.0
1,4-Dichlorobenzene	ND	1.0	ND	6.0
Benzyl chloride	ND	1.0	ND	5.2
1,2-Dichlorobenzene	ND	1.0	ND	6.0
1,2,4-Trichlorobenzene	ND	1.0	ND	7.4
Hexachlorobutadiene	ND	1.0	ND	11
Naphthalene	ND	4.0	ND	21

Surrogate	%REC	Limits
Bromofluorobenzene	105	80-121

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units



### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-6	Diln Fac:	1.920
Lab ID:	282002-002	Batch#:	240125
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/14/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.96	ND	4.7
Freon 114	ND	0.96	ND	6.7
Chloromethane	ND	0.96	ND	2.0
Vinyl Chloride	ND	0.96	ND	2.5
1,3-Butadiene	ND	0.96	ND	2.1
Bromomethane	ND	0.96	ND	3.7
Chloroethane	ND	0.96	ND	2.5
Trichlorofluoromethane	ND	0.96	ND	5.4
Acrolein	ND	3.8	ND	8.8
1,1-Dichloroethene	ND	0.96	ND	3.8
Freon 113	ND	0.96	ND	7.4
Acetone	ND	3.8	ND	9.1
Carbon Disulfide	ND	0.96	ND	3.0
Isopropanol	ND	3.8	ND	9.4
Methylene Chloride	ND	0.96	ND	3.3
trans-1,2-Dichloroethene	ND	0.96	ND	3.8
MTBE	ND	0.96	ND	3.5
n-Hexane	ND	0.96	ND	3.4
1,1-Dichloroethane	ND	0.96	ND	3.9
Vinyl Acetate	ND	0.96	ND	3.4
cis-1,2-Dichloroethene	ND	0.96	ND	3.8
2-Butanone	ND	0.96	ND	2.8
Ethyl Acetate	ND	0.96	ND	3.5
Tetrahydrofuran	4.1	0.96	12	2.8
Chloroform	ND	0.96	ND	4.7
1,1,1-Trichloroethane	ND	0.96	ND	5.2
Cyclohexane	ND	0.96	ND	3.3
Carbon Tetrachloride	ND	0.96	ND	6.0
Benzene	ND	0.96	ND	3.1
1,2-Dichloroethane	ND	0.96	ND	3.9
n-Heptane	ND	0.96	ND	3.9
Trichloroethene	ND	0.96	ND	5.2
1,2-Dichloropropane	ND	0.96	ND	4.4
Bromodichloromethane	ND	0.96	ND	6.4
cis-1,3-Dichloropropene	ND	0.96	ND	4.4

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-6	Diln Fac:	1.920
Lab ID:	282002-002	Batch#:	240125
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/14/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.96	ND	3.9
Toluene	1.1	0.96	4.1	3.6
trans-1,3-Dichloropropene	ND	0.96	ND	4.4
1,1,2-Trichloroethane	ND	0.96	ND	5.2
Tetrachloroethene	23	0.96	160	6.5
2-Hexanone	ND	0.96	ND	3.9
Dibromochloromethane	ND	0.96	ND	8.2
1,2-Dibromoethane	ND	0.96	ND	7.4
Chlorobenzene	ND	0.96	ND	4.4
Ethylbenzene	ND	0.96	ND	4.2
m,p-Xylenes	ND	0.96	ND	4.2
o-Xylene	ND	0.96	ND	4.2
Styrene	ND	0.96	ND	4.1
Bromoform	ND	0.96	ND	9.9
1,1,2,2-Tetrachloroethane	ND	0.96	ND	6.6
4-Ethyltoluene	ND	0.96	ND	4.7
1,3,5-Trimethylbenzene	ND	0.96	ND	4.7
1,2,4-Trimethylbenzene	ND	0.96	ND	4.7
1,3-Dichlorobenzene	ND	0.96	ND	5.8
1,4-Dichlorobenzene	ND	0.96	ND	5.8
Benzyl chloride	ND	0.96	ND	5.0
1,2-Dichlorobenzene	ND	0.96	ND	5.8
1,2,4-Trichlorobenzene	ND	0.96	ND	7.1
Hexachlorobutadiene	ND	0.96	ND	10
Naphthalene	ND	3.8	ND	20

Surrogate	%REC	Limits
Bromofluorobenzene	92	80-121

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-7	Diln Fac:	38.80
Lab ID:	282002-003	Batch#:	240224
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/18/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	19	ND	96
Freon 114	ND	19	ND	140
Chloromethane	ND	19	ND	40
Vinyl Chloride	ND	19	ND	50
1,3-Butadiene	ND	19	ND	43
Bromomethane	ND	19	ND	75
Chloroethane	ND	19	ND	51
Trichlorofluoromethane	ND	19	ND	110
Acrolein	ND	78	ND	180
1,1-Dichloroethene	ND	19	ND	77
Freon 113	ND	19	ND	150
Acetone	ND	78	ND	180
Carbon Disulfide	29	19	91	60
Isopropanol	ND	78	ND	190
Methylene Chloride	ND	19	ND	67
trans-1,2-Dichloroethene	ND	19	ND	77
MTBE	ND	19	ND	70
n-Hexane	ND	19	ND	68
1,1-Dichloroethane	ND	19	ND	79
Vinyl Acetate	ND	19	ND	68
cis-1,2-Dichloroethene	ND	19	ND	77
2-Butanone	ND	19	ND	57
Ethyl Acetate	ND	19	ND	70
Tetrahydrofuran	23	19	67	57
Chloroform	84	19	410	95
1,1,1-Trichloroethane	ND	19	ND	110
Cyclohexane	ND	19	ND	67
Carbon Tetrachloride	ND	19	ND	120
Benzene	ND	19	ND	62
1,2-Dichloroethane	ND	19	ND	79
n-Heptane	ND	19	ND	80
Trichloroethene	ND	19	ND	100
1,2-Dichloropropane	ND	19	ND	90
Bromodichloromethane	ND	19	ND	130
cis-1,3-Dichloropropene	ND	19	ND	88

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-7	Diln Fac:	38.80
Lab ID:	282002-003	Batch#:	240224
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/18/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	19	ND	79
Toluene	78	19	290	73
trans-1,3-Dichloropropene	ND	19	ND	88
1,1,2-Trichloroethane	ND	19	ND	110
Tetrachloroethene	ND	19	ND	130
2-Hexanone	ND	19	ND	79
Dibromochloromethane	ND	19	ND	170
1,2-Dibromoethane	ND	19	ND	150
Chlorobenzene	ND	19	ND	89
Ethylbenzene	ND	19	ND	84
m,p-Xylenes	28	19	120	84
o-Xylene	ND	19	ND	84
Styrene	ND	19	ND	83
Bromoform	ND	19	ND	200
1,1,2,2-Tetrachloroethane	ND	19	ND	130
4-Ethyltoluene	ND	19	ND	95
1,3,5-Trimethylbenzene	ND	19	ND	95
1,2,4-Trimethylbenzene	ND	19	ND	95
1,3-Dichlorobenzene	ND	19	ND	120
1,4-Dichlorobenzene	ND	19	ND	120
Benzyl chloride	ND	19	ND	100
1,2-Dichlorobenzene	ND	19	ND	120
1,2,4-Trichlorobenzene	ND	19	ND	140
Hexachlorobutadiene	ND	19	ND	210
Naphthalene	ND	78	ND	410

Surrogate	%REC	Limits
Bromofluorobenzene	118	80-121

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-8	Diln Fac:	1.800
Lab ID:	282002-004	Batch#:	240125
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/14/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.90	ND	4.5
Freon 114	ND	0.90	ND	6.3
Chloromethane	ND	0.90	ND	1.9
Vinyl Chloride	ND	0.90	ND	2.3
1,3-Butadiene	ND	0.90	ND	2.0
Bromomethane	ND	0.90	ND	3.5
Chloroethane	ND	0.90	ND	2.4
Trichlorofluoromethane	ND	0.90	ND	5.1
Acrolein	ND	3.6	ND	8.3
1,1-Dichloroethene	ND	0.90	ND	3.6
Freon 113	ND	0.90	ND	6.9
Acetone	ND	3.6	ND	8.6
Carbon Disulfide	ND	0.90	ND	2.8
Isopropanol	4.8	3.6	12	8.8
Methylene Chloride	ND	0.90	ND	3.1
trans-1,2-Dichloroethene	ND	0.90	ND	3.6
MTBE	ND	0.90	ND	3.2
n-Hexane	ND	0.90	ND	3.2
1,1-Dichloroethane	ND	0.90	ND	3.6
Vinyl Acetate	ND	0.90	ND	3.2
cis-1,2-Dichloroethene	ND	0.90	ND	3.6
2-Butanone	ND	0.90	ND	2.7
Ethyl Acetate	ND	0.90	ND	3.2
Tetrahydrofuran	7.0	0.90	21	2.7
Chloroform	ND	0.90	ND	4.4
1,1,1-Trichloroethane	ND	0.90	ND	4.9
Cyclohexane	ND	0.90	ND	3.1
Carbon Tetrachloride	ND	0.90	ND	5.7
Benzene	ND	0.90	ND	2.9
1,2-Dichloroethane	ND	0.90	ND	3.6
n-Heptane	ND	0.90	ND	3.7
Trichloroethene	ND	0.90	ND	4.8
1,2-Dichloropropane	ND	0.90	ND	4.2
Bromodichloromethane	ND	0.90	ND	6.0
cis-1,3-Dichloropropene	ND	0.90	ND	4.1

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-8	Diln Fac:	1.800
Lab ID:	282002-004	Batch#:	240125
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/14/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.90	ND	3.7
Toluene	1.8	0.90	6.9	3.4
trans-1,3-Dichloropropene	ND	0.90	ND	4.1
1,1,2-Trichloroethane	ND	0.90	ND	4.9
Tetrachloroethene	27	0.90	190	6.1
2-Hexanone	ND	0.90	ND	3.7
Dibromochloromethane	ND	0.90	ND	7.7
1,2-Dibromoethane	ND	0.90	ND	6.9
Chlorobenzene	ND	0.90	ND	4.1
Ethylbenzene	ND	0.90	ND	3.9
m,p-Xylenes	ND	0.90	ND	3.9
o-Xylene	ND	0.90	ND	3.9
Styrene	ND	0.90	ND	3.8
Bromoform	ND	0.90	ND	9.3
1,1,2,2-Tetrachloroethane	ND	0.90	ND	6.2
4-Ethyltoluene	ND	0.90	ND	4.4
1,3,5-Trimethylbenzene	ND	0.90	ND	4.4
1,2,4-Trimethylbenzene	ND	0.90	ND	4.4
1,3-Dichlorobenzene	ND	0.90	ND	5.4
1,4-Dichlorobenzene	ND	0.90	ND	5.4
Benzyl chloride	ND	0.90	ND	4.7
1,2-Dichlorobenzene	ND	0.90	ND	5.4
1,2,4-Trichlorobenzene	ND	0.90	ND	6.7
Hexachlorobutadiene	ND	0.90	ND	9.6
Naphthalene	ND	3.6	ND	19

Surrogate	%REC	Limits
Bromofluorobenzene	94	80-121

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-9	Diln Fac:	39.40
Lab ID:	282002-005	Batch#:	240198
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/16/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	20	ND	97
Freon 114	ND	20	ND	140
Chloromethane	ND	20	ND	41
Vinyl Chloride	ND	20	ND	50
1,3-Butadiene	ND	20	ND	44
Bromomethane	ND	20	ND	76
Chloroethane	ND	20	ND	52
Trichlorofluoromethane	ND	20	ND	110
Acrolein	ND	79	ND	180
1,1-Dichloroethene	ND	20	ND	78
Freon 113	ND	20	ND	150
Acetone	ND	79	ND	190
Carbon Disulfide	ND	20	ND	61
Isopropanol	ND	79	ND	190
Methylene Chloride	ND	20	ND	68
trans-1,2-Dichloroethene	ND	20	ND	78
MTBE	ND	20	ND	71
n-Hexane	ND	20	ND	69
1,1-Dichloroethane	ND	20	ND	80
Vinyl Acetate	ND	20	ND	69
cis-1,2-Dichloroethene	ND	20	ND	78
2-Butanone	ND	20	ND	58
Ethyl Acetate	ND	20	ND	71
Tetrahydrofuran	ND	20	ND	58
Chloroform	28	20	140	96
1,1,1-Trichloroethane	ND	20	ND	110
Cyclohexane	ND	20	ND	68
Carbon Tetrachloride	ND	20	ND	120
Benzene	ND	20	ND	63
1,2-Dichloroethane	ND	20	ND	80
n-Heptane	ND	20	ND	81
Trichloroethene	ND	20	ND	110
1,2-Dichloropropane	ND	20	ND	91
Bromodichloromethane	ND	20	ND	130
cis-1,3-Dichloropropene	ND	20	ND	89

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-9	Diln Fac:	39.40
Lab ID:	282002-005	Batch#:	240198
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/16/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	20	ND	81
Toluene	ND	20	ND	74
trans-1,3-Dichloropropene	ND	20	ND	89
1,1,2-Trichloroethane	ND	20	ND	110
Tetrachloroethene	38	20	260	130
2-Hexanone	ND	20	ND	81
Dibromochloromethane	ND	20	ND	170
1,2-Dibromoethane	ND	20	ND	150
Chlorobenzene	ND	20	ND	91
Ethylbenzene	ND	20	ND	86
m,p-Xylenes	ND	20	ND	86
o-Xylene	ND	20	ND	86
Styrene	ND	20	ND	84
Bromoform	ND	20	ND	200
1,1,2,2-Tetrachloroethane	ND	20	ND	140
4-Ethyltoluene	ND	20	ND	97
1,3,5-Trimethylbenzene	ND	20	ND	97
1,2,4-Trimethylbenzene	ND	20	ND	97
1,3-Dichlorobenzene	ND	20	ND	120
1,4-Dichlorobenzene	ND	20	ND	120
Benzyl chloride	ND	20	ND	100
1,2-Dichlorobenzene	ND	20	ND	120
1,2,4-Trichlorobenzene	ND	20	ND	150
Hexachlorobutadiene	ND	20	ND	210
Naphthalene	ND	79	ND	410

Surrogate	%REC	Limits
Bromofluorobenzene	111	80-121

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units



### Volatile Organics in Air

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-10	Diln Fac:	41.80
Lab ID:	282002-006	Batch#:	240198
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/16/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	21	ND	100
Freon 114	ND	21	ND	150
Chloromethane	ND	21	ND	43
Vinyl Chloride	ND	21	ND	53
1,3-Butadiene	ND	21	ND	46
Bromomethane	ND	21	ND	81
Chloroethane	ND	21	ND	55
Trichlorofluoromethane	ND	21	ND	120
Acrolein	ND	84	ND	190
1,1-Dichloroethene	ND	21	ND	83
Freon 113	ND	21	ND	160
Acetone	ND	84	ND	200
Carbon Disulfide	34	21	110	65
Isopropanol	ND	84	ND	210
Methylene Chloride	ND	21	ND	73
trans-1,2-Dichloroethene	ND	21	ND	83
MTBE	ND	21	ND	75
n-Hexane	ND	21	ND	74
1,1-Dichloroethane	ND	21	ND	85
Vinyl Acetate	ND	21	ND	74
cis-1,2-Dichloroethene	ND	21	ND	83
2-Butanone	ND	21	ND	62
Ethyl Acetate	ND	21	ND	75
Tetrahydrofuran	ND	21	ND	62
Chloroform	34	21	170	100
1,1,1-Trichloroethane	ND	21	ND	110
Cyclohexane	ND	21	ND	72
Carbon Tetrachloride	ND	21	ND	130
Benzene	ND	21	ND	67
1,2-Dichloroethane	ND	21	ND	85
n-Heptane	ND	21	ND	86
Trichloroethene	ND	21	ND	110
1,2-Dichloropropane	ND	21	ND	97
Bromodichloromethane	ND	21	ND	140
cis-1,3-Dichloropropene	ND	21	ND	95

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Field ID:	SG-10	Diln Fac:	41.80
Lab ID:	282002-006	Batch#:	240198
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/16/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	21	ND	86
Toluene	ND	21	ND	79
trans-1,3-Dichloropropene	ND	21	ND	95
1,1,2-Trichloroethane	ND	21	ND	110
Tetrachloroethene	ND	21	ND	140
2-Hexanone	ND	21	ND	86
Dibromochloromethane	ND	21	ND	180
1,2-Dibromoethane	ND	21	ND	160
Chlorobenzene	ND	21	ND	96
Ethylbenzene	ND	21	ND	91
m,p-Xylenes	ND	21	ND	91
o-Xylene	ND	21	ND	91
Styrene	ND	21	ND	89
Bromoform	ND	21	ND	220
1,1,2,2-Tetrachloroethane	ND	21	ND	140
4-Ethyltoluene	ND	21	ND	100
1,3,5-Trimethylbenzene	ND	21	ND	100
1,2,4-Trimethylbenzene	ND	21	ND	100
1,3-Dichlorobenzene	ND	21	ND	130
1,4-Dichlorobenzene	ND	21	ND	130
Benzyl chloride	ND	21	ND	110
1,2-Dichlorobenzene	ND	21	ND	130
1,2,4-Trichlorobenzene	ND	21	ND	160
Hexachlorobutadiene	ND	21	ND	220
Naphthalene	ND	84	ND	440

Surrogate	%REC	Limits
Bromofluorobenzene	111	80-121

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240125
Units (V):	ppbv	Analyzed:	10/13/16
Diln Fac:	1.000		

Type: BS Lab ID: QC855562

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	5.000	5.330	107	70-130
Freon 114	5.000	5.180	104	70-130
Chloromethane	5.000	4.008	80	70-130
Vinyl Chloride	5.000	5.090	102	70-130
1,3-Butadiene	5.000	4.587	92	70-130
Bromomethane	5.000	4.857	97	70-130
Chloroethane	5.000	4.785	96	70-130
Trichlorofluoromethane	5.000	5.584	112	70-130
Acrolein	5.000	5.408	108	70-130
1,1-Dichloroethene	5.000	5.796	116	70-130
Freon 113	5.000	5.706	114	70-130
Acetone	5.000	3.725	75	70-130
Carbon Disulfide	5.000	5.358	107	70-130
Isopropanol	5.000	4.411	88	70-130
Methylene Chloride	5.000	4.254	85	70-130
trans-1,2-Dichloroethene	5.000	6.086	122	70-130
MTBE	5.000	5.742	115	70-130
n-Hexane	5.000	5.121	102	70-130
1,1-Dichloroethane	5.000	5.017	100	70-130
Vinyl Acetate	5.000	6.453	129	70-130
cis-1,2-Dichloroethene	5.000	5.879	118	70-130
2-Butanone	5.000	4.943	99	70-130
Ethyl Acetate	5.000	4.892	98	70-130
Tetrahydrofuran	5.000	4.569	91	70-130
Chloroform	5.000	5.321	106	70-130
1,1,1-Trichloroethane	5.000	4.317	86	70-130
Cyclohexane	5.000	4.314	86	70-130
Carbon Tetrachloride	5.000	4.418 b	88	70-130
Benzene	5.000	4.790	96	70-130
1,2-Dichloroethane	5.000	4.457	89	70-130
n-Heptane	5.000	5.137	103	70-130
Trichloroethene	5.000	4.606	92	70-130
1,2-Dichloropropane	5.000	4.687	94	70-130

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240125
Units (V):	ppbv	Analyzed:	10/13/16
Diln Fac:	1.000		

<b>Analyte</b>	<b>Spiked</b>	<b>Result (V)</b>	<b>%REC</b>	<b>Limits</b>
Bromodichloromethane	5.000	4.554	91	70-130
cis-1,3-Dichloropropene	5.000	4.782	96	70-130
4-Methyl-2-Pentanone	5.000	6.209	124	70-130
Toluene	5.000	4.769	95	70-130
trans-1,3-Dichloropropene	5.000	4.815	96	70-130
1,1,2-Trichloroethane	5.000	4.082	82	70-130
Tetrachloroethene	5.000	4.696	94	70-130
2-Hexanone	5.000	5.585	112	70-130
Dibromochloromethane	5.000	3.894	78	70-130
1,2-Dibromoethane	5.000	4.004	80	70-130
Chlorobenzene	5.000	4.836	97	70-130
Ethylbenzene	5.000	5.385	108	70-130
m,p-Xylenes	10.00	10.31	103	70-130
o-Xylene	5.000	4.986	100	70-130
Styrene	5.000	5.194	104	70-130
Bromoform	5.000	4.173	83	70-130
1,1,2,2-Tetrachloroethane	5.000	4.512	90	70-130
4-Ethyltoluene	5.000	4.694	94	70-130
1,3,5-Trimethylbenzene	5.000	3.695	74	70-130
1,2,4-Trimethylbenzene	5.000	3.939	79	70-130
1,3-Dichlorobenzene	5.000	4.697	94	70-130
1,4-Dichlorobenzene	5.000	4.886	98	70-130
Benzyl chloride	5.000	5.047	101	70-130
1,2-Dichlorobenzene	5.000	4.654	93	70-130
1,2,4-Trichlorobenzene	5.000	4.247	85	70-130
Hexachlorobutadiene	5.000	5.861	117	70-130
Naphthalene	5.000	4.735	95	70-130

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Bromofluorobenzene	107	70-130

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240125
Units (V):	ppbv	Analyzed:	10/13/16
Diln Fac:	1.000		

Type: BSD                                  Lab ID:                                  QC855563

<b>Analyte</b>	<b>Spiked</b>	<b>Result (V)</b>	<b>%REC</b>	<b>Limits</b>	<b>RPD</b>	<b>Lim</b>
Freon 12	5.000	5.228	105	70-130	2	25
Freon 114	5.000	5.140	103	70-130	1	25
Chloromethane	5.000	3.953	79	70-130	1	25
Vinyl Chloride	5.000	4.995	100	70-130	2	25
1,3-Butadiene	5.000	4.563	91	70-130	1	25
Bromomethane	5.000	4.705	94	70-130	3	25
Chloroethane	5.000	4.853	97	70-130	1	25
Trichlorofluoromethane	5.000	5.489	110	70-130	2	25
Acrolein	5.000	5.364	107	70-130	1	25
1,1-Dichloroethene	5.000	5.650	113	70-130	3	25
Freon 113	5.000	5.593	112	70-130	2	25
Acetone	5.000	3.721	74	70-130	0	25
Carbon Disulfide	5.000	5.292	106	70-130	1	25
Isopropanol	5.000	4.378	88	70-130	1	25
Methylene Chloride	5.000	4.186	84	70-130	2	25
trans-1,2-Dichloroethene	5.000	6.016	120	70-130	1	25
MTBE	5.000	5.534	111	70-130	4	25
n-Hexane	5.000	5.251	105	70-130	3	25
1,1-Dichloroethane	5.000	5.063	101	70-130	1	25
Vinyl Acetate	5.000	6.384	128	70-130	1	25
cis-1,2-Dichloroethene	5.000	5.890	118	70-130	0	25
2-Butanone	5.000	5.025	101	70-130	2	25
Ethyl Acetate	5.000	4.819	96	70-130	2	25
Tetrahydrofuran	5.000	4.724	94	70-130	3	25
Chloroform	5.000	5.194	104	70-130	2	25
1,1,1-Trichloroethane	5.000	4.398	88	70-130	2	25
Cyclohexane	5.000	4.355	87	70-130	1	25
Carbon Tetrachloride	5.000	4.455 b	89	70-130	1	25
Benzene	5.000	4.738	95	70-130	1	25
1,2-Dichloroethane	5.000	4.494	90	70-130	1	25
n-Heptane	5.000	5.225	105	70-130	2	25
Trichloroethene	5.000	4.678	94	70-130	2	25
1,2-Dichloropropane	5.000	4.626	93	70-130	1	25

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240125
Units (V):	ppbv	Analyzed:	10/13/16
Diln Fac:	1.000		

<b>Analyte</b>	<b>Spiked</b>	<b>Result (V)</b>	<b>%REC</b>	<b>Limits</b>	<b>RPD</b>	<b>Lim</b>
Bromodichloromethane	5.000	4.496	90	70-130	1	25
cis-1,3-Dichloropropene	5.000	4.802	96	70-130	0	25
4-Methyl-2-Pentanone	5.000	6.328	127	70-130	2	25
Toluene	5.000	4.826	97	70-130	1	25
trans-1,3-Dichloropropene	5.000	4.792	96	70-130	0	25
1,1,2-Trichloroethane	5.000	4.017	80	70-130	2	25
Tetrachloroethene	5.000	4.777	96	70-130	2	25
2-Hexanone	5.000	5.593	112	70-130	0	25
Dibromochloromethane	5.000	3.898	78	70-130	0	25
1,2-Dibromoethane	5.000	3.997	80	70-130	0	25
Chlorobenzene	5.000	4.895	98	70-130	1	25
Ethylbenzene	5.000	5.348	107	70-130	1	25
m,p-Xylenes	10.000	10.36	104	70-130	0	25
o-Xylene	5.000	4.914	98	70-130	1	25
Styrene	5.000	5.004	100	70-130	4	25
Bromoform	5.000	4.233	85	70-130	1	25
1,1,2,2-Tetrachloroethane	5.000	4.442	89	70-130	2	25
4-Ethyltoluene	5.000	4.455	89	70-130	5	25
1,3,5-Trimethylbenzene	5.000	3.596	72	70-130	3	25
1,2,4-Trimethylbenzene	5.000	3.659	73	70-130	7	25
1,3-Dichlorobenzene	5.000	4.644	93	70-130	1	25
1,4-Dichlorobenzene	5.000	4.555	91	70-130	7	25
Benzyl chloride	5.000	5.027	101	70-130	0	25
1,2-Dichlorobenzene	5.000	4.483	90	70-130	4	25
1,2,4-Trichlorobenzene	5.000	4.230	85	70-130	0	25
Hexachlorobutadiene	5.000	5.542	111	70-130	6	25
Naphthalene	5.000	4.781	96	70-130	1	25

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Bromofluorobenzene	103	70-130

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC855564	Diln Fac:	1.000
Matrix:	Air	Batch#:	240125
Units (V):	ppbv	Analyzed:	10/13/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

**Batch QC Report**

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC855564	Diln Fac:	1.000
Matrix:	Air	Batch#:	240125
Units (V):	ppbv	Analyzed:	10/13/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	93	70-130

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units



## Batch QC Report

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240198
Units (V):	ppbv	Analyzed:	10/16/16
Diln Fac:	1.000		

Type: BS Lab ID: QC855835

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	5.000	5.502	110	70-130
Freon 114	5.000	5.385	108	70-130
Chloromethane	5.000	4.449	89	70-130
Vinyl Chloride	5.000	5.168	103	70-130
1,3-Butadiene	5.000	4.661	93	70-130
Bromomethane	5.000	5.165	103	70-130
Chloroethane	5.000	4.801	96	70-130
Trichlorofluoromethane	5.000	5.834	117	70-130
Acrolein	5.000	5.198	104	70-130
1,1-Dichloroethene	5.000	5.848	117	70-130
Freon 113	5.000	5.960	119	70-130
Acetone	5.000	3.888	78	70-130
Carbon Disulfide	5.000	5.595	112	70-130
Isopropanol	5.000	4.309	86	70-130
Methylene Chloride	5.000	4.247	85	70-130
trans-1,2-Dichloroethene	5.000	6.227	125	70-130
MTBE	5.000	5.853	117	70-130
n-Hexane	5.000	5.270	105	70-130
1,1-Dichloroethane	5.000	5.287	106	70-130
Vinyl Acetate	5.000	6.604 b	132 *	70-130
cis-1,2-Dichloroethene	5.000	6.042	121	70-130
2-Butanone	5.000	5.131	103	70-130
Ethyl Acetate	5.000	4.744	95	70-130
Tetrahydrofuran	5.000	4.545	91	70-130
Chloroform	5.000	5.633	113	70-130
1,1,1-Trichloroethane	5.000	4.456	89	70-130
Cyclohexane	5.000	4.378	88	70-130
Carbon Tetrachloride	5.000	4.501 b	90	70-130
Benzene	5.000	4.841	97	70-130
1,2-Dichloroethane	5.000	4.515	90	70-130
n-Heptane	5.000	4.638	93	70-130
Trichloroethene	5.000	4.752	95	70-130

\*= Value outside of QC limits; see narrative

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240198
Units (V):	ppbv	Analyzed:	10/16/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
1,2-Dichloropropane	5.000	4.677	94	70-130
Bromodichloromethane	5.000	4.698	94	70-130
cis-1,3-Dichloropropene	5.000	4.925	99	70-130
4-Methyl-2-Pentanone	5.000	5.882	118	70-130
Toluene	5.000	5.072	101	70-130
trans-1,3-Dichloropropene	5.000	4.801	96	70-130
1,1,2-Trichloroethane	5.000	4.622	92	70-130
Tetrachloroethene	5.000	5.141	103	70-130
2-Hexanone	5.000	5.747	115	70-130
Dibromochloromethane	5.000	4.356	87	70-130
1,2-Dibromoethane	5.000	4.416	88	70-130
Chlorobenzene	5.000	5.119	102	70-130
Ethylbenzene	5.000	5.460	109	70-130
m,p-Xylenes	10.00	10.70	107	70-130
o-Xylene	5.000	5.219	104	70-130
Styrene	5.000	5.329	107	70-130
Bromoform	5.000	4.603	92	70-130
1,1,2,2-Tetrachloroethane	5.000	4.727	95	70-130
4-Ethyltoluene	5.000	5.071	101	70-130
1,3,5-Trimethylbenzene	5.000	4.201	84	70-130
1,2,4-Trimethylbenzene	5.000	4.341	87	70-130
1,3-Dichlorobenzene	5.000	4.892	98	70-130
1,4-Dichlorobenzene	5.000	5.091	102	70-130
Benzyl chloride	5.000	5.185	104	70-130
1,2-Dichlorobenzene	5.000	4.950	99	70-130
1,2,4-Trichlorobenzene	5.000	4.799	96	70-130
Hexachlorobutadiene	5.000	5.908	118	70-130
Naphthalene	5.000	5.266	105	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	100	70-130

\*= Value outside of QC limits; see narrative

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

Batch QC Report

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240198
Units (V):	ppbv	Analyzed:	10/16/16
Diln Fac:	1.000		

Type: BSD                      Lab ID: QC855836

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	5.000	5.574	111	70-130	1	25
Freon 114	5.000	5.430	109	70-130	1	25
Chloromethane	5.000	4.359	87	70-130	2	25
Vinyl Chloride	5.000	5.134	103	70-130	1	25
1,3-Butadiene	5.000	4.693	94	70-130	1	25
Bromomethane	5.000	5.079	102	70-130	2	25
Chloroethane	5.000	4.945	99	70-130	3	25
Trichlorofluoromethane	5.000	5.879	118	70-130	1	25
Acrolein	5.000	5.407	108	70-130	4	25
1,1-Dichloroethene	5.000	6.001	120	70-130	3	25
Freon 113	5.000	5.932	119	70-130	0	25
Acetone	5.000	3.931	79	70-130	1	25
Carbon Disulfide	5.000	5.573	111	70-130	0	25
Isopropanol	5.000	4.463	89	70-130	4	25
Methylene Chloride	5.000	4.275	86	70-130	1	25
trans-1,2-Dichloroethene	5.000	6.184	124	70-130	1	25
MTBE	5.000	5.927	119	70-130	1	25
n-Hexane	5.000	5.315	106	70-130	1	25
1,1-Dichloroethane	5.000	5.223	104	70-130	1	25
Vinyl Acetate	5.000	6.724 b	134 *	70-130	2	25
cis-1,2-Dichloroethene	5.000	6.170	123	70-130	2	25
2-Butanone	5.000	5.114	102	70-130	0	25
Ethyl Acetate	5.000	4.887	98	70-130	3	25
Tetrahydrofuran	5.000	4.681	94	70-130	3	25
Chloroform	5.000	5.590	112	70-130	1	25
1,1,1-Trichloroethane	5.000	4.624	92	70-130	4	25
Cyclohexane	5.000	4.545	91	70-130	4	25
Carbon Tetrachloride	5.000	4.615 b	92	70-130	3	25
Benzene	5.000	4.947	99	70-130	2	25
1,2-Dichloroethane	5.000	4.654	93	70-130	3	25
n-Heptane	5.000	4.782	96	70-130	3	25
Trichloroethene	5.000	4.795	96	70-130	1	25

\*= Value outside of QC limits; see narrative

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240198
Units (V):	ppbv	Analyzed:	10/16/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
1,2-Dichloropropane	5.000	4.858	97	70-130	4	25
Bromodichloromethane	5.000	4.785	96	70-130	2	25
cis-1,3-Dichloropropene	5.000	4.987	100	70-130	1	25
4-Methyl-2-Pentanone	5.000	6.008	120	70-130	2	25
Toluene	5.000	5.179	104	70-130	2	25
trans-1,3-Dichloropropene	5.000	4.771	95	70-130	1	25
1,1,2-Trichloroethane	5.000	4.697	94	70-130	2	25
Tetrachloroethene	5.000	5.246	105	70-130	2	25
2-Hexanone	5.000	5.847	117	70-130	2	25
Dibromochloromethane	5.000	4.426	89	70-130	2	25
1,2-Dibromoethane	5.000	4.536	91	70-130	3	25
Chlorobenzene	5.000	5.290	106	70-130	3	25
Ethylbenzene	5.000	5.624	112	70-130	3	25
m,p-Xylenes	10.00	11.01	110	70-130	3	25
o-Xylene	5.000	5.211	104	70-130	0	25
Styrene	5.000	5.292	106	70-130	1	25
Bromoform	5.000	4.716	94	70-130	2	25
1,1,2,2-Tetrachloroethane	5.000	4.960	99	70-130	5	25
4-Ethyltoluene	5.000	4.957	99	70-130	2	25
1,3,5-Trimethylbenzene	5.000	4.287	86	70-130	2	25
1,2,4-Trimethylbenzene	5.000	4.455	89	70-130	3	25
1,3-Dichlorobenzene	5.000	5.136	103	70-130	5	25
1,4-Dichlorobenzene	5.000	4.986	100	70-130	2	25
Benzyl chloride	5.000	5.250	105	70-130	1	25
1,2-Dichlorobenzene	5.000	4.925	99	70-130	1	25
1,2,4-Trichlorobenzene	5.000	4.912	98	70-130	2	25
Hexachlorobutadiene	5.000	6.206	124	70-130	5	25
Naphthalene	5.000	5.441	109	70-130	3	25

Surrogate	%REC	Limits
Bromofluorobenzene	96	70-130

\*= Value outside of QC limits; see narrative

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC855837	Diln Fac:	1.000
Matrix:	Air	Batch#:	240198
Units (V):	ppbv	Analyzed:	10/16/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC855837	Diln Fac:	1.000
Matrix:	Air	Batch#:	240198
Units (V):	ppbv	Analyzed:	10/16/16

<b>Analyte</b>	<b>Result (V)</b>	<b>RL</b>	<b>Result (M)</b>	<b>RL</b>
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Bromofluorobenzene	95	70-130

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

Batch QC Report

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240224
Units (V):	ppbv	Analyzed:	10/17/16
Diln Fac:	1.000		

Type: BS Lab ID: QC855944

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	5.000	5.285	106	70-130
Freon 114	5.000	5.149	103	70-130
Chloromethane	5.000	4.125	83	70-130
Vinyl Chloride	5.000	4.691	94	70-130
1,3-Butadiene	5.000	4.428	89	70-130
Bromomethane	5.000	4.879	98	70-130
Chloroethane	5.000	4.603	92	70-130
Trichlorofluoromethane	5.000	5.576	112	70-130
Acrolein	5.000	4.823	96	70-130
1,1-Dichloroethene	5.000	5.654	113	70-130
Freon 113	5.000	5.550	111	70-130
Acetone	5.000	3.617	72	70-130
Carbon Disulfide	5.000	5.147	103	70-130
Isopropanol	5.000	4.220	84	70-130
Methylene Chloride	5.000	3.934	79	70-130
trans-1,2-Dichloroethene	5.000	6.024	120	70-130
MTBE	5.000	5.644	113	70-130
n-Hexane	5.000	5.048	101	70-130
1,1-Dichloroethane	5.000	5.008	100	70-130
Vinyl Acetate	5.000	6.331	127	70-130
cis-1,2-Dichloroethene	5.000	5.798	116	70-130
2-Butanone	5.000	4.948	99	70-130
Ethyl Acetate	5.000	4.746	95	70-130
Tetrahydrofuran	5.000	4.536	91	70-130
Chloroform	5.000	5.324	106	70-130
1,1,1-Trichloroethane	5.000	4.417	88	70-130
Cyclohexane	5.000	4.372	87	70-130
Carbon Tetrachloride	5.000	4.441 b	89	70-130
Benzene	5.000	4.785	96	70-130
1,2-Dichloroethane	5.000	4.540	91	70-130
n-Heptane	5.000	4.773	95	70-130
Trichloroethene	5.000	4.635	93	70-130
1,2-Dichloropropane	5.000	4.737	95	70-130

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

<b>Volatile Organics in Air</b>			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240224
Units (V):	ppbv	Analyzed:	10/17/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
Bromodichloromethane	5.000	4.590	92	70-130
cis-1,3-Dichloropropene	5.000	4.845	97	70-130
4-Methyl-2-Pentanone	5.000	6.016	120	70-130
Toluene	5.000	4.914	98	70-130
trans-1,3-Dichloropropene	5.000	4.608	92	70-130
1,1,2-Trichloroethane	5.000	4.340	87	70-130
Tetrachloroethene	5.000	4.713	94	70-130
2-Hexanone	5.000	5.610	112	70-130
Dibromochloromethane	5.000	4.050	81	70-130
1,2-Dibromoethane	5.000	4.184	84	70-130
Chlorobenzene	5.000	4.812	96	70-130
Ethylbenzene	5.000	5.134	103	70-130
m,p-Xylenes	10.00	9.940	99	70-130
o-Xylene	5.000	4.614	92	70-130
Styrene	5.000	4.667	93	70-130
Bromoform	5.000	4.321	86	70-130
1,1,2,2-Tetrachloroethane	5.000	4.536	91	70-130
4-Ethyltoluene	5.000	4.946	99	70-130
1,3,5-Trimethylbenzene	5.000	4.209	84	70-130
1,2,4-Trimethylbenzene	5.000	4.410	88	70-130
1,3-Dichlorobenzene	5.000	4.659	93	70-130
1,4-Dichlorobenzene	5.000	4.769	95	70-130
Benzyl chloride	5.000	4.771	95	70-130
1,2-Dichlorobenzene	5.000	4.585	92	70-130
1,2,4-Trichlorobenzene	5.000	4.893	98	70-130
Hexachlorobutadiene	5.000	5.438	109	70-130
Naphthalene	5.000	5.281	106	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	98	70-130

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units



## Batch QC Report

**Volatile Organics in Air**

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240224
Units (V):	ppbv	Analyzed:	10/17/16
Diln Fac:	1.000		

Type: BSD Lab ID: QC855945

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	5.000	5.269	105	70-130	0	25
Freon 114	5.000	5.177	104	70-130	1	25
Chloromethane	5.000	3.969	79	70-130	4	25
Vinyl Chloride	5.000	4.855	97	70-130	3	25
1,3-Butadiene	5.000	4.507	90	70-130	2	25
Bromomethane	5.000	4.802	96	70-130	2	25
Chloroethane	5.000	4.665	93	70-130	1	25
Trichlorofluoromethane	5.000	5.599	112	70-130	0	25
Acrolein	5.000	4.990	100	70-130	3	25
1,1-Dichloroethene	5.000	5.770	115	70-130	2	25
Freon 113	5.000	5.588	112	70-130	1	25
Acetone	5.000	3.625	73	70-130	0	25
Carbon Disulfide	5.000	5.261	105	70-130	2	25
Isopropanol	5.000	4.267	85	70-130	1	25
Methylene Chloride	5.000	4.143	83	70-130	5	25
trans-1,2-Dichloroethene	5.000	6.056	121	70-130	1	25
MTBE	5.000	5.589	112	70-130	1	25
n-Hexane	5.000	5.231	105	70-130	4	25
1,1-Dichloroethane	5.000	4.995	100	70-130	0	25
Vinyl Acetate	5.000	6.461	129	70-130	2	25
cis-1,2-Dichloroethene	5.000	5.900	118	70-130	2	25
2-Butanone	5.000	4.956	99	70-130	0	25
Ethyl Acetate	5.000	4.735	95	70-130	0	25
Tetrahydrofuran	5.000	4.600	92	70-130	1	25
Chloroform	5.000	5.354	107	70-130	1	25
1,1,1-Trichloroethane	5.000	4.253	85	70-130	4	25
Cyclohexane	5.000	4.295	86	70-130	2	25
Carbon Tetrachloride	5.000	4.374 b	87	70-130	2	25
Benzene	5.000	4.735	95	70-130	1	25
1,2-Dichloroethane	5.000	4.375	88	70-130	4	25
n-Heptane	5.000	4.853	97	70-130	2	25
Trichloroethene	5.000	4.512	90	70-130	3	25
1,2-Dichloropropane	5.000	4.634	93	70-130	2	25

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	240224
Units (V):	ppbv	Analyzed:	10/17/16
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Bromodichloromethane	5.000	4.487	90	70-130	2	25
cis-1,3-Dichloropropene	5.000	4.664	93	70-130	4	25
4-Methyl-2-Pentanone	5.000	5.937	119	70-130	1	25
Toluene	5.000	4.782	96	70-130	3	25
trans-1,3-Dichloropropene	5.000	4.573	91	70-130	1	25
1,1,2-Trichloroethane	5.000	4.041	81	70-130	7	25
Tetrachloroethene	5.000	4.607	92	70-130	2	25
2-Hexanone	5.000	5.284	106	70-130	6	25
Dibromochloromethane	5.000	3.912	78	70-130	3	25
1,2-Dibromoethane	5.000	3.986	80	70-130	5	25
Chlorobenzene	5.000	4.696	94	70-130	2	25
Ethylbenzene	5.000	5.004	100	70-130	3	25
m,p-Xylenes	10.00	9.668	97	70-130	3	25
o-Xylene	5.000	4.460	89	70-130	3	25
Styrene	5.000	4.677	94	70-130	0	25
Bromoform	5.000	4.143	83	70-130	4	25
1,1,2,2-Tetrachloroethane	5.000	4.273	85	70-130	6	25
4-Ethyltoluene	5.000	4.269	85	70-130	15	25
1,3,5-Trimethylbenzene	5.000	3.649	73	70-130	14	25
1,2,4-Trimethylbenzene	5.000	3.846	77	70-130	14	25
1,3-Dichlorobenzene	5.000	4.332	87	70-130	7	25
1,4-Dichlorobenzene	5.000	4.387	88	70-130	8	25
Benzyl chloride	5.000	4.702	94	70-130	1	25
1,2-Dichlorobenzene	5.000	4.327	87	70-130	6	25
1,2,4-Trichlorobenzene	5.000	4.447	89	70-130	10	25
Hexachlorobutadiene	5.000	5.019	100	70-130	8	25
Naphthalene	5.000	4.979	100	70-130	6	25

Surrogate	%REC	Limits
Bromofluorobenzene	99	70-130

b= See narrative

RPD= Relative Percent Difference

Result V= Result in volume units

**Batch QC Report**

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC855946	Diln Fac:	1.000
Matrix:	Air	Batch#:	240224
Units (V):	ppbv	Analyzed:	10/17/16

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	0.50	ND	2.5
Freon 114	ND	0.50	ND	3.5
Chloromethane	ND	0.50	ND	1.0
Vinyl Chloride	ND	0.50	ND	1.3
1,3-Butadiene	ND	0.50	ND	1.1
Bromomethane	ND	0.50	ND	1.9
Chloroethane	ND	0.50	ND	1.3
Trichlorofluoromethane	ND	0.50	ND	2.8
Acrolein	ND	2.0	ND	4.6
1,1-Dichloroethene	ND	0.50	ND	2.0
Freon 113	ND	0.50	ND	3.8
Acetone	ND	2.0	ND	4.8
Carbon Disulfide	ND	0.50	ND	1.6
Isopropanol	ND	2.0	ND	4.9
Methylene Chloride	ND	0.50	ND	1.7
trans-1,2-Dichloroethene	ND	0.50	ND	2.0
MTBE	ND	0.50	ND	1.8
n-Hexane	ND	0.50	ND	1.8
1,1-Dichloroethane	ND	0.50	ND	2.0
Vinyl Acetate	ND	0.50	ND	1.8
cis-1,2-Dichloroethene	ND	0.50	ND	2.0
2-Butanone	ND	0.50	ND	1.5
Ethyl Acetate	ND	0.50	ND	1.8
Tetrahydrofuran	ND	0.50	ND	1.5
Chloroform	ND	0.50	ND	2.4
1,1,1-Trichloroethane	ND	0.50	ND	2.7
Cyclohexane	ND	0.50	ND	1.7
Carbon Tetrachloride	ND	0.50	ND	3.1
Benzene	ND	0.50	ND	1.6
1,2-Dichloroethane	ND	0.50	ND	2.0
n-Heptane	ND	0.50	ND	2.0
Trichloroethene	ND	0.50	ND	2.7
1,2-Dichloropropane	ND	0.50	ND	2.3
Bromodichloromethane	ND	0.50	ND	3.4
cis-1,3-Dichloropropene	ND	0.50	ND	2.3

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

**Batch QC Report**

Volatile Organics in Air			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC855946	Diln Fac:	1.000
Matrix:	Air	Batch#:	240224
Units (V):	ppbv	Analyzed:	10/17/16

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	0.50	ND	2.0
Toluene	ND	0.50	ND	1.9
trans-1,3-Dichloropropene	ND	0.50	ND	2.3
1,1,2-Trichloroethane	ND	0.50	ND	2.7
Tetrachloroethene	ND	0.50	ND	3.4
2-Hexanone	ND	0.50	ND	2.0
Dibromochloromethane	ND	0.50	ND	4.3
1,2-Dibromoethane	ND	0.50	ND	3.8
Chlorobenzene	ND	0.50	ND	2.3
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Styrene	ND	0.50	ND	2.1
Bromoform	ND	0.50	ND	5.2
1,1,2,2-Tetrachloroethane	ND	0.50	ND	3.4
4-Ethyltoluene	ND	0.50	ND	2.5
1,3,5-Trimethylbenzene	ND	0.50	ND	2.5
1,2,4-Trimethylbenzene	ND	0.50	ND	2.5
1,3-Dichlorobenzene	ND	0.50	ND	3.0
1,4-Dichlorobenzene	ND	0.50	ND	3.0
Benzyl chloride	ND	0.50	ND	2.6
1,2-Dichlorobenzene	ND	0.50	ND	3.0
1,2,4-Trichlorobenzene	ND	0.50	ND	3.7
Hexachlorobutadiene	ND	0.50	ND	5.3
Naphthalene	ND	2.0	ND	10

Surrogate	%REC	Limits
Bromofluorobenzene	95	70-130

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

### Fixed Gas Analysis

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	ASTM D1946
Matrix:	Air	Sampled:	10/10/16
Units:	ppmv	Received:	10/10/16
Units (Mol %):	MOL %	Analyzed:	10/12/16
Batch#:	240085		

Field ID: SG-5    Lab ID: 282002-001  
 Type: SAMPLE    Diln Fac: 1.990

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	2,000	ND	0.20
Carbon Dioxide	14,000	2,000	1.4	0.20
Oxygen	160,000	2,000	16	0.20
Methane	ND	2,000	ND	0.20

Field ID: SG-6    Lab ID: 282002-002  
 Type: SAMPLE    Diln Fac: 1.920

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	1,900	ND	0.19
Carbon Dioxide	9,200	1,900	0.92	0.19
Oxygen	170,000	1,900	17	0.19
Methane	ND	1,900	ND	0.19

Field ID: SG-7    Lab ID: 282002-003  
 Type: SAMPLE    Diln Fac: 1.940

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	1,900	ND	0.19
Carbon Dioxide	26,000	1,900	2.6	0.19
Oxygen	98,000	1,900	9.8	0.19
Methane	ND	1,900	ND	0.19

Field ID: SG-8    Lab ID: 282002-004  
 Type: SAMPLE    Diln Fac: 1.800

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	1,800	ND	0.18
Carbon Dioxide	7,700	1,800	0.77	0.18
Oxygen	170,000	1,800	17	0.18
Methane	ND	1,800	ND	0.18

Field ID: SG-9    Lab ID: 282002-005  
 Type: SAMPLE    Diln Fac: 1.970

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	2,000	ND	0.20
Carbon Dioxide	84,000	2,000	8.4	0.20
Oxygen	65,000	2,000	6.5	0.20
Methane	ND	2,000	ND	0.20

NA= Not Analyzed  
 ND= Not Detected  
 RL= Reporting Limit

Result Mol %= Result in Mole Percent

**Fixed Gas Analysis**

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	ASTM D1946
Matrix:	Air	Sampled:	10/10/16
Units:	ppmv	Received:	10/10/16
Units (Mol %):	MOL %	Analyzed:	10/12/16
Batch#:	240085		

Field ID: SG-10                      Lab ID: 282002-006  
Type: SAMPLE                          Diln Fac: 2.090

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	2,100	ND	0.21
Carbon Dioxide	100,000	2,100	10	0.21
Oxygen	59,000	2,100	5.9	0.21
Methane	ND	2,100	ND	0.21

Type: BLANK                              Lab ID: QC855410

Analyte	Result
Carbon Monoxide	NA
Carbon Dioxide	NA
Oxygen	NA
Methane	NA

Type: BLANK                              Diln Fac: 1.000  
Lab ID: QC855418

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	1,000	ND	0.10
Carbon Dioxide	ND	1,000	ND	0.10
Oxygen	ND	1,000	ND	0.10
Methane	ND	1,000	ND	0.10

NA= Not Analyzed  
ND= Not Detected  
RL= Reporting Limit

Result Mol %= Result in Mole Percent

**Aromatic / Petroleum Hydrocarbons in Air**

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-3
Analyte:	Gasoline Range Organics C6-C12	Batch#:	240295
Matrix:	Air	Sampled:	10/10/16
Units (V):	ppbv	Received:	10/10/16
Units (M):	ug/m3	Analyzed:	10/18/16

Field ID	Type	Lab ID	Result (V)	RL	MDL	Result (M)	RL	MDL	Diln	Fac
SG-5	SAMPLE	282002-001	520	100	11	2,100	410	46	1.990	
SG-6	SAMPLE	282002-002	59 J	96	11	240 J	390	44	1.920	
SG-7	SAMPLE	282002-003	58,000	1,900	220	240,000	7,900	890	38.80	
SG-8	SAMPLE	282002-004	94	90	10	390	370	41	1.800	
SG-9	SAMPLE	282002-005	32,000	2,000	220	130,000	8,100	900	39.40	
SG-10	SAMPLE	282002-006	33,000	2,100	230	140,000	8,500	960	41.80	
	BLANK	QC856236	20 J	50	5.6	83 J	200	23	1.000	

J= Estimated value

RL= Reporting Limit

MDL= Method Detection Limit

Result M= Result in mass units

Result V= Result in volume units

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	ASTM D1946
Analyte:	Helium	Batch#:	240085
Matrix:	Air	Sampled:	10/10/16
Units:	ppmv	Received:	10/10/16
Units (Mol %):	MOL %	Analyzed:	10/12/16

Field ID	Type	Lab ID	Result	RL	Result (Mol %)	RL	Diln Fac
SG-5	SAMPLE	282002-001	ND	2,000	ND	0.20	1.990
SG-6	SAMPLE	282002-002	ND	1,900	ND	0.19	1.920
SG-7	SAMPLE	282002-003	ND	1,900	ND	0.19	1.940
SG-8	SAMPLE	282002-004	ND	1,800	ND	0.18	1.800
SG-9	SAMPLE	282002-005	ND	2,000	ND	0.20	1.970
SG-10	SAMPLE	282002-006	ND	2,100	ND	0.21	2.090
	BLANK	QC855410	ND	1,000	ND	0.10	1.000
	BLANK	QC855418	ND	1,000	ND	0.10	1.000

ND= Not Detected

RL= Reporting Limit

Result Mol %= Result in Mole Percent



Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	ASTM D1946
Analyte:	Helium	Units (Mol %):	MOL %
Field ID:	SG-5	Batch#:	240085
MSS Lab ID:	282002-001	Sampled:	10/10/16
Matrix:	Air	Received:	10/10/16
Units:	ppmv	Analyzed:	10/12/16

Type	Lab ID	MSS Result	Spiked	Result	RL	Result (Mol %)	RL	%REC	Limits RPD	Lim Diln Fac
BS	QC855408		100,000	94,310				94	70-130	1.000
BSD	QC855409		100,000	92,680				93	70-130 2	20 1.000
LCS	QC855417			NA						
SDUP	QC855419	<1,990		ND	1,990	ND	0.1990		NC	30 1.990

NA= Not Analyzed

NC= Not Calculated

ND= Not Detected

RL= Reporting Limit

RPD= Relative Percent Difference

Result Mol %= Result in Mole Percent



## Batch QC Report

Fixed Gas Analysis			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	ASTM D1946
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC855417	Batch#:	240085
Matrix:	Air	Analyzed:	10/12/16
Units:	ppmv		

Analyte	Spiked	Result	%REC	Limits
Carbon Monoxide	2,000	1,805	90	70-130
Carbon Dioxide	2,000	1,829	91	70-130
Oxygen	2,000	1,746	87	70-130
Methane	2,000	1,839	92	70-130

## Batch QC Report

Fixed Gas Analysis			
Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	ASTM D1946
Field ID:	SG-5	Units (Mol %):	MOL %
Type:	SDUP	Diln Fac:	1.990
MSS Lab ID:	282002-001	Batch#:	240085
Lab ID:	QC855419	Sampled:	10/10/16
Matrix:	Air	Received:	10/10/16
Units:	ppmv	Analyzed:	10/12/16

Analyte	MSS Result	Result	RL	Result (Mol %)	RL	RPD	Lim
Carbon Monoxide	<1,990	ND	1,990	ND	0.1990	NC	30
Carbon Dioxide	13,520	13,490	1,990	1.349	0.1990	0	30
Oxygen	164,100	164,100	1,990	16.41	0.1990	0	30
Methane	<1,990	ND	1,990	ND	0.1990	NC	30

NC= Not Calculated

ND= Not Detected

RL= Reporting Limit

RPD= Relative Percent Difference

Result Mol %= Result in Mole Percent

## Batch QC Report

**Aromatic / Petroleum Hydrocarbons in Air**

Lab #:	282002	Location:	Green Oak Builders
Client:	Almar Environmental	Prep:	METHOD
Project#:	1078	Analysis:	EPA TO-3
Analyte:	Gasoline Range Organics C6-C12	Diln Fac:	1.000
Matrix:	Air	Batch#:	240295
Units (V):	ppbv	Analyzed:	10/18/16

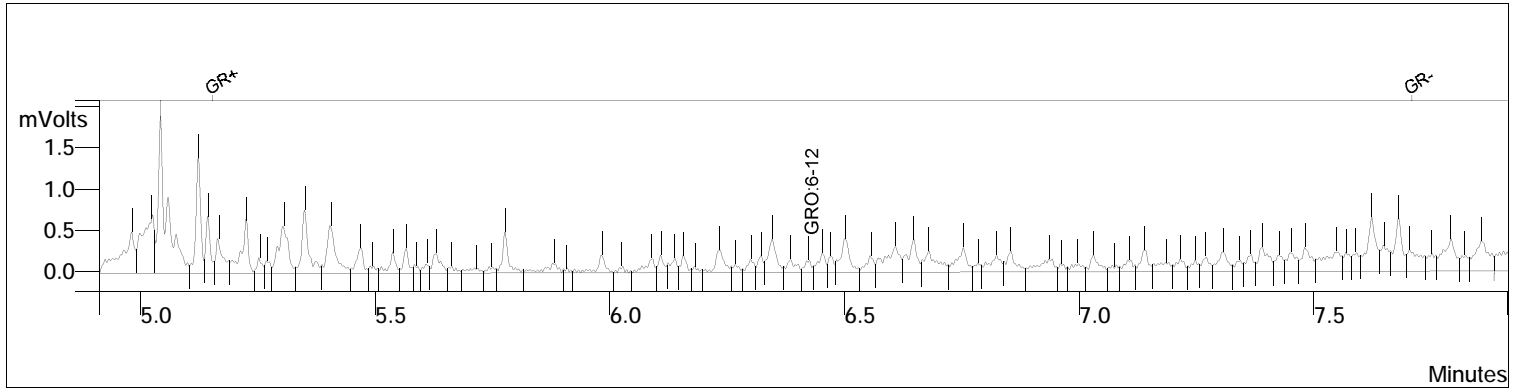
Type	Lab ID	Spiked	Result (V)	%REC	Limits	RPD	Lim
BS	QC856234	210.0	249.5	119	70-130		
BSD	QC856235	210.0	247.8	118	70-130	1	25

RPD= Relative Percent Difference

Result V= Result in volume units

# GRO by TO-3

Sample ID: 282002-001,240295  
 Data File: c:\varianws\data\101816\292\_004.run  
 Sample List: c:\varianws\101816.smp  
 Method: c:\varianws\to3\_091616.mth  
 Acquisition Date: 10/18/2016 18:56:21  
 Calculation Date: 10/18/2016 19:08:23  
 Instrument ID: MSAIR03 Operator: sjd  
 Injection Notes: 1.99x,c00334  
 Multiplier: 1.000 Divisor: 1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	20414	262.344
<b>Totals</b>			<b>20414</b>	<b>262.344</b>

**Integration Parameters**

Initial Tangent %: 0  
 Initial Peak Width (sec): 4  
 Initial Peak Reject Value: 50.000  
 Initial S/N Ratio: 5

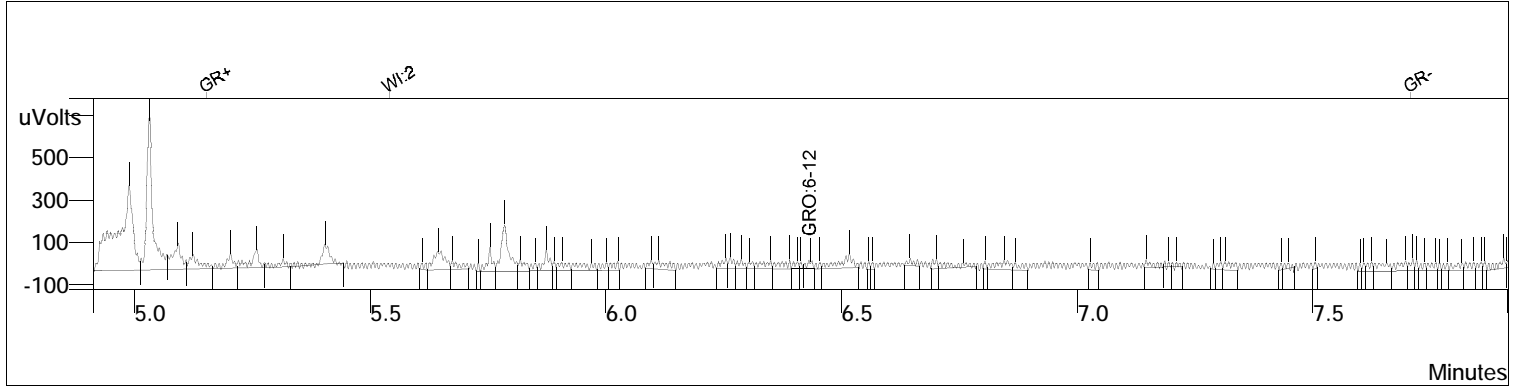
**Data Handling Time Events**

Time (min)	Event
0.009	II on
4.801	II off
5.155	GR on
7.708	GR off
8.703	WI 2.0 sec

# GRO by TO-3

```

Sample ID:          282002-002,240295
Data File:          c:\varianws\data\101816\292_005.run
Sample List:        c:\varianws\101816.smp
Method:             c:\varianws\to3_091616.mth
Acquisition Date:  10/18/2016 19:11:03
Calculation Date:  10/18/2016 19:23:05
Instrument ID:      MSAIR03
Operator:           sjd
Injection Notes:    1.92x,c00246
Multiplier:         1.000
Divisor:            1.000
    
```



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	2372	30.488
<b>Totals</b>			<b>2372</b>	<b>30.488</b>

**Integration Parameters**

```

Initial Tangent %:      0
Initial Peak Width (sec): 4
Initial Peak Reject Value: 50.000
Initial S/N Ratio:      5
    
```

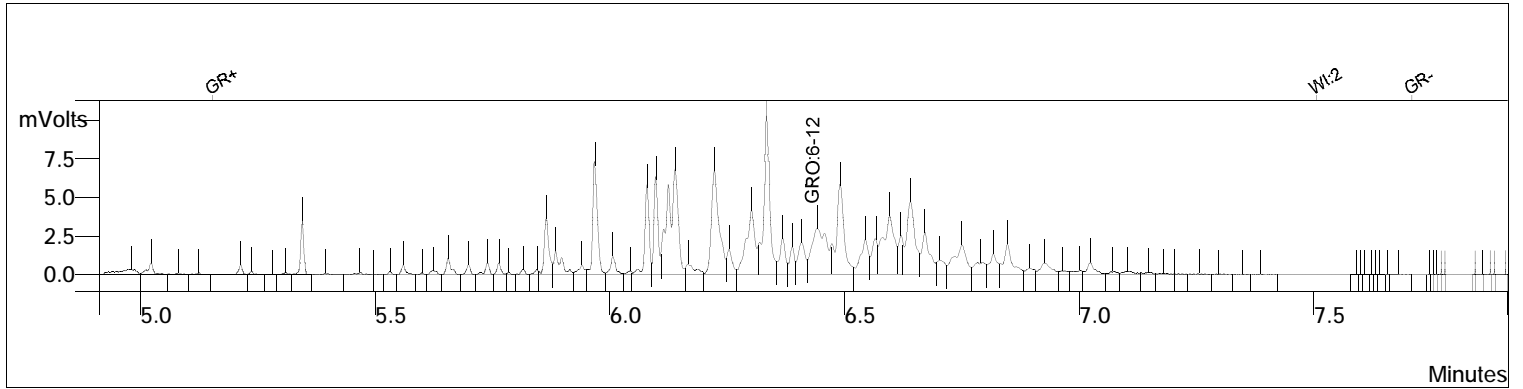
**Data Handling Time Events**

```

Time
(min)  Event
-----
0.009  II on
4.801  II off
5.155  GR on
5.543  WI 2.0 sec
7.708  GR off
    
```

# GRO by TO-3

Sample ID: 282002-003,240295  
 Data File: c:\varianws\data\101816\292\_007.run  
 Sample List: c:\varianws\101816.smp  
 Method: c:\varianws\to3\_091616.mth  
 Acquisition Date: 10/18/2016 19:40:38  
 Calculation Date: 10/18/2016 19:52:40  
 Instrument ID: MSAIR03 Operator: sjd  
 Injection Notes: 38.8x,c00128  
 Multiplier: 1.000 Divisor: 1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	115952	1490.131
<b>Totals</b>			<b>115952</b>	<b>1490.131</b>

**Integration Parameters**

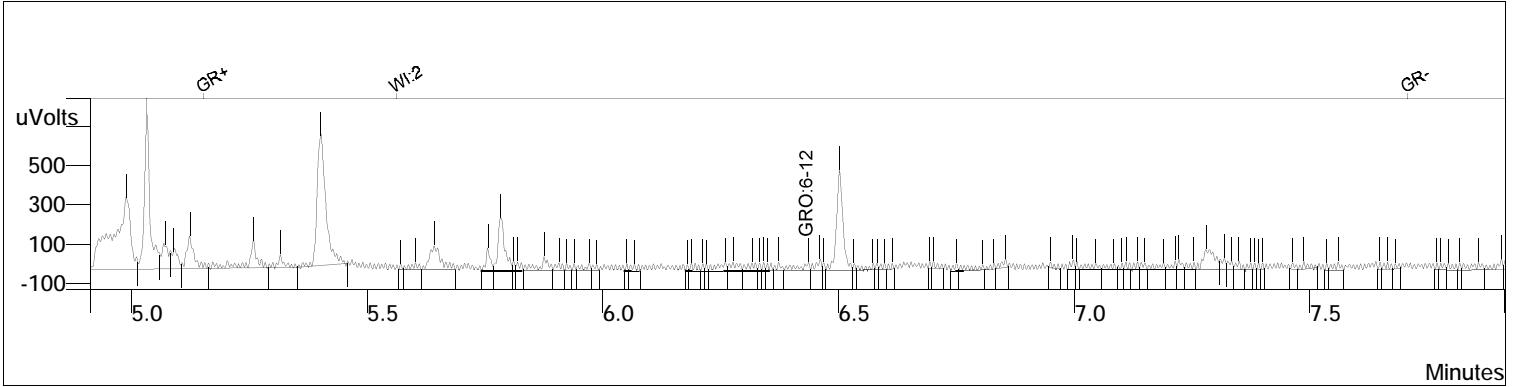
Initial Tangent %: 0  
 Initial Peak Width (sec): 4  
 Initial Peak Reject Value: 50.000  
 Initial S/N Ratio: 5

**Data Handling Time Events**

Time (min)	Event
0.009	II on
4.801	II off
5.155	GR on
7.505	WI 2.0 sec
7.708	GR off

# GRO by TO-3

Sample ID: 282002-004,240295  
Data File: c:\varianws\data\101816\292\_006.run  
Sample List: c:\varianws\101816.smp  
Method: c:\varianws\to3\_091616.mth  
Acquisition Date: 10/18/2016 19:25:56  
Calculation Date: 10/18/2016 19:37:58  
Instrument ID: MSAIR03 Operator: sjd  
Injection Notes: 1.80,c00121  
Multiplier: 1.000 Divisor: 1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	4080	52.429
Totals			4080	52.429

**Integration Parameters**

Initial Tangent %: 0  
Initial Peak Width (sec): 4  
Initial Peak Reject Value: 50.000  
Initial S/N Ratio: 5

**Data Handling Time Events**

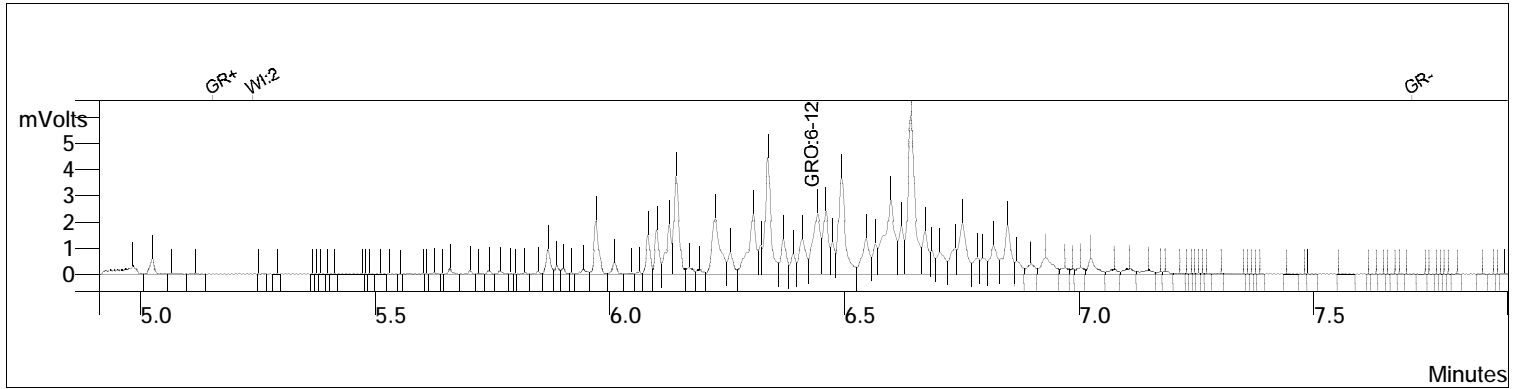
Time (min) Event  
-----  
0.009 II on  
4.801 II off  
5.155 GR on  
5.564 WI 2.0 sec  
7.708 GR off



# GRO by TO-3

```

Sample ID:          282002-005,240295
Data File:          c:\varianws\data\101816\292_008.run
Sample List:        c:\varianws\101816.smp
Method:             c:\varianws\to3_091616.mth
Acquisition Date:  10/18/2016 19:55:32
Calculation Date:  10/18/2016 20:07:34
Instrument ID:      MSAIR03
Operator:           sjd
Injection Notes:    39.4x,c00305
Multiplier:         1.000
Divisor:            1.000
    
```



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	63607	817.430
		<b>Totals</b>	<b>63607</b>	<b>817.430</b>

**Integration Parameters**

```

Initial Tangent %:      0
Initial Peak Width (sec): 4
Initial Peak Reject Value: 50.000
Initial S/N Ratio:      5
    
```

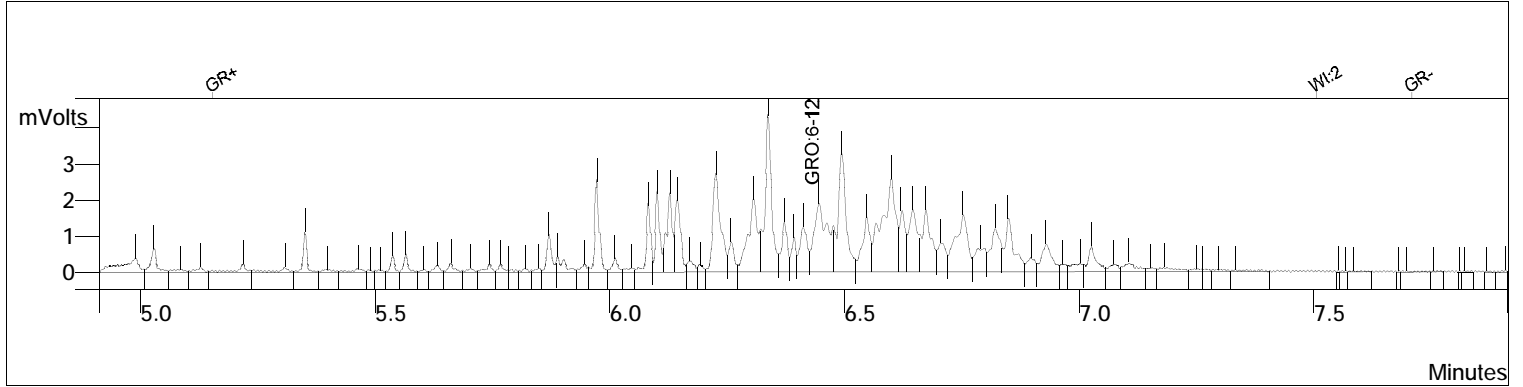
**Data Handling Time Events**

```

Time
(min)  Event
-----
0.009  II on
4.801  II off
5.155  GR on
5.241  WI 2.0 sec
7.708  GR off
    
```

# GRO by TO-3

Sample ID: 282002-006,240295  
 Data File: c:\varianws\data\101816\292\_009.run  
 Sample List: c:\varianws\101816.smp  
 Method: c:\varianws\to3\_091616.mth  
 Acquisition Date: 10/18/2016 20:10:33  
 Calculation Date: 10/18/2016 20:22:35  
 Instrument ID: MSAIR03 Operator: sjd  
 Injection Notes: 41.8x,c00342  
 Multiplier: 1.000 Divisor: 1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	61796	794.155
		<b>Totals</b>	<b>61796</b>	<b>794.155</b>

**Integration Parameters**

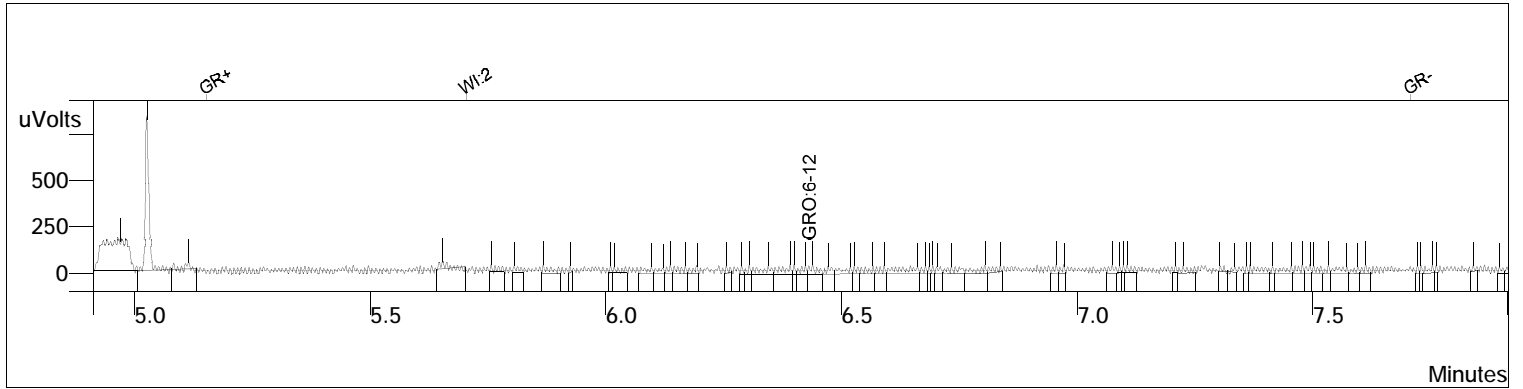
Initial Tangent %: 0  
 Initial Peak Width (sec): 4  
 Initial Peak Reject Value: 50.000  
 Initial S/N Ratio: 5

**Data Handling Time Events**

Time (min) Event  
 -----  
 0.009 II on  
 4.801 II off  
 5.155 GR on  
 7.505 WI 2.0 sec  
 7.708 GR off

# GRO by TO-3

Sample ID: mb,qc856236,240295  
 Data File: c:\varianws\data\101816\292\_003.run  
 Sample List: c:\varianws\101816.smp  
 Method: c:\varianws\to3\_091616.mth  
 Acquisition Date: 10/18/2016 18:41:41  
 Calculation Date: 10/18/2016 18:53:42  
 Instrument ID: MSAIR03 Operator: sjd  
 Injection Notes: 1x,c00003  
 Multiplier: 1.000 Divisor: 1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	1575	20.240
<b>Totals</b>			<b>1575</b>	<b>20.240</b>

**Integration Parameters**

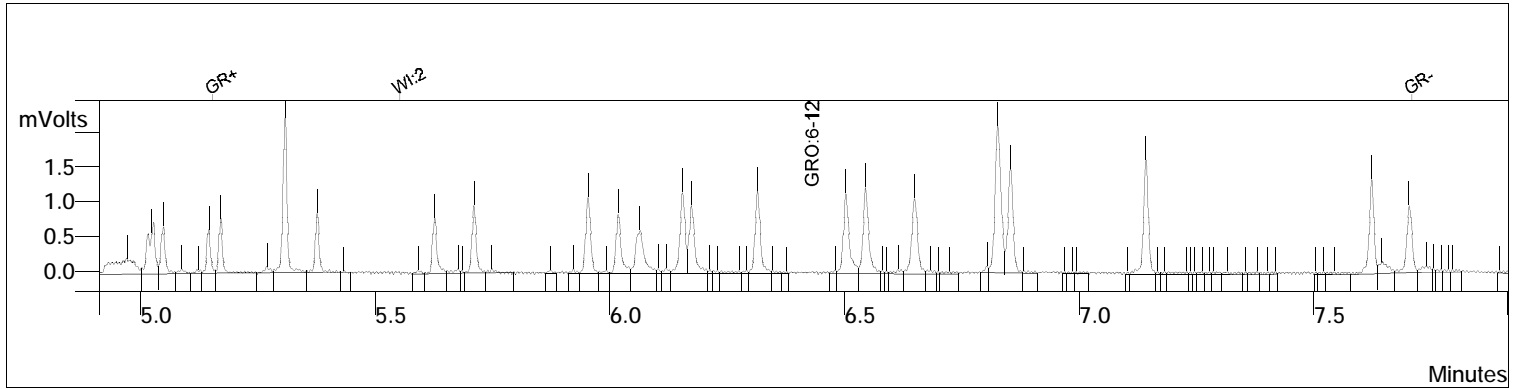
Initial Tangent %: 0  
 Initial Peak Width (sec): 4  
 Initial Peak Reject Value: 50.000  
 Initial S/N Ratio: 5

**Data Handling Time Events**

Time (min) Event  
 -----  
 0.009 II on  
 4.801 II off  
 5.155 GR on  
 5.705 WI 2.0 sec  
 7.708 GR off

# GRO by TO-3

Sample ID: ccv/bs,qc856234  
Data File: c:\varianws\data\101816\292\_001.run  
Sample List: c:\varianws\101816.smp  
Method: c:\varianws\to3\_091616.mth  
Acquisition Date: 10/18/2016 18:12:42  
Calculation Date: 10/18/2016 18:24:44  
Instrument ID: MSAIR03 Operator: sjd  
Injection Notes: 240295,s31166,1x  
Multiplier: 1.000 Divisor: 1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	19411	249.454
		<b>Totals</b>	<b>19411</b>	<b>249.454</b>

### Integration Parameters

Initial Tangent %: 0  
Initial Peak Width (sec): 4  
Initial Peak Reject Value: 50.000  
Initial S/N Ratio: 5

### Data Handling Time Events

Time (min) Event  
-----  
0.009 II on  
4.801 II off  
5.155 GR on  
5.553 WI 2.0 sec  
7.708 GR off