With respect to:

Soil Gas Assessment Report
Dated 1/19/2016
Fuel Leak Case No. RO0000196

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Tommy Chiu
Mr. Tommy Chiu

12-28-15
Date

Soil Gas Assessment Report

Chiu Property
800 Franklin Street
Oakland, California
Agency Case No. RO0000196

5900 Hollis Street, Suite A Emeryville California 94608
581000 | Report No 23 | January 19 2016

Soil Gas Assessment Report

Chiu Property
800 Franklin Street
Oakland, California
Agency Case No. RO0000196

Bryan Fong

Ron Scheele, P.G.

5900 Hollis Street, Suite A, Emeryville, California 94608 USA

581000 | Report No 23 | January, 2016

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1. Introduction

On behalf of Mr. Tommy Chiu, GHD Services Inc. (GHD), formerly Conestoga-Rovers & Associates, Inc. (CRA) has prepared this *Soil Gas Assessment Report* (Report) for the property located at 800 Franklin Street in Oakland, California (Site). As requested by Alameda County Environmental Health (ACEH) in their letter dated May 11, 2015 (**Appendix A**), this Report assesses potential vapor intrusion risk to indoor air within the on-Site building. The Site background, Site assessment activities, and conclusions and recommendations are presented below.

2. Site Background

2.1 Site Description

The Site is located in a commercial area, at the eastern corner of the intersection of 8th and Franklin Streets in Oakland, California (**Figure 1**). It is at an elevation of approximately 35 feet above mean sea level (amsl). The Site presently has a two-story commercial building with a footprint over the entire lot (**Figure 2**). Retail stores currently operate on the ground floor with commercial offices above. The Site is bound by commercial properties to the northeast and southeast, 8th Street to the southwest, and Franklin Street to the northwest.

2.2 Site Background

Prior to 1989, the Site operated as a gasoline service station. Previous investigation reports indicated that up to five underground storage tanks (USTs) previously existed at the Site. The former USTs consisted of two 6,000-gallon gasoline USTs, one 550-gallon waste-oil, and one 1,000-gallon UST that may have stored solvents. The contents and size of the fifth UST are unknown. The two 6000-gallon gasoline USTs, 550-gallon waste oil UST, and 1,000-gallon UST were installed circa 1970 and subsequently removed in 1989. According to historical accounts, the fifth UST was removed prior to June 1988, but no records have been found to document the removal activities. The 6,000-gallon USTs were formerly located in the northwest portion of the Site, and the 550- and 1,000-gallon USTs were formerly located beneath the sidewalk along 8th Street. Based on historical reports, the fifth UST is presumed to have been located on the eastern portion of the site in the vicinity of boring B-4 (**Figure 2**).

3. Site Assessment Activities

3.1 Sub-Slab Soil Gas Probe Installation and Sampling Activities

Site assessment and confirmation sampling activities were conducted in December 2015 and consisted of sub-slab soil gas probe installation and soil gas sampling. The objectives of this investigation were to install and sample sub-slab soil gas probes in the vicinity of the former fifth UST to assess if a potential vapor intrusion risk to the Site building occupants exists from a potential UST release, and to assess current soil gas concentrations in the vicinity of the former 6,000-gallon gasoline, 550-gallon waste-oil, and 1,000-gallon UST pits.

All field activities were overseen by GHD's Principal Geologist Ron Scheele, a California Professional Geologist (PG #6842). Recent Site assessment activities are summarized below.

Underground Service Alert and Utility Survey: Prior to drilling activities, the boring locations were marked with white paint and underground service alert (USA) was notified of the proposed sub-slab probe locations. GHD retained Pacific Coast Locators of La Crescenta, California, a private utility locator, to locate any subsurface utilities that may not have been identified by USA.

Drilling Dates: Sub-slab soil gas probes were installed by Cascade Drilling (Cascade) of Richmond, California on December 2, 2015.

Sub-Slab Soil Gas Probe Installation: Two sub-slab probes (SSVP-1 and SSVP-2) were installed at the Site approximately 4 inches below the building slab in the vicinity of the former fifth UST location and dispenser using a rotary hammer drill (**Figure 2**). The sub-slab probes were constructed of a stainless steel probe connected to 1/4-inch diameter steel casing and Swagelok connection fittings. Each probe was placed at approximately 4-inches below the slab and surrounded with Monterey 2/12 sand pack. Approximately 2-inches of dry granular bentonite was placed above the sand pack, followed by hydrated powder bentonite and anchoring cement seal to the surface. The probe was capped, and completed flush with the floor surface. Sub-slab probe construction details are provided in **Appendix B**.

Sub-Slab Probe and Soil Gas Well Sampling: Soil gas samples were collected from soil gas wells VP-1 and VP-2, and sub-slab probes SSVP-1 and SSVP-2 on December 16, 2015 using laboratory certified 1-liter Summa™ canisters. Prior to sampling, a "shut-in" test was performed on each sampling manifold. This test was performed by connecting the sample Summa™ canisters to the manifold, sealing all openings of the manifold to ambient air, and then opening the purge canister to establish a vacuum inside the sampling manifold for a minimum of 10 minutes. If any vacuum was lost over the 10 minute interval, the manifold fittings were tightened and the test was repeated. Once the sampling manifold passed the "shut in" test, it was connected to the soil gas well or sub-slab probe and approximately three casing volumes were purged using a dedicated purge Summa™ canister. Following purging, soil gas samples were collected using the sample canister until a negative pressure of approximately 5 inches of mercury was observed on the vacuum gauge. Prior to and after collecting each soil gas sample, the vacuum of each sample canister was measured and recorded to ensure an adequate sample volume was collected.

In accordance with the Department of Toxic Substances Control (DTSC) *Advisory – Active Soil Gas Investigation* guidance document, dated July 2015, leak testing was performed during sampling using helium as a tracer gas. During sampling, the entire sampling train and the soil gas well or sub-slab probe vaults were enclosed within a rigid shroud filled with helium. Helium concentrations inside the shroud were monitored using a helium meter and maintained at an approximate concentration of 50 percent during sampling. Sample Summa™ canisters were packaged and sent under chain-of-custody (COC) to Eurofins Air Toxics laboratory (Air Toxics) in Folsom, California for analysis. Air Toxics is a California-certified laboratory. Soil gas sampling field sheets are provided as **Appendix C**.

Soil Gas Sample Analysis: Soil gas samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg); benzene, toluene, ethylbenzene, and xylenes (BTEX); naphthalene; tetrachloroethene (PCE); trichloroethene (TCE); cic-1,2-dichloroethene (cis-1,2-DCE); and vinyl chloride (VC) by EPA Method TO-15; and for oxygen, carbon dioxide, nitrogen, methane, and helium by ASTM Method D-1946. Soil gas analytical results are provided as **Appendix D**.

3.2 Soil Gas Sampling Results

Soil gas samples were collected from soil gas wells VP-1 and VP-2, and sub-slab probes SSVP-1 and SSVP-2 on December 16, 2015. Toluene was detected above the reporting limit in samples VP-2-DUP, SSVP-2, and SSVP-2-DUP. Toluene concentrations ranged from 6.3 micrograms per cubic meter (µg/m^3) in VP-2-DUP to 28 µg/m^3 in SSVP-2. Naphthalene was detected in SSVP-1 at an estimated value of 0.55 µg/m^3, and in SSVP-2-DUP at an estimated value of 0.50 µg/m^3.

No TPHg, benzene, ethylbenzene, m,p-xylene, o-xylene, PCE, TCE, cis-1,2-DCE, or vinyl chloride were detected above the reporting limit in any of the samples.

All samples were analyzed for helium to quantitatively test for ambient air leaks. Helium levels of approximately 50 percent were maintained in the sampling shroud during sampling. Helium was detected above the reporting limit, in SSVP-1, SSVP-2, and SSVP-2-DUP, with a maximum concentration of 0.84% (SSVP-2-DUP). No helium was detected above reporting limits in VP-1 or VP-2. Helium detections in samples must be below five percent of the helium concentration maintained in the shroud during sampling to show that a sample is valid and representative of subsurface conditions. The helium leak test results confirm that all sample results are valid and representative of subsurface conditions.

Soil gas sampling results are summarized on **Figure 2** and presented in **Table 1**. The analytical laboratory report and COC are included in **Appendix D**.

Soil gas results from soil gas wells VP-1 and VP-2 were compared to the December 2013 San Francisco Bay Regional Water Quality Control Board (RWQDCB) commercial soil gas Environmental Screening Levels (ESLs). . No hydrocarbon or VOC detections from VP-1 and VP-2 exceed the ESLs.

ESLs from the RWQCB do not currently exist for sub-slab soil gas samples. As a result, GHD developed generic sub-slab soil gas screening levels by dividing the RWQCB's ESL for commercial indoor air by a residential based sub-slab attenuation factor of 0.05, as suggested by the DTSC's vapor intrusion guidance document. Soil gas samples for SSVP-1 and SSVP-2 were compared to these generic sub-slab soil gas screening levels. No hydrocarbon or VOC detections from sub-slab probes SSVP-1 and SSVP-2 exceed the ESLs.

ESLs and the analytical results are presented on **Table 1**.

4. Conclusions and Recommendations

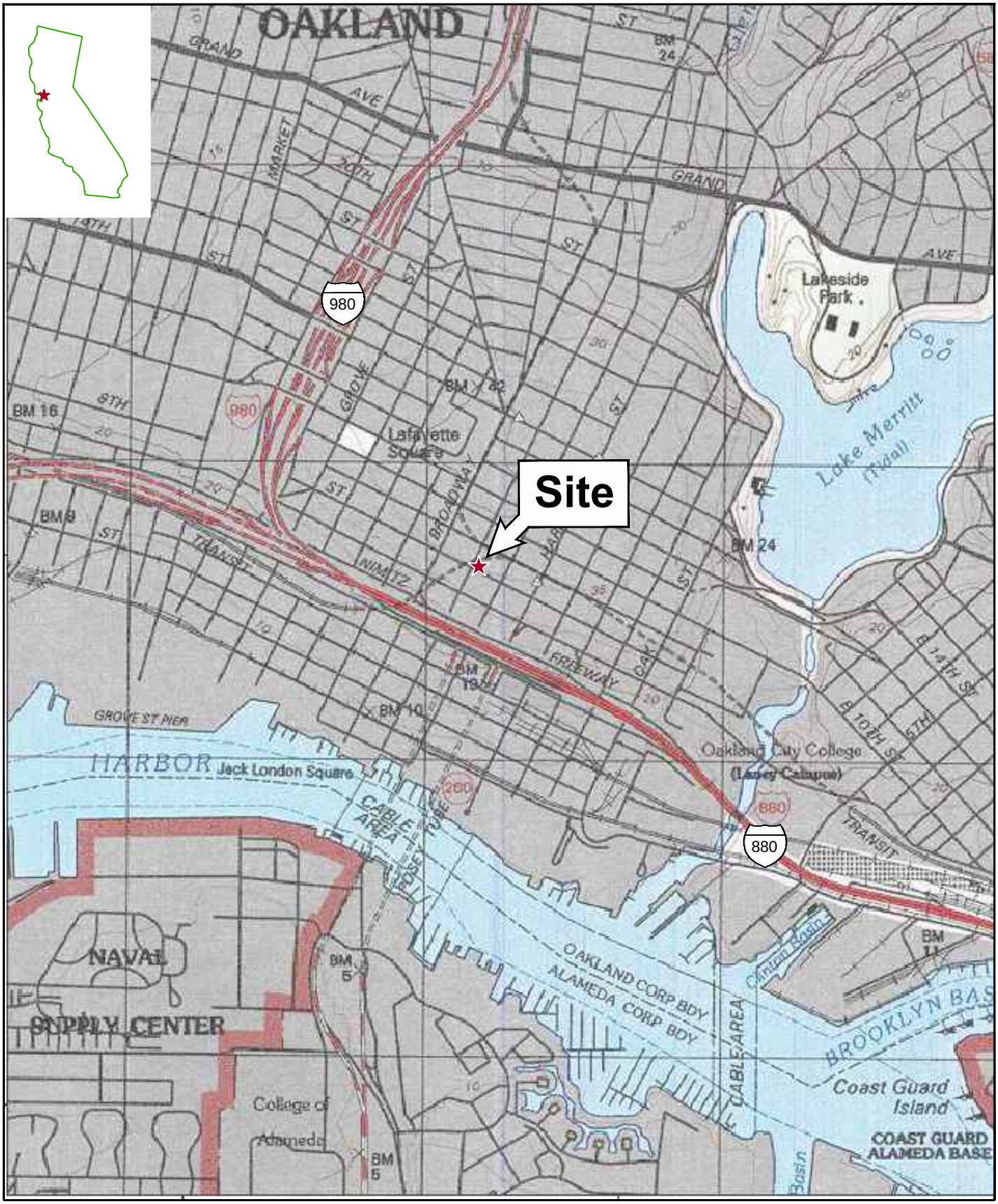
4.1 Conclusions

No hydrocarbon or VOC constituents were detected at concentrations above the ESLs from the soil gas wells (VP-1 and VP-2) and sub-slab probes (SSVP-1 and SSVP-2). Based on the sample results, no potential risk for vapor intrusion to the Site building exists.

4.2 Recommendations

Based on the conclusions of this report, GHD recommends a Site closure request report be prepared for the Site.

Figures



CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

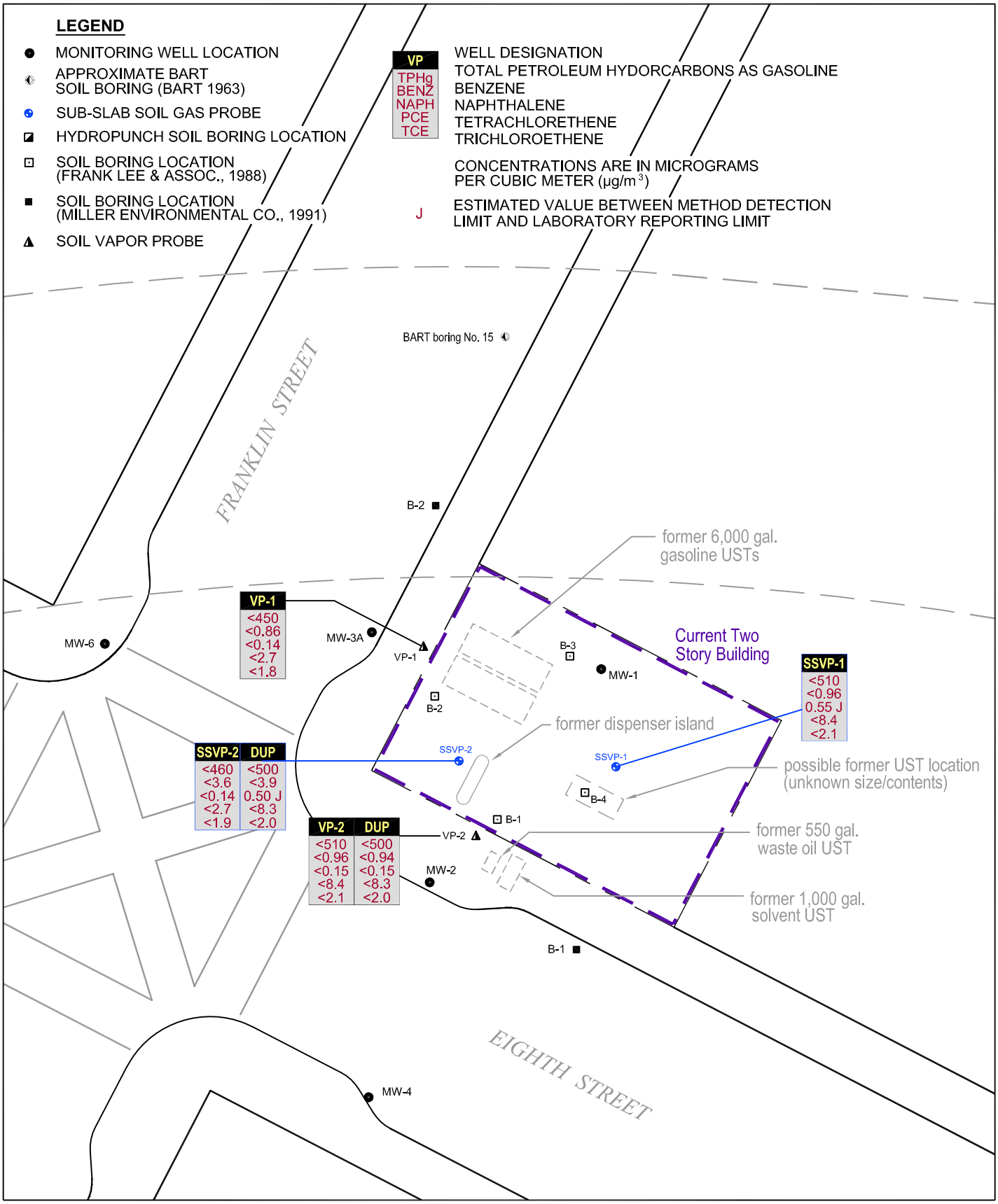
581000

Oct 30, 2015

VICINITY MAP

Figure 1

CAD File: I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000 RPTs\581000-RPT-23\581000-2015(023)GN-EM001.dwg



CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

581000

Jan 18, 2016

SITE PLAN and SOIL GAS SAMPLING RESULTS DECEMBER 16, 2015

Figure 2

CAD File: I:\IR\6-chars\5810–\581000\581000-CHIU\581000-FIGURES\581000 RPTs\581000-RPT-23\581000-2015(023)GN-EM002.dwg

Tables

TABLE 1

SOIL GAS ANALYTICAL DATA
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

			TPHg	Benzene	Toulene	Ethylbenzene	m,p-Xylene	o-Xylene	Naphthalene	PCE	TCE	cis-1,2-DCE	Vinyl Chloride	Oxygen	Carbon dioxide	Methane	Nitrogen	Helium (tracer)	Isobutane (tracer)	Butane (tracer)	Propane (tracer)
			µg/m³											%							
ESL: Soil Gas (commercial):			**2,500,000**	**420**	**1,300,000**	**4,900**	**440,000**		**360**	**2,100**	**3,000**	**31,000**	**16**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
ESL: Indoor Air (commercial):			**2,500**	**0.42**	**1,300**	**4.9**	**440**		**0.36**	**2.1**	**3.0**	**31**	**0.16**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Sub-Slab Soil Gas Screening Level*			**50,000**	**8.4**	**26,000**	**98**	**8,800**		**7.2**	**42**	**60**	**620**	**3.2**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
Sample ID	**Date Sampled**	**Depth (ft)**																			
Soil Gas Wells																					
VP-1	12/28/2006	5	--	<3.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
	7/25/2007	5	--	<3.9	<4.6	<5.2	<5.2	<5.2	--	<8.2	--	--	--	--	--	--	--	--	ND	ND	ND
	12/16/2015	**5**	**<450**	**<0.86**	**<4.2**	**<1.2**	**<1.2**	**<1.2**	**<0.14**	**<2.7**	**<1.8**	**<0.64**	**<0.54**	**18**	**2.4**	**<0.00034**	**80**	**<0.17**	**--**	**--**	**--**
VP-2	12/28/2006	5	--	<4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
	7/25/2007	5	--	<3.6	<4.3	<5.0	<5.0	<5.0	--	8.9	--	--	--	--	--	--	--	--	ND	ND	ND
	12/16/2015	**5**	**<510**	**<0.96**	**<1.5**	**<1.4**	**<1.4**	**<1.4**	**<0.15**	**<8.4**	**<2.1**	**<0.72**	**<0.61**	**19**	**1.0**	**<0.00034**	**80**	**<0.17**	**--**	**--**	**--**
Sub-Slab Probes																					
SSVP-1	**12/16/2015**	**1**	**<510**	**<0.96**	**<4.7**	**<1.4**	**<1.4**	**<1.4**	**0.55 J**	**<8.4**	**<2.1**	**<0.72**	**<0.61**	**15**	**4.1**	**<0.00025**	**81**	**0.29**	**--**	**--**	**--**
SSVP-2	**12/16/2015**	**1**	**<460**	**<3.6**	**28**	**<1.2**	**<4.9**	**<1.2**	**<0.14**	**<2.7**	**<1.9**	**<0.65**	**<0.56**	**20**	**1.0**	**<0.00023**	**78**	**0.70**	**--**	**--**	**--**
Duplicate Samples (field)																					
VP-1-DUP	12/28/2006	5	--	<4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
VP-1 Duplicate	7/25/2007	5	--	<4.0	<4.8	<5.5	6.0	<5.5	--	<6.9	--	--	--	--	--	--	--	--	ND	ND	ND
VP-2 Duplicate	12/28/2006	5	--	<4.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	ND
VP-2-DUP	**12/16/2015**	**5**	**<500**	**<0.94**	**6.3**	**<1.3**	**<1.3**	**<1.3**	**<0.15**	**<8.3**	**<2.0**	**<0.71**	**<0.60**	**19**	**1.1**	**<0.00024**	**80**	**<0.12**	**--**	**--**	**--**
SSVP-2-DUP	**12/16/2015**	**1**	**<500**	**<3.9**	**15**	**<1.3**	**<5.3**	**<1.3**	**0.50 J**	**<8.3**	**<2.0**	**<0.71**	**<0.60**	**18**	**1.4**	**<0.00024**	**80**	**0.84**	**--**	**--**	**--**

Abbreviations and Analyses:

ft = Measured in feet

ESL = Environmental Screening Levels - San Francisco Bay Regional Water Qaulity Controal Board - Workbook December 2013 - Summary Table E

* = Sub-slab soil screening levels for SSVP-1 and SSVP-2 (Indoor Air ESL for commercial/industrial scenario divided by attenuation factor of 0.05)

µg/m^3 = Micrograms per cubic meter.

Benzene, isobutane, butane and propane by modified EPA Method TO-15 (7/25/2007 event analyzed the TO-15 full scan)

PCE = Tetrachloroethene

TCE = Trichloroethene

cis-1,2-DCE = cis-1,2-dichloroethene

J = Estimated value

Appendices

Appendix A
Agency Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

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

May 11, 2015

Mr. Tommy Chiu
P.O. Box 28194
Oakland, CA 94606

Subject: Work Plan Approval for Fuel Leak Case No. RO0000196 and GeoTracker Global ID T0600100050, Bill Louie's Auto Service, 800 Franklin Street, Oakland, CA 94607

Dear Mr. Chiu:

Alameda County Environmental Health (ACEH) staff has reviewed the case file for the above referenced site including the most recent report entitled, "*Soil Gas Assessment Work Plan*," dated April 30, 2014 (Work Plan). The Work Plan, which was prepared on your behalf by Conestoga-Rovers & Associates, presents plans to assess the potential for vapor intrusion to the on-site building.

The proposed scope of work is acceptable and may be implemented as proposed. We request that you implement the proposed work and present results in the report requested below.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Jerry Wickham), and to the State Water Resources Control Board's GeoTracker website according to the following schedule and file-naming convention:

- **September 15, 2015** – Soil Vapor Sampling Report
  File to be named: SWI_R_yyyy-mm-dd RO196

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org. Online case files are available for review at the following website: http://www.acgov.org/aceh/index.htm. If your email address does not appear on the cover page of this notification, ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Bryan Fong, Conestoga-Rovers & Associates, 5900 Hollis Street, Suite A
Emeryville, CA 94608 (*Sent via E-mail to: bfong@craworld.com*)

Jerry Wickham, ACEH *(Sent via E-mail to: jerry.wickham@acgov.org*

GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

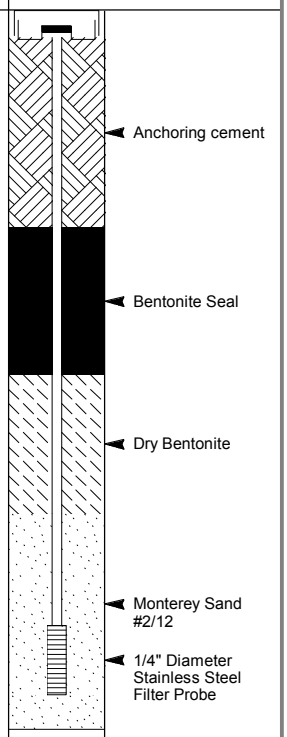
Appendix B
Sub Slab Soil Gas Probe Construction Diagrams

GHD Services Inc.
5900 Hollis Street Suite A
Emeryville, CA 94608
Telephone:
Fax:

BORING / WELL LOG

CLIENT NAME	Tommy Chiu	**BORING/WELL NAME**	SSVP-1
JOB/SITE NAME	Chiu Property	**DRILLING STARTED**	02-Dec-15
LOCATION	800 Franklin St, Oakland, CA	**DRILLING COMPLETED**	02-Dec-15
PROJECT NUMBER	581000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Cascade Drilling, L.P.	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hammer Drill	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	1.5 inches	**SCREENED INTERVALS**	NA
LOGGED BY	E. Chodoroff	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY		**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)
							Concrete	0.5
							Fill	0.8



WELL LOG (PID) I:\IR\6-CHARS\5810--581000\581000-CHIU\581000-BORING LOGS\612120~1.GPJ DEFAULT.GDT 23/12/15

GHD Services Inc.
5900 Hollis Street Suite A
Emeryville, CA 94608
Telephone:
Fax:

BORING / WELL LOG

CLIENT NAME	Tommy Chiu	**BORING/WELL NAME**	SSVP-2
JOB/SITE NAME	Chiu Property	**DRILLING STARTED**	02-Dec-15
LOCATION	800 Franklin St, Oakland, CA	**DRILLING COMPLETED**	02-Dec-15
PROJECT NUMBER	581000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Cascade Drilling, L.P.	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hammer Drill	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	1.5 inches	**SCREENED INTERVALS**	NA
LOGGED BY	E. Chodoroff	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY		**DEPTH TO WATER (Static)**	NA
REMARKS			

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Concrete	0.4	Anchoring cement; Bentonite Seal; Dry Bentonite
							Fill	0.8	Monterey Sand #2/12; 1/4" Diameter Stainless Steel Filter Probe
									Bottom of Boring @ 0.75 fbg

WELL LOG (PID) I:\IR\6-CHARS\5810--581000\581000-CHIU\581000-BORING LOGS\612120~1.GPJ DEFAULT.GDT 23/12/15

Appendix C
Field Data Sheets

GHD Services, Inc.

SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: SSVP-1

Project Name: CHIU **Date:** 12-16-15

Project No: 581000 **Sampler:** E. CHODOROFF

Site Address: 800 FRANKLIN, OAKLAND, CA **PM:** B. FONG

Purge Volume

Calculated Purge Volume: USING 6 L SUMMA - PURGE 1 IN. Hg FROM 6 L SUMMA.

Time	Flow Rate	Volume	Comments
0805 - 0807	-	-1 IN. Hg	-28 IN Hg TO -27 IN. Hg

Sample Collection

Flow Control Setting: - Summa Canister ID: 1L1823

Summa Canister Size: 1L Analysis: TO-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
0816	-30	0825	-6	0825

Notes: SHUT-IN TEST
12-15-15: -19.5 IN Hg AT 1105
-19.5 IN Hg AT 1123

He IN SHROUD: 51.7% AT 0814 51.4% AT 0824
51.5% AT 0818
50.2% AT 0820

Soil Vapor Sampling Point ID: VP-1

Project Name: CHIU **Date:** 12-16-15

Project No: 581000 **Sampler:** E. CHODOROFF

Site Address: 800 FRANKLIN OAKLAND, CA **PM:** B FONG

Purge Volume

Calculated Purge Volume: USING 6 L SUMMA - PURGE 3 IN. Hg FROM 6 L SUMMA

Time	Flow Rate	Volume	Comments
1218-1222	-		-24 IN. Hg TO -21 IN Hg

Sample Collection

Flow Control Setting: - Summa Canister ID: 1L1685

Summa Canister Size: 1 L Analysis: TO-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
1233	-30	1234	-4	1239

Notes: SHUT IN TEST (12-15-15):
AT 1024 -30 IN Hg
AT 1037 -30 IN Hg

He IN SHROUD: 55.4% AT 1234
55.9% AT 1237
51.7% AT 1239

GHD Services, Inc.

SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: SSVP-2

Project Name: CHIU **Date:** 12-16-15

Project No: 581000 **Sampler:** E. CHODOROFF

Site Address: 800 FRANKLIN, OAKLAND, CA **PM:** B. FONG

Purge Volume

Calculated Purge Volume: USING 6L SUMMA TO PURGE - 1 IN. Hg FROM SUMMA.

Time	Flow Rate	Volume	Comments
0934-0935	—	-1 IN Hg	-26 IN. Hg TO -25 IN Hg

Sample Collection

Flow Control Setting: — Summa Canister ID: 1L2723

Summa Canister Size: 1L Analysis: TO-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
1006	-26	1017	-7	1017

Notes: SHUT-IN TEST: -17.5 IN Hg AT 0946 -17.5 IN Hg AT 0956 He IN SHROUD: 52.3% AT 1005 52.5% AT 1009 51.1% AT 1013 50.2% AT 1015

Soil Vapor Sampling Point ID: SSVP-2-DUP

Project Name: CHIU **Date:** 12-16-15

Project No: 581000 **Sampler:** E. CHODOROFF

Site Address: 800 FRANKLIN, OAKLAND, CA **PM:** B. FONG

Purge Volume

Calculated Purge Volume: DUPLICATE - SEE ABOVE

Time	Flow Rate	Volume	Comments
—	—	—	—

Sample Collection

Flow Control Setting: — Summa Canister ID: 1L1564

Summa Canister Size: 1L Analysis: TO-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
1006	-30	1017	-7	1017

Notes: SHUT-IN TEST: SEE ABOVE (DUPLICATE) He IN SHROUD: SEE ABOVE

GHD Services, Inc.

SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: VP-2

Project Name: CHIU **Date:** 12-16-15

Project No: 581000 **Sampler:** E. CHODOROFF

Site Address: 800 FRANKLIN, OAKLAND, CA **PM:** B FONG

Purge Volume

Calculated Purge Volume: USING 6L SUMMA TO PURGE - 3 IN Hg FROM SUMMA

Time	Flow Rate	Volume	Comments
1100 - 1103	-	3 IN Hg	-27 IN Hg TO -24 IN Hg

Sample Collection

Flow Control Setting: - Summa Canister ID: 12379

Summa Canister Size: 1 L Analysis: TO-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
1127	-27.5	1141	-6	1141

Notes: SHUT-IN TEST: -22.5 IN Hg AT 1109
-22.5 IN Hg AT 1119

He IN SHROUD: 51.5% AT 1126 51.7% AT 1134
52.5% AT 1131
52.6% AT 1136

Soil Vapor Sampling Point ID: VP-2-DUP

Project Name: CHIU **Date:** 12-16-15

Project No: 581000 **Sampler:** E. CHODOROFF

Site Address: 800 FRANKLIN, OAKLAND, CA **PM:** B FONG

Purge Volume

Calculated Purge Volume: DUPLICATE - SEE ABOVE

Time	Flow Rate	Volume	Comments
-	-	-	-

Sample Collection

Flow Control Setting: - Summa Canister ID: 1L1743

Summa Canister Size: 1L Analysis: TO-15

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum	Sampling Time
1127	-28.5	1141	-5	1141

Notes: SHUT-IN TEST:
SEE ABOVE (DUPLICATE)

He IN SHROUD - SEE ABOVE

Appendix D
Laboratory Analytical Reports

eurofins | Air Toxics

12/30/2015
Mr. Bryan Fong
GHD
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Chiu Property
Project #: 581000
Workorder #: 1512370A

Dear Mr. Bryan Fong

The following report includes the data for the above referenced project for sample(s) received on 12/16/2015 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1512370A

Work Order Summary

CLIENT:	Mr. Bryan Fong GHD 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable GHD 2055 Niagara Falls Blvd. Suite Three Niagara Falls, NY 14304
PHONE:	510-420-0700	**P.O. #**	34002780
FAX:	510-420-9170	**PROJECT #**	581000 Chiu Property
DATE RECEIVED:	12/16/2015	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	12/30/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SSVP-1	TO-15	5.5 "Hg	15.2 psi
02A	SSVP-2	TO-15	3.3 "Hg	14.9 psi
03A	SSVP-2-DUP	TO-15	5.7 "Hg	14.4 psi
04A	VP-1	TO-15	2.4 "Hg	15.2 psi
05A	VP-2	TO-15	5.7 "Hg	14.9 psi
06A	VP-2-DUP	TO-15	5.1 "Hg	15.1 psi
07A	Lab Blank	TO-15	NA	NA
08A	CCV	TO-15	NA	NA
09A	LCS	TO-15	NA	NA
09AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Mayo DATE: 12/30/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
GHD
Workorder# 1512370A

Six 1 Liter Summa Canister (100% Certified) samples were received on December 16, 2015. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

As per client project requirements, the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit. Concentrations that are below the level at which the canister was certified may be false positives.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	SSVP-1		
Lab ID:	1512370A-01A	**Date/Time Analyzed:**	12/26/15 02:38 PM
Date/Time Collecte	12/16/15 08:25 AM	**Dilution Factor:**	2.49
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd3.i / 3122614

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.96	2.0	4.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.72	2.5	4.9	Not Detected
Ethyl Benzene	100-41-4	1.4	2.7	5.4	Not Detected
m,p-Xylene	108-38-3	1.4	2.7	5.4	Not Detected
Naphthalene	91-20-3	0.15	5.2	13	0.55 J
o-Xylene	95-47-6	1.4	2.7	5.4	Not Detected
Tetrachloroethene	127-18-4	3.0	4.2	8.4	6.6 J
Toluene	108-88-3	1.5	2.3	4.7	3.0 J
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	510	Not Detected
Trichloroethene	79-01-6	2.1	3.3	6.7	Not Detected
Vinyl Chloride	75-01-4	0.61	1.6	3.2	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	92
4-Bromofluorobenzene	460-00-4	70-130	100
Toluene-d8	2037-26-5	70-130	97

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	SSVP-2		
Lab ID:	1512370A-02A	**Date/Time Analyzed:**	12/26/15 03:05 PM
Date/Time Collecte	12/16/15 10:17 AM	**Dilution Factor:**	2.26
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd3.i / 3122615

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.88	1.8	3.6	1.2 J
cis-1,2-Dichloroethene	156-59-2	0.65	2.2	4.5	Not Detected
Ethyl Benzene	100-41-4	1.2	2.4	4.9	Not Detected
m,p-Xylene	108-38-3	1.2	2.4	4.9	2.8 J
Naphthalene	91-20-3	0.14	4.7	12	Not Detected
o-Xylene	95-47-6	1.2	2.4	4.9	Not Detected
Tetrachloroethene	127-18-4	2.7	3.8	7.7	Not Detected
Toluene	108-88-3	1.4	2.1	4.2	28
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	460	Not Detected
Trichloroethene	79-01-6	1.9	3.0	6.1	Not Detected
Vinyl Chloride	75-01-4	0.56	1.4	2.9	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	91
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	SSVP-2-DUP		
Lab ID:	1512370A-03A	**Date/Time Analyzed:**	12/26/15 03:31 PM
Date/Time Collecte	12/16/15 10:17 AM	**Dilution Factor:**	2.44
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd3.i / 3122616

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.94	1.9	3.9	0.99 J
cis-1,2-Dichloroethene	156-59-2	0.71	2.4	4.8	Not Detected
Ethyl Benzene	100-41-4	1.3	2.6	5.3	Not Detected
m,p-Xylene	108-38-3	1.3	2.6	5.3	1.6 J
Naphthalene	91-20-3	0.15	5.1	13	0.50 J
o-Xylene	95-47-6	1.3	2.6	5.3	Not Detected
Tetrachloroethene	127-18-4	3.0	4.1	8.3	3.4 J
Toluene	108-88-3	1.5	2.3	4.6	15
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	500	Not Detected
Trichloroethene	79-01-6	2.0	3.3	6.6	Not Detected
Vinyl Chloride	75-01-4	0.60	1.6	3.1	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	95
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	97

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	VP-1		
Lab ID:	1512370A-04A	**Date/Time Analyzed:**	12/26/15 03:57 PM
Date/Time Collecte	12/16/15 12:39 PM	**Dilution Factor:**	2.21
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd3.i / 3122617

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.86	1.8	3.5	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.64	2.2	4.4	Not Detected
Ethyl Benzene	100-41-4	1.2	2.4	4.8	Not Detected
m,p-Xylene	108-38-3	1.2	2.4	4.8	Not Detected
Naphthalene	91-20-3	0.14	4.6	12	Not Detected
o-Xylene	95-47-6	1.2	2.4	4.8	Not Detected
Tetrachloroethene	127-18-4	2.7	3.7	7.5	Not Detected
Toluene	108-88-3	1.4	2.1	4.2	1.5 J
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	450	Not Detected
Trichloroethene	79-01-6	1.8	3.0	5.9	Not Detected
Vinyl Chloride	75-01-4	0.54	1.4	2.8	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	96

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	VP-2		
Lab ID:	1512370A-05A	**Date/Time Analyzed:**	12/26/15 04:24 PM
Date/Time Collecte	12/16/15 11:41 AM	**Dilution Factor:**	2.48
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd3.i / 3122618

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.96	2.0	4.0	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.72	2.4	4.9	Not Detected
Ethyl Benzene	100-41-4	1.4	2.7	5.4	Not Detected
m,p-Xylene	108-38-3	1.4	2.7	5.4	Not Detected
Naphthalene	91-20-3	0.15	5.2	13	Not Detected
o-Xylene	95-47-6	1.4	2.7	5.4	Not Detected
Tetrachloroethene	127-18-4	3.0	4.2	8.4	6.8 J
Toluene	108-88-3	1.5	2.3	4.7	Not Detected
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	510	Not Detected
Trichloroethene	79-01-6	2.1	3.3	6.7	Not Detected
Vinyl Chloride	75-01-4	0.61	1.6	3.2	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	103
Toluene-d8	2037-26-5	70-130	96

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	VP-2-DUP		
Lab ID:	1512370A-06A	**Date/Time Analyzed:**	12/26/15 04:50 PM
Date/Time Collecte	12/16/15 11:41 AM	**Dilution Factor:**	2.44
Media:	1 Liter Summa Canister (100% Certified)	**Instrument/Filename:**	msd3.i / 3122619

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.94	1.9	3.9	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.71	2.4	4.8	Not Detected
Ethyl Benzene	100-41-4	1.3	2.6	5.3	Not Detected
m,p-Xylene	108-38-3	1.3	2.6	5.3	Not Detected
Naphthalene	91-20-3	0.15	5.1	13	Not Detected
o-Xylene	95-47-6	1.3	2.6	5.3	Not Detected
Tetrachloroethene	127-18-4	3.0	4.1	8.3	6.7 J
Toluene	108-88-3	1.5	2.3	4.6	6.3
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	500	Not Detected
Trichloroethene	79-01-6	2.0	3.3	6.6	Not Detected
Vinyl Chloride	75-01-4	0.60	1.6	3.1	Not Detected

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	98

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	Lab Blank		
Lab ID:	1512370A-07A	**Date/Time Analyzed:**	12/26/15 10:10 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3122607a

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	71-43-2	0.39	0.80	1.6	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.29	0.99	2.0	Not Detected
Ethyl Benzene	100-41-4	0.55	1.1	2.2	Not Detected
m,p-Xylene	108-38-3	0.55	1.1	2.2	Not Detected
Naphthalene	91-20-3	0.062	2.1	5.2	0.14 J
o-Xylene	95-47-6	0.55	1.1	2.2	Not Detected
Tetrachloroethene	127-18-4	1.2	1.7	3.4	Not Detected
Toluene	108-88-3	0.61	0.94	1.9	Not Detected
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	200	Not Detected
Trichloroethene	79-01-6	0.83	1.3	2.7	Not Detected
Vinyl Chloride	75-01-4	0.25	0.64	1.3	0.30 J

J = Estimated value.
D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	97

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	CCV		
Lab ID:	1512370A-08A	**Date/Time Analyzed:**	12/26/15 07:38 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3122602

Compound	CAS#	%Recovery
Benzene	71-43-2	120
cis-1,2-Dichloroethene	156-59-2	113
Ethyl Benzene	100-41-4	114
m,p-Xylene	108-38-3	116
Naphthalene	91-20-3	100
o-Xylene	95-47-6	114
Tetrachloroethene	127-18-4	123
Toluene	108-88-3	112
TPH ref. to Gasoline (MW=100)	9999-9999-038	100
Trichloroethene	79-01-6	112
Vinyl Chloride	75-01-4	110

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	94
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	95

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	LCS		
Lab ID:	1512370A-09A	**Date/Time Analyzed:**	12/26/15 08:03 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3122603

Compound	CAS#	%Recovery
Benzene	71-43-2	111
cis-1,2-Dichloroethene	156-59-2	103
Ethyl Benzene	100-41-4	104
m,p-Xylene	108-38-3	104
Naphthalene	91-20-3	85
o-Xylene	95-47-6	105
Tetrachloroethene	127-18-4	113
Toluene	108-88-3	102
TPH ref. to Gasoline (MW=100)	9999-9999-038	Not Spiked
Trichloroethene	79-01-6	106
Vinyl Chloride	75-01-4	110

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	98
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	96

* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS FULL SCAN
Chiu Property

Client ID:	LCSD		
Lab ID:	1512370A-09AA	**Date/Time Analyzed:**	12/26/15 08:27 AM
Date/Time Collecte	NA - Not Applicable	**Dilution Factor:**	1.00
Media:	NA - Not Applicable	**Instrument/Filename:**	msd3.i / 3122604

Compound	CAS#	%Recovery
Benzene	71-43-2	110
cis-1,2-Dichloroethene	156-59-2	102
Ethyl Benzene	100-41-4	105
m,p-Xylene	108-38-3	103
Naphthalene	91-20-3	90
o-Xylene	95-47-6	105
Tetrachloroethene	127-18-4	114
Toluene	108-88-3	102
TPH ref. to Gasoline (MW=100)	9999-9999-038	Not Spiked
Trichloroethene	79-01-6	107
Vinyl Chloride	75-01-4	112

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	93
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	98

* % Recovery is calculated using unrounded analytical results.

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12/31/2015
Mr. Bryan Fong
GHD
5900 Hollis Street
Suite A
Emeryville CA 94608

Project Name: Chiu Property
Project #: 581000
Workorder #: 1512370B

Dear Mr. Bryan Fong

The following report includes the data for the above referenced project for sample(s) received on 12/16/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

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WORK ORDER #: 1512370B

Work Order Summary

CLIENT:	Mr. Bryan Fong GHD 5900 Hollis Street Suite A Emeryville, CA 94608	**BILL TO:**	Accounts Payable GHD 2055 Niagara Falls Blvd. Suite Three Niagara Falls, NY 14304
PHONE:	510-420-0700	**P.O. #**	34002780
FAX:	510-420-9170	**PROJECT #**	581000 Chiu Property
DATE RECEIVED:	12/16/2015	**CONTACT:**	Kyle Vagadori
DATE COMPLETED:	12/31/2015		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SSVP-1	Modified ASTM D-1946	5.5 "Hg	15.2 psi
02A	SSVP-2	Modified ASTM D-1946	3.3 "Hg	14.9 psi
03A	SSVP-2-DUP	Modified ASTM D-1946	5.7 "Hg	14.4 psi
04A	VP-1	Modified ASTM D-1946	2.4 "Hg	15.2 psi
05A	VP-2	Modified ASTM D-1946	5.7 "Hg	14.9 psi
06A	VP-2-DUP	Modified ASTM D-1946	5.1 "Hg	15.1 psi
07A	Lab Blank	Modified ASTM D-1946	NA	NA
07B	Lab Blank	Modified ASTM D-1946	NA	NA
08A	LCS	Modified ASTM D-1946	NA	NA
08AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 12/31/15

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified ASTM D-1946
GHD
Workorder# 1512370B

Six 1 Liter Summa Canister (100% Certified) samples were received on December 16, 2015. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

As per project specific client request the laboratory has reported estimated values for target compound hits that are below the Reporting Limit but greater than the Method Detection Limit.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SSVP-1

Lab ID#: 1512370B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	15
Nitrogen	0.25	81
Carbon Dioxide	0.025	4.1
Helium	0.12	0.29

Client Sample ID: SSVP-2

Lab ID#: 1512370B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	20
Nitrogen	0.23	78
Carbon Dioxide	0.023	1.0
Methane	0.00023	0.00018 J
Helium	0.11	0.70

Client Sample ID: SSVP-2-DUP

Lab ID#: 1512370B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	18
Nitrogen	0.24	80
Carbon Dioxide	0.024	1.4
Helium	0.12	0.84

Client Sample ID: VP-1

Lab ID#: 1512370B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.34	18
Nitrogen	0.34	80
Carbon Dioxide	0.034	2.4

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VP-2

Lab ID#: 1512370B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.34	19
Nitrogen	0.34	80
Carbon Dioxide	0.034	1.0

Client Sample ID: VP-2-DUP

Lab ID#: 1512370B-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	19
Nitrogen	0.24	80
Carbon Dioxide	0.024	1.1
Helium	0.12	0.025 J

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Client Sample ID: SSVP-1

Lab ID#: 1512370B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122818**	**Date of Collection: 12/16/15 8:25:00 AM**	
Dil. Factor:	**2.49**	**Date of Analysis: 12/28/15 05:30 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.25	15
Nitrogen	0.25	81
Carbon Dioxide	0.025	4.1
Methane	0.00025	Not Detected
Helium	0.12	0.29

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: SSVP-2

Lab ID#: 1512370B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122819**	**Date of Collection: 12/16/15 10:17:00 A**	
Dil. Factor:	**2.26**	**Date of Analysis: 12/28/15 05:57 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	20
Nitrogen	0.23	78
Carbon Dioxide	0.023	1.0
Methane	0.00023	0.00018 J
Helium	0.11	0.70

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: SSVP-2-DUP

Lab ID#: 1512370B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122820**	**Date of Collection: 12/16/15 10:17:00 A**	
Dil. Factor:	**2.44**	**Date of Analysis: 12/28/15 06:28 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	18
Nitrogen	0.24	80
Carbon Dioxide	0.024	1.4
Methane	0.00024	Not Detected
Helium	0.12	0.84

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: VP-1

Lab ID#: 1512370B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122825**	**Date of Collection:**	**12/16/15 12:39:00 P**
Dil. Factor:	**3.40**	**Date of Analysis:**	**12/28/15 08:55 PM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.34	18
Nitrogen	0.34	80
Carbon Dioxide	0.034	2.4
Methane	0.00034	Not Detected
Helium	0.17	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: VP-2

Lab ID#: 1512370B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122826**	**Date of Collection:**	**12/16/15 11:41:00 A**
Dil. Factor:	**3.41**	**Date of Analysis:**	**12/28/15 09:20 PM**

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.34	19
Nitrogen	0.34	80
Carbon Dioxide	0.034	1.0
Methane	0.00034	Not Detected
Helium	0.17	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: VP-2-DUP

Lab ID#: 1512370B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122824**	**Date of Collection: 12/16/15 11:41:00 A**	
Dil. Factor:	**2.44**	**Date of Analysis: 12/28/15 08:29 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	19
Nitrogen	0.24	80
Carbon Dioxide	0.024	1.1
Methane	0.00024	Not Detected
Helium	0.12	0.025 J

J = Estimated value.

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: Lab Blank

Lab ID#: 1512370B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/15 09:41 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: Lab Blank

Lab ID#: 1512370B-07B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122803c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/15 09:16 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

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Client Sample ID: LCS

Lab ID#: 1512370B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122802**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/15 08:43 AM**	

Compound	%Recovery	Method Limits
Oxygen	100	85-115
Nitrogen	92	85-115
Carbon Dioxide	98	85-115
Methane	106	85-115
Helium	103	85-115

Container Type: NA - Not Applicable

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Client Sample ID: LCSD

Lab ID#: 1512370B-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10122827**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/28/15 09:48 PM**	

Compound	%Recovery	Method Limits
Oxygen	100	85-115
Nitrogen	92	85-115
Carbon Dioxide	99	85-115
Methane	105	85-115
Helium	103	85-115

Container Type: NA - Not Applicable