June 12, 2017

City Ventures

Mr. Keith Nowell
Hazardous Materials Specialist
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re:
Third Addendum to the Remedial Action Plan
City Ventures Oakland 2 Site
2240 Filbert Street, Oakland
ACEH Site RO#0003157
Stantec PN: 185703027

Dear Mr. Nowell:

Enclosed with this cover letter is the Third Addendum to the Remedial Action Plan for Multiple Parcels for the above-referenced City Ventures Oakland 2 location.

As an authorized representative of City Ventures, I offer the following statement:

I, Andrew Warner, have read and acknowledge the content, recommendations, and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

Should you have any questions please contact me at (415) 845-0293 or andrew@cityventures.com.

Thank you,

Andrew Warner
Director Development
City Ventures

Stantec Consulting Services Inc.
3875 Atherton Road
Rocklin, California 95765

June 12, 2017

Mr. Keith Nowell
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

SUBJECT: **City Ventures Oakland 2 - MULTIPLE PARCELS, WEST GRAND AVENUE, FILBERT AND MYRTLE STREET, OAKLAND, CALIFORNIA – RO0003157**

REFERENCE: **THIRD ADDENDUM TO THE REMEDIAL ACTION PLAN**

Dear Mr. Nowell,

On behalf of City Ventures (CV) for the real property located at 2240 Filbert Street in Oakland, California (the "Site"; **Figure 1**), Stantec Consulting Services Inc. (Stantec) is submitting this Addendum to the previously submitted *Remedial Action Plan* (RAP), prepared by Stantec and dated March 2, 2017. This Addendum includes the data collected as part of the 2017 additional assessment activities, discusses the plan to eliminate the potential risk from methane in soil vapor (detected in one soil vapor sample above 5 percent (%) by volume, sample SV-5, located in the northwestern corner of the West Grand Block), and summarizes the content of the March 2, 2017 RAP and subsequent RAP Addendums. CV is proposing to redevelop the property for multi-unit residential housing. This Addendum was prepared to satisfy the request from Alameda County Environmental Health (ACEH) in an email dated June 7, 2017, and fulfils requirements necessary to allow for approval of the RAP by ACEH, and to approve CV to move forward now with the final environmental mitigation and property redevelopment activities, concurrently.

2017 ADDITIONAL ASSESSMENT ACTIVITIES

In accordance with the March 3, 2017 *Data Gap Investigation Work Plan* and the March 14, 2017 *Addendum to the Data Gap Investigation Work Plan*, soil, soil vapor, and groundwater samples were collected to fill data gaps and define the lateral and vertical extent of residual contamination at the Site. Sampling locations are shown on **Figure 2** and data summarized in **Tables 1 through 5**. Laboratory analytical data reports and pertinent laboratory communication are provided in **Attachment A**.

The following data gaps were addressed during the 2017 assessment at the Site:

- Soil vapor samples were collected at the Market Street Block to confirm residual impacts in groundwater and saturated soil does not pose an unacceptable risk to future residential occupants of the property.

- Additional soil vapor samples were collected at the West Grand Block to further delineate impacts reported during the 2014 and 2016 investigations.

THIRD ADDENDUM TO THE REMEDIAL ACTION PLAN

- Soil parameter data was collected to confirm conservative default parameters used in the HHRA Johnson & Ettinger model calculations.

- Shallow soil data was collected at the West Grand Block to complete characterization of shallow soil, where previous investigation had reported possible fill and where previous site grading activities had disturbed the shallow soil, and to address residual metals and historical detections of petroleum hydrocarbons in soil.

- A water sample was collected at the southeast corner of the West Grand Block to assess current groundwater conditions and confirm that groundwater is not impacted from offsite and upgradient source(s) at concentrations of concern.

- Lead impact above the screening level in soil was discovered and delineated at boring S-5 on the West Grand Block.

- Benzene-affected soil vapor was discovered at a concentration above the screening level and delineated at location SV-23 on the West Grand Block.

Work Completed

A summary of the work completed from March 22, 2017 through May 3, 2017 is provided below.

Soil Assessment

Twelve borings designated as S-1 through S-12 were advanced at the Site to depths of 3 feet below ground surface (bgs) at the locations shown on **Figure 2**. Samples were collected from each location at 0.5 and 3 feet bgs. The shallow 0.5 foot bgs samples were first analyzed, and if results indicated a need for further delineation, the 3 feet bgs sample was analyzed (only the 3 feet bgs sample from S-5 was analyzed following a detection of lead above screening levels from the shallower sample). Soil samples were used to assess for the presence of contaminants historically detected from borings B-44 and B-37, to further characterize shallow soils across the site, to close a data gap identified in the RAP regarding assessment of shallow fill noted in historical assessment of the southwestern portion of the West Grand Block, and to provide data in other areas where shallow data was lacking. Additionally, select samples, were used to obtain geophysical soil parameter data that helped verify Site specific assumptions made in the HHRA.

Soil samples were collected in laboratory supplied containers for shipment in an ice-chilled cooler, and under chain of custody documentation to Curtis and Thompkins, located in Berkeley, California. Results of the soil sample analysis are presented on **Table 1**.

Soil Vapor Assessment

Additional soil vapor assessment was conducted following applicable guidelines proposed in the California Department of Toxic Substances Control (DTSC) guidance document Advisory – Active

THIRD ADDENDUM TO THE REMEDIAL ACTION PLAN

Soil Gas Investigations updated April 2012 (DTSC, 2012). A summary of the proposed assessment activities is provided below.

Vapor probe sampling was completed to provide adequate characterization of conditions across the West Grand Block and Market Street Block areas. Soil Vapor locations SV-15 through SV-38 were advanced to depths of approximately 2.5 to 5 feet bgs (based on sample refusal) at the locations shown on **Figure 2**. An initial attempt was made to collect vapor samples at approximately 5 feet bgs at each location, however, due to impermeable lithology a sample was not able to be collected from 5 feet bgs at every location (**Table 2**). If refusal was encountered, the boring was grouted to the surface and a new location was attempted at a shallower depth a few feet away. In some locations, this was repeated several times until a sample could be collected. In some cases, the required purge and sample volume needed for collection into the laboratory supplied Summa canisters could not be achieved.

Due to impermeable lithology encountered across the entire Site, only six of the planned 17 soil vapor locations were able to be sampled into Summa canisters for TO-15 analysis at an offsite fixed-based laboratory (Curtis and Tompkins, Berkeley, CA). Alternatively, and after discussion between Tom Graf and Andrew Warner on behalf of CV and Keith Nowell and Dilan Roe of ACEH on April 13, 2017, all locations were sampled and only directly analyzed in the field using TEG Northern California's (TEG) direct push rig and onsite laboratory (the onsite mobile laboratory method requires less sample volume for analysis). TEG advanced a soil vapor probe to the desired depth at each location, and in accordance with sample collection methodology described in the DTSC guidance document Advisory – Active Soil Gas Investigations updated April 2012 (DTSC, 2012), samples were collected and analyzed onsite by EPA Method 8260. Soil vapor results are provided on **Tables 2 through 4**.

Groundwater Sample Collection

A groundwater sample (W-1) was collected at the southeast corner of the West Grand Block to assess for potential impacts from historical activities upgradient of the Site. A direct push rod was advanced and a screen set from approximately 15 to 20 feet bgs where water was first encountered. The temporary screen was set through the rods, opened, and let sit until the water level had stabilized (at an approximate depth of 9.5 feet bgs). Groundwater was collected using a new, unused Teflon bailer and decanted into laboratory supplied containers for shipment in an ice-chilled cooler, and under chain of custody documentation to Curtis and Thompkins. Results of the water sample analysis are presented on **Table 5**.

Summary of Findings

Based on data collected as part of the 2017 assessment, one location was identified where lead was reported in shallow soil above the regulatory screening level (boring S-5) and one location was identified where benzene was reported in soil gas above the site specific screening level (boring S-23). As discussed in the May 26, 2017 *Addendum to the Remedial Action Plan*, soil will be excavated in the area of the benzene and lead impacts and backfilled with low-permeability fill

material brought in to mitigate the risk to future residence at the Site. Fill material will be selected and approved based on criteria presented in the Second Addendum to the Remedial Action Plan, dated May 19, 2017. By following the recommendations in the May 26, 2017 *Addendum to the Remedial Action Plan*, these issues will be mitigated to a level that will allow residential use.

Additionally, based on results of historical and recent assessments, only one additional sample location at the Site was identified with a detected analyte at a concentration that could potentially pose an environmental concern for future Site use as multi-unit residential housing. A historical detection of methane (See Table 3 from the March 2, 2017 *Remedial Action Plan* in **Attachment B**) in the northwest corner of the property was reported at a concentration above the conservative screening level of 5% by volume in soil vapor at a depth of 5 feet bgs (**Figure 3**). The ground surface in that area is depressed approximately 4 feet below surrounding grade making the sample collection depth approximately 9 feet below future final grade. Methane concentrations are elevated at this depth as a result of being within 1 to 2 feet of groundwater where reductive biodegradation of petroleum hydrocarbons is generating the methane.

Based on the results of the March 2, 2017 *Human Health Risk Assessment* (HHRA) and using values generated in the Apex May 24, 2017 letter titled *Site Specific Soil Screening Levels for Vinyl Chloride and 1,1,2-Trichloroethane* (**Attachment C**), no other contaminants of potential concern (COPCs) were identified in historical or recent data at concentrations that exceed current residential ESLs or accepted risk-based criteria for residential use.

Details of CV's plan to mitigate the remaining methane concern are discussed in the following sections.

VAPOR MITIGATION SYSTEM AND OPTIONAL SAMPLING

In order to ensure that methane impacts reported in soil vapor at the northeast corner of the West Grand Block are mitigated, a vapor mitigation system will be installed beneath the corner building proposed at the potentially affected area. As discussed in Section 4.3 of the March 2, 2017 *Remedial Action Plan*, the vapor mitigation system will be constructed in accordance with City and County requirements and in accordance with the basis of design (Appendix G of the March 2, 2017 *Remedial Action Plan*). The location of the vapor mitigation system is shown on **Figure 4**.

Because the methane gas measurement was collected from an area that will receive import soil, CV may opt to conduct additional soil vapor sampling following completion of filling of the depressed area, to eliminate the need for the proposed vapor mitigation system. If additional sampling is performed, the sample will be collected at 5 feet below final grade after completion of grading activities in that area. Vapor samples will be collected at the previous location of SV-5, and east of SV-5 to document residual methane concentrations within the area overlying elevated petroleum hydrocarbons in groundwater. If ACEH concludes that methane concentrations are shown to not present a risk to overlying buildings, CV will not be required to install of a vapor mitigation system.

REMEDIAL ACTION PLAN AND ADDENDUMS – SUMMARY OF CONTENT

As indicated previously in this report, this *Third Addendum to the Remedial Action Plan is the final document to accompany the* March 2, 2017 *Remedial Action Plan,* the May 26, 2017 *Addendum*

THIRD ADDENDUM TO THE REMEDIAL ACTION PLAN

to the Remedial Action Plan, and the May 19, 2017 *Second Addendum to the Remedial Action Plan for Fill Import Approval*. The following section summarizes these reports and the final selected remedial approach outlined in the collective reports.

The March 2, 2017 *Remedial Action Plan* contains a Site Background which includes a discussion of historical Site use and historical investigations, a Data Evaluation which includes the conceptual site conceptual model, the *Human Health Risk Assessment* generated screening levels, and a discussion of planned or potential Remedial Action Implementation. All aspects of the March 2, 2017 *Remedial Action Plan* have been completed, or in the case of the Vapor Mitigation Plan, will be completed. As indicated in the addendums that followed, modifications to the original sampling plan in the March 2, 2107 *Remedial Action Plan* were made.

The May 26, 2017 *Addendum to the Remedial Action Plan* discussed the handling of minor lead-impacted soil located at the West Grand Block, centered around sample location S-5, and the removal of soil in that same general area, centered around SV-23, to address elevated benzene reported in soil vapor. This remedial action will be completed during grading for Site redevelopment.

The May 19, 2017 *Second Addendum to the Remedial Action Plan for Fill Import Approval* addresses the selection process for potential fill material to be used at the Site and the procedures for obtaining approval for use of imported material. Following the selection process and sampling criteria outlined in the May 19, 2017 *Second Addendum to the Remedial Action Plan for Fill Import Approval*, any import fill material identified by CV and approved by ACEH that meets the criteria and testing described therein can be used at the Site.

This *Third Addendum to the Remedial Action Plan* identifies one final area that will require mitigation at the Site, and identifies the vapor mitigation system previously proposed in the March 2, 2017 *Remedial Action Plan* as the final remedy. To verify methane mitigation is needed following the placement of approved fill in the northern part of the West Grand Block, CV may elect to conduct additional sampling at the SV-5 location. If post-backfill soil vapor sampling at the SV-5 location confirms the absence of methane above concentrations of concern, a vapor mitigation system will not be installed beneath the corner building during property redevelopment to address the methane impacts. This Third Addendum concludes that the Vapor Mitigation System outlined in Section 4.3 of the March 2, 2017 *Remedial Action Plan* is more than adequate to mitigate that final environmental concern.

CONCLUSION

Based on historical and recent data, and with the methane vapor mitigation described above, the Site is adequately assessed and areas with impacts above screening levels are delineated. With the completion of the remedial actions proposed in the May 26, 2017 *Addendum to the Remedial Action Plan* and the installation of a vapor mitigation system described above, the Site will meet residential standards and require no further action. Stantec recommends that ACEH approve CV to proceed with redevelopment of the property to multi-unit residential housing and approve the RAP and Addendums.

THIRD ADDENDUM TO THE REMEDIAL ACTION PLAN

Thank you for your cooperation on this project. Should you have any questions or need additional information, please contact either of the undersigned.

Regards,

STANTEC CONSULTING SERVICES INC.

Dan Schreiner, P.G.
Senior Geologist
Tel. 916.472.3915
dan.schreiner@stantec.com

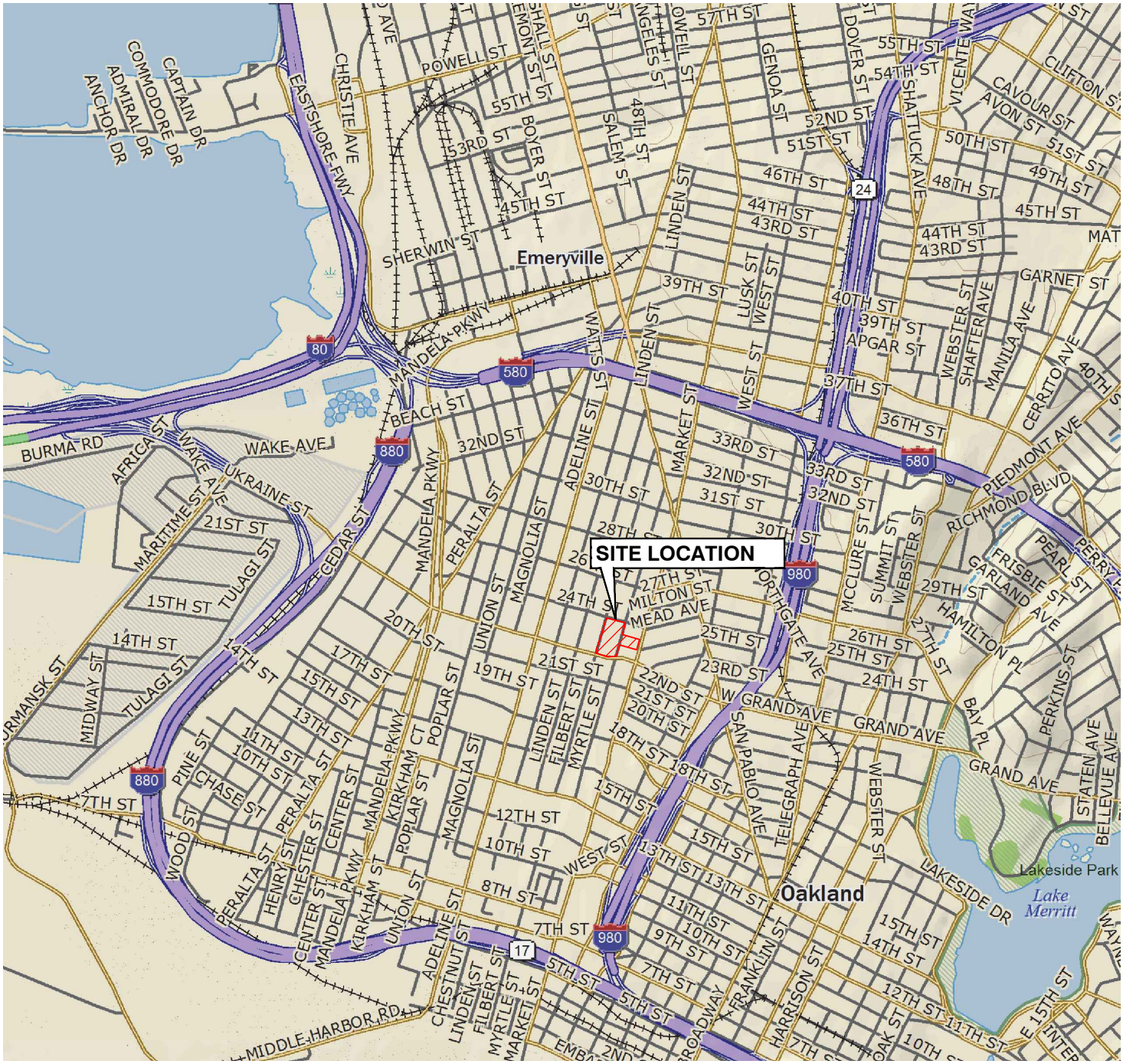
PROFESSIONAL GEOLOGIST
DAN SCHREINER
No. 7646
STATE OF CALIFORNIA

Angus E. McGrath, Ph.D.
Principal Geochemist
Tel. 925.296.2134
angus.mcgrath@stantec.com

Cc. Mr. Andrew Warner, City Ventures
Geotracker (upload)

Attachments:
Figure 1 – Site Location Map
Figure 2 – Site Plan with Sampling Locations
Figure 3 - Methane Results for Northern West Grand Block
Figure 4 – Site Development Plan with Vapor Barrier Location
Table 1 – 2017 Analytical Results for Soil Samples
Table 2 - 2017 Analytical Results for Soil Vapor Samples - TEG Data
Table 3 – 2017 Analytical Results for Soil Vapor Samples – Methane and Oxygen
Table 4 - 2017 Analytical Results for Soil Vapor Samples – TO-15 Analysis
Table 5 - 2017 Analytical Results for Groundwater Samples
Attachment A – Laboratory Analytical Reports and Communication
Attachment B – Table 3 from the March 2, 2017 *Remedial Action Plan*
Attachment C – *Site Specific Soil Screening Levels for Vinyl Chloride and 1,1,2-Trichloroethane,* Apex, May 24, 2017

FIGURES



North

CALIFORNIA

1 1/2 0 1
SCALE (MILES)

1000 0 1000 2000 3000 4000 5000 6000 7000
SCALE (FEET)

REFERENCE: USGS 7.5 MINUTE QUADRANGLE, OAKLAND WEST, CALIFORNIA

Stantec
1340 Treat Boulevard, Suite 300
Walnut Creek CA 94597-7966
Ph: (925) 296-2133 Fax: (925) 941-1401

FOR:
CITY VENTURES
MULTIPLE PARCELS
W. GRAND AVE. FILBERT, AND MYRTLE ST.
OAKLAND, CALIFORNIA

SITE LOCATION MAP

FIGURE: **1**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185703027.200.0001	MDR	DS	AS	2/27/17

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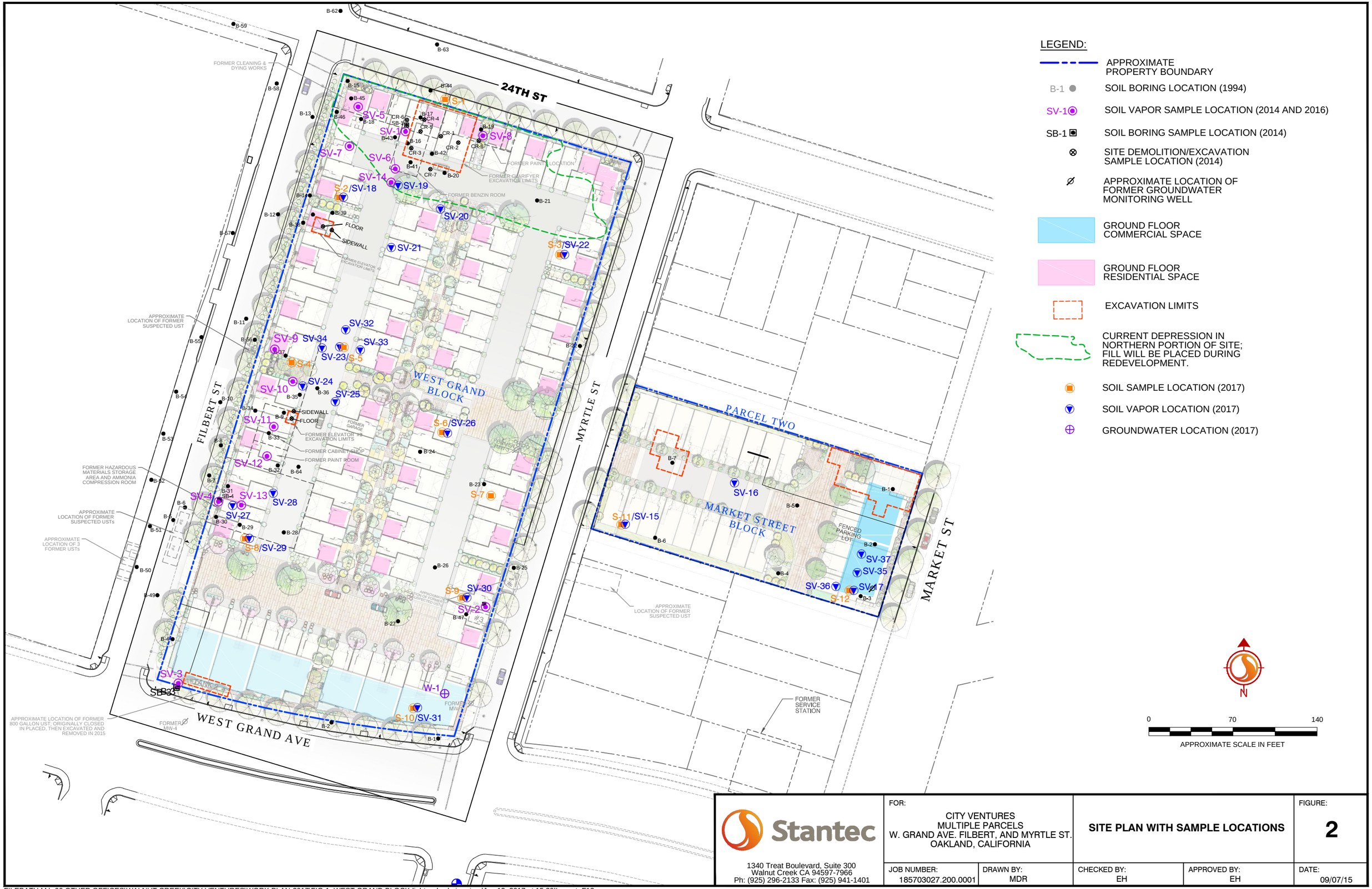

Stantec 1340 Treat Boulevard, Suite 300 Walnut Creek CA 94597-7966 Ph: (925) 296-2133 Fax: (925) 941-1401	FOR: CITY VENTURES MULTIPLE PARCELS W. GRAND AVE. FILBERT, AND MYRTLE ST. OAKLAND, CALIFORNIA	**SITE PLAN WITH SAMPLE LOCATIONS**	FIGURE: **2**
	JOB NUMBER: 185703027.200.0001	DRAWN BY: MDR	CHECKED BY: EH	APPROVED BY: EH	DATE: 09/07/15

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LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- SOIL VAPOR SAMPLE LOCATION (2014 AND 2016)
- SOIL SAMPLE LOCATION (2017)
- SOIL VAPOR LOCATION (2017)
- METHANE, AS % BY VOLUME
- GROUND FLOOR RESIDENTIAL SPACE
- VAPOR BARRIER

N

0 80 160

APPROXIMATE SCALE IN FEET

Stantec

1340 Treat Boulevard, Suite 300
Walnut Creek CA 94597-7966
Ph: (925) 296-2133 Fax: (925) 941-1401

FOR: CITY VENTURES
MULTIPLE PARCELS
W. GRAND AVE. FILBERT, AND MYRTLE ST.
OAKLAND, CALIFORNIA

METHANE RESULTS FOR NORTHERN WEST GRAND BLOCK

FIGURE: **3**

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185703027.200.0001	RRR/MDR	EH	EH	09/07/15

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LEGEND:

- APPROXIMATE PROPERTY BOUNDARY
- GROUND FLOOR COMMERCIAL SPACE
- GROUND FLOOR RESIDENTIAL SPACE
- VAPOR BARRIER

24TH ST

FILBERT ST

MYRTLE ST

MARKET ST

WEST GRAND AVE

WEST GRAND BLOCK

MARKET STREET BLOCK

APPROXIMATE LOCATION OF FORMER SUSPECTED UST

FORMER HAZARDOUS MATERIALS STORAGE AREA AND AMMONIA COMPRESSION ROOM

APPROXIMATE LOCATION OF 3 FORMER USTs

FORMER PAINT LOCATION

FORMER BENZIN ROOM

FORMER ELEVATOR

FORMER CAR SHOP

FORMER PAINT ROOM

APPROXIMATE LOCATION OF FORMER 800 GALLON UST (ORIGINALLY CLOSED IN PLACED, THEN EXCAVATED AND REMOVED IN 2015)

APPROXIMATE LOCATION OF FORMER UST

FORMER SERVICE STATION

N

0 80 160

APPROXIMATE SCALE IN FEET

Stantec
1340 Treat Boulevard, Suite 300
Walnut Creek CA 94597-7966
Ph: (925) 296-2133 Fax: (925) 941-1401

FOR: CITY VENTURES
MULTIPLE PARCELS
W. GRAND AVE. FILBERT, AND MYRTLE ST.
OAKLAND, CALIFORNIA

SITE DEVELOPMENT PLAN WITH VAPOR BARRIER LOCATION

FIGURE: 4

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185703027.200.0001	RRR/MDR	EH	EH	09/07/15

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TABLES

TABLE 1
2017 Analytical Results for Soil Samples
2240 Filbert Street, Oakland, California

Sample Location and ID	Sample Date	Sample Depth (ft. bgs)	TPH (mg/kg)		Metals (mg/kg)												Comments
			TPH as Diesel	TPH as Motor Oil	Arsenic	Barium	Berryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Nickel	Vanadium	Zinc	
S-1@0.5'	3/23/2017	0.5	9.0	26	1.8	140	0.03	0.04	26	8.2	20	10	0.084	34	38	210	
S-2@0.5'	3/23/2017	0.5	--	--	3.4	170	0.55	0.27	36	11	31	11	0.093	35	67	73	
S-3@0.5'	3/23/2017	0.5	--	--	ND	240	0.56	ND	37	11	21	14	0.043	40	57	56	
S-4@0.5'	3/23/2017	0.5	22	170	1.7	220	0.52	0.28	35	12	17	13	0.093	39	57	51	
S-5@0.5'	3/31/2017	0.5	--	--	ND	200	0.45	ND	39	13	19	**240**	0.065	35	61	66	
S-6@0.5'	3/22/2017	0.5	--	--	ND	190	0.53	ND	33	11	13	18	0.34	33	69	63	
S-7@0.5'	3/22/2017	0.5	--	--	ND	160	0.51	ND	30	8.7	14	13	0.27	34	43	74	
S-8@0.5'	3/23/2017	0.5	48	200	ND	230	0.46	ND	38	10	16	16	0.11	35	50	58	
S-9@0.5'	3/22/2017	0.5	--	--	ND	210	0.47	0.27	34	7.9	14	12	0.078	39	44	53	
S-10@0.5'	3/22/2017	0.5	--	--	ND	180	0.47	ND	33	8.0	14	14	0.26	34	45	60	
S-5@3'	3/31/2017	3	--	--	--	--	--	--	--	--	--	6	--	--	--	--	"excavation bottom"
S-5-N-1	3/31/2017	1.5	--	--	--	--	--	--	--	--	--	26	--	--	--	--	"excavation sidewall"
S-5-S-1	3/31/2017	1.5	--	--	--	--	--	--	--	--	--	30	--	--	--	--	"excavation sidewall"
S-5-E-1	3/31/2017	1.5	--	--	--	--	--	--	--	--	--	17	--	--	--	--	"excavation sidewall"
S-5-W-1	3/31/2017	1.5	--	--	--	--	--	--	--	--	--	30	--	--	--	--	"excavation sidewall"

Notes:
1) Only analytes with detections above laboratory reporting limits shown
2) volatile organic conpounds by EPA Method 8260B were all ND
mg/kg: milligrams per kilogram
ft. bgs: feet below ground surface
Analyzed by Curtis & Tompkins, Ltd in Berkeley, CA
Red indicates constituent detected above the regulatory screening level (80 mg/kg)
ND = Not detected at laboratory reporting limit
--- = not analyzed
TPH : total petroleum hydrocarbons by EPA Method 8015B
Metals by EPA Method 6010B

TABLE 2 - part 1
2017 Analytical Results for Soil Vapor Samples - TEG Data
2240 Filbert Street, Oakland, California

Sample Location and ID	Sample Date	Sample Depth (ft. bgs)	EPA 8260B (µg/m3)													
			Dichlorodi-fluoromethane (Freon 12)	Vinyl Chloride	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	1,1,2-Trichloro-trifluoroethane	Methylene Chloride	trans-1,2-Dichloroethene	1,1-Dichloroethane	cis-1,2-Dichloroethene	Chloroform	1,1,1-Trichloroethane	Carbon Tetrachloride	1,2-Dichloroethane
SV-15	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-16	3/31/2017	2.5	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-16 DUP	3/31/2017	2.5	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-17	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-17 DUP	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-18	5/2/2017	5.0	**5,600**	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-19	5/2/2017	5.0	**3,100**	ND<9	ND<100	**140**	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-20	3/30/2017	3.5	**47,000**	ND<9	ND<100	**1,100**	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-20 DUP	3/30/2017	3.5	**48,000**	ND<9	ND<100	**1,100**	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-21	5/2/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-22	3/30/2017	4.0	**37,000**	ND<9	ND<100	**1,100**	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-23	5/2/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-23 DUP	5/2/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-23r	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-24	5/2/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-25	5/2/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-26	3/30/2017	2.5	**28,000**	ND<9	ND<100	**1,500**	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-27	5/2/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-28	5/2/2017	5.0	**210**	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-29	5/2/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-30	3/30/2017	3.0	**3,000**	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-31	3/30/2017	2.5	**1,200**	ND<9	ND<100	**400**	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-32	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-33	5/3/2017	5.0	**120**	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-34	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-35	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-36	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-37	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
SV-38	5/3/2017	5.0	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
QC - Probe	3/30/2017	--	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
QC - Probe	5/2/2017	--	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
QC - Probe	5/3/2017	--	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
QC - Syringe	3/30/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QC - Syringe	3/31/2017	--	ND<100	ND<9	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<58	ND<85	ND<25	ND<45
QC - Syringe	5/2/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
QC - Syringe	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Summary																
Site Specific Screening Levels*			**137,000**	**10**	**NE**	**2,000,000**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**	**NE**
Tier 1 Environmental Screening Levels for Sub slab/Soil Gas**			**NE**	**4.7**	**5,200,000**	**NE**	**37,000**	**NE**	**510**	**42,000**	**880**	**4,200**	**61**	**520,000**	**33**	**54**

Notes:

µg/m3: micrograms per cubic meter

ppmv = parts per million by volume

% = percent

ft. bgs: feet below ground surface

r = location resampled the following day

* = screening levels developed in the 2017 Human Health Risk Assessment for the Site.

** = California Regional Water Quality Control Board (RWQCB) Tier 1 Environmental Screening Levels (ESLs) for Sub slab/Soil Gas, February 2016 (Rev 3).

Bold indicates detected above the laboratory reporting limit

ND = Not detected at reporting limit as indicated

NE = Not established

-- = not analyzed or not applicable

TABLE 2 - part 2
2017 Analytical Results for Soil Vapor Samples - TEG Data
2240 Filbert Street, Oakland, California

Sample Location and ID	Sample Date	Sample Depth (ft. bgs)	EPA 8260B (µg/m3)										GC/TCD (%)				Comments
			Benzene	Trichloroethene	Toluene	1,1,2-Trichloroethane	Tetrachloroethene	Ethylbenzene	1,1,1,2-Tetrachloroethane	m,p-Xylene	o-Xylene	1,1,2,2-Tetrachloroethane	Methane	Carbon Dioxide	Oxygen	Nitrogen balance	
SV-15	5/3/2017	5.0	**48**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-16	3/31/2017	2.5	**38**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	2.2	14	84	
SV-16 DUP	3/31/2017	2.5	**39**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	2.5	14	84	
SV-17	5/3/2017	5.0	**53**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	preliminary detection of chloroform not real
SV-17 DUP	5/3/2017	5.0	**48**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-18	5/2/2017	5.0	**53**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	**0.00076**	ND<1.0	14	85	
SV-19	5/2/2017	5.0	**52**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-20	3/30/2017	3.5	ND<35	ND<9	ND<200	ND<100	**11**	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	6.3	94	
SV-20 DUP	3/30/2017	3.5	ND<35	ND<9	ND<200	ND<100	**10**	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	5.3	94	
SV-21	5/2/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	**0.00016**	ND<1.0	21	79	
SV-22	3/30/2017	4.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	6.8	93	
SV-23	5/2/2017	5.0	**1,500**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	delineated with SV-32,33,34
SV-23 DUP	5/2/2017	5.0	**1,600**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	delineated with SV-32,33,34
SV-23r	5/3/2017	5.0	**1,100**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	delineated with SV-32,33,34
SV-24	5/2/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-25	5/2/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-26	3/30/2017	2.5	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	6.0	94	
SV-27	5/2/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-28	5/2/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-29	5/2/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-30	3/30/2017	3.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	5.7	94	
SV-31	3/30/2017	2.5	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	15	85	
SV-32	5/3/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	20	80	
SV-33	5/3/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-34	5/3/2017	5.0	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	20	80	
SV-35	5/3/2017	5.0	**53**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	**0.00012**	ND<1.0	19	81	preliminary detection of chloroform not real
SV-36	5/3/2017	5.0	**120**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	19	81	
SV-37	5/3/2017	5.0	**49**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
SV-38	5/3/2017	5.0	**40**	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
QC - Probe	3/30/2017	--	ND<35		ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	--	--	--	--	
QC - Probe	5/2/2017	--	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	--	--	--	--	
QC - Probe	5/3/2017	--	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	--	--	--	--	
QC - Syringe	3/30/2017	--	--	--	--	--	--	--	--	--	--	--	ND<0.0001	ND<1.0	21	79	
QC - Syringe	3/31/2017	--	ND<35	ND<9	ND<200	ND<100	ND<9	ND<20	ND<100	ND<200	ND<100	ND<22	ND<0.0001	ND<1.0	21	79	
QC - Syringe	5/2/2017	--	--	--	--	--	--	--	--	--	--	--	ND<0.0001	ND<1.0	21	79	
QC - Syringe	5/3/2017	--	--	--	--	--	--	--	--	--	--	--	ND<0.0001	ND<1.0	21	79	
Summary																	
Site Specific Screening Levels*			**120**	**NE**	**NE**	**270**	**NE**	**1,640**	**NE**	**149,000**	**149,000**	**92**	--	--	--	--	
Tier 1 Environmental Screening Levels for Sub slab/Soil Gas**			**48**	**240**	**160,000**	**88**	**240**	**560**	**190**	**52,000**	**52,000**	**24**	--	--	--	--	

Notes:

µg/m3: micrograms per cubic meter

ppmv = parts per million by volume

% = percent

ft. bgs: feet below ground surface

r = location resampled the following day

* = screening levels developed in the 2017 Human Health Risk Assessment for the Site.

** = California Regional Water Quality Control Board (RWQCB) Tier 1 Environmental Screening Levels (ESLs) for Sub slab/Soil Gas, February 2016 (Rev 3).

Reported concentration greater than Screening Level

Bold indicates detected above the laboratory reporting limit

ND = Not detected at reporting limit as indicated

NE = Not established

-- = not analyzed or not applicable

TABLE 3

2017 Analytical Results for Soil Vapor Samples - Methane & Oxygen

2240 Filbert Street, Oakland, California

Sample Location and ID	Sample Date	Sample Depth (ft. bgs)	ASTM D1946 (ppmv)		Comments
			Methane	O_2	
SV-16	3/31/2017	2.5	ND<2,200	110,000	
SV-20	3/31/2017	3.5	ND<2,000	5,400	
SV-22	3/31/2017	4	ND<1,900	14,000	
SV-26	3/31/2017	2.5	ND<2,000	75,000	
SV-30	3/31/2017	5	ND<2,000	15,000	
SV-31	3/31/2017	2.5	ND<2,600	120,000	

Notes:

µg/m^3: micrograms per cubic meter

ft. bgs: feet below ground surface

ND = Not detected at reporting limit as indicated

O2 = Oxygen

TABLE 4
2017 Analytical Results for Soil Vapor Samples - TO-15 Analysis
2240 Filbert Street, Oakland, California

Sample Location and ID	Sample Date	Sample Depth (ft. bgs)	EPA METHOD TO-15 (µg/m3)																Comments
			Freon 12	Chloromethane	Trichlorofluoro-methane	Acetone	Carbon Disulfide	n-Hexane	Chloroform	Cyclohexane	Benzene	n-Heptane	4-methyl-2-Pentanone	Toluene	Tetrachloro ethene	Ethylbenzene	m,p-Xylene	o-Xylene	Other VOCs	
SV-16	3/31/2017	2.5	ND<1.1	ND<1.1	ND<1.1	**5.1**	**1.7**	**1.7**	ND<1.1	**1.5**	**7.4**	**1.4**	**1.9**	**8.2**	ND<1.1	**1.5**	**4.5**	**1.3**	ND<0.11 - 4.4	
SV-20	3/31/2017	3.5	**2,600**	ND<2.0	**110**	ND<7.8	ND<2.0	**7.2**	ND<2.0	**3.1**	**2.5**	**2.2**	ND<2.0	**4.6**	**2.1**	**2.5**	**4.8**	**2.0**	ND<0.20 - 7.8	
SV-22	3/31/2017	4	**7,100**	ND<2.9	**220**	ND<12	ND<2.9	**11**	**8.5**	**3.0**	ND<2.9	ND<2.9	ND<2.9	ND<2.9	ND<2.9	ND<2.9	ND<2.9	ND<2.9	ND<0.29 - 12	
SV-26	3/31/2017	2.5	**2,400**	ND<12	**260**	ND<49	ND<12	ND<12	ND<12	ND<12	ND<12	ND<12	ND<12	ND<12	ND<12	ND<12	ND<12	ND<12	ND<1.2 - 49	
SV-30	3/31/2017	5	**430**	**3.5**	**82**	ND<12	ND<2.9	**3.3**	ND<2.9	**5.2**	**4.0**	ND<2.9	ND<2.9	**4.5**	ND<2.9	ND<2.9	**4.8**	ND<2.9	ND<0.29 - 12	
SV-31	3/31/2017	2.5	**110**	ND<1.3	**45**	ND<5.2	**2.2**	ND<1.3	**4.3**	ND<1.3	**5.8**	ND<1.3	ND<1.3	**7.7**	ND<1.3	**1.5**	**4.3**	**1.3**	ND<0.13 - 5.2	

Notes:

µa/m^3: microgarms per cubic meter
ft. bgs: feet below ground surface
Bold indicates constituent detected above the laboratory reporting limit (RL)

ND = Not detected at reporting limit as indicated
--- = not analyzed

TABLE 5
2017 Analytical Results for Groundwater Samples
2240 Filbert Street, Oakland, California

Sample Location and ID	Sample Date	Sample Depth (ft. bgs)	TPH as Diesel (8015B)	TPH as Gasoline (8260B)	VOC (ug/L)					Comments
					MTBE	Isopropylbenzene	Propylbenzene	Sec-Butylbenzene	n-Butylbenzene	
W-1	3/23/2017	15	290	700	0.6	1.8	5.6	0.9	1.6	screen placed at 15-20 feet based on first water encountered; water stabilized at 9.5 feet

Notes:
1) Only analytes with detections above laboratory reporting limits shown
µg/L: micrograms per liter
ft. bgs: feet below ground surface
Analyzed by Curtis & Tompkins, Ltd in Berkeley, CA
TPH : total petroleum hydrocarbons by EPA Method 8015B or 8260B
VOC: volatile organic conpounds by EPA Method 8260B
MTBE: methyl tertiary butyl ether

ATTACHMENT A

12 April 2017

Mr. Dan Schreiner
Stantec Consulting
3875 Atherton Road
Rocklin, CA 95765-3716

SUBJECT: DATA REPORT - Stantec Consulting # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street, Oakland, California

TEG Project # 70330F

Mr. Schreiner:

Please find enclosed a data report for the samples analyzed from the above referenced project for Stantec Consulting. The samples were analyzed on site in TEG's mobile laboratory. TEG conducted a total of 16 analyses on 8 soil vapor samples.

-- 8 analyses on soil vapors for volatile organic hydrocarbons by EPA method 8260B.

-- 8 analyses on soil vapors for methane, oxygen, and carbon dioxide by GC/TCD.

The results of the analyses are summarized in the enclosed tables. Applicable detection limits and QA/QC data are included in the tables.

TEG appreciates the opportunity to have provided analytical services to Stantec Consulting on this project. If you have any further questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Mark Jerpbak
Director, TEG-Northern California

teg

Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70330F

EPA Method 8260B VOC Analyses of SOIL VAPOR in micrograms per cubic meter of Vapor

SAMPLE NUMBER:		Probe Blank	Syringe Blank	SV-16	SV-16 dup	SV-20
SAMPLE DEPTH (feet):				2.5	2.5	3.5
PURGE VOLUME:				3	3	3
COLLECTION DATE:		3/30/17	3/31/17	3/31/17	3/31/17	3/30/17
COLLECTION TIME:		9:30	7:06	8:09	8:09	12:45
DILUTION FACTOR:		1	1	1	1	1
	RL					
Dichlorodifluoromethane	100	nd	nd	nd	nd	47000
Vinyl Chloride	9	nd	nd	nd	nd	nd
Chloroethane	100	nd	nd	nd	nd	nd
Trichlorofluoromethane	100	nd	nd	nd	nd	1100
1,1-Dichloroethene	100	nd	nd	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	100	nd	nd	nd	nd	nd
Methylene Chloride	100	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	100	nd	nd	nd	nd	nd
1,1-Dichloroethane	100	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	100	nd	nd	nd	nd	nd
Chloroform	58	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	85	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	nd	nd	nd
1,2-Dichloroethane	45	nd	nd	nd	nd	nd
Benzene	35	nd	nd	38	39	nd
Trichloroethene	9	nd	nd	nd	nd	nd
Toluene	200	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	100	nd	nd	nd	nd	nd
Tetrachloroethene	9	nd	nd	nd	nd	11
Ethylbenzene	20	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	100	nd	nd	nd	nd	nd
m,p-Xylene	200	nd	nd	nd	nd	nd
o-Xylene	100	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	22	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10000	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		97%	89%	91%	93%	97%
Surrogate Recovery (Toluene-d8)		100%	93%	99%	99%	99%
Surrogate Recovery (1,4-BFB)		94%	84%	90%	93%	95%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Ms. Lorena Williams

11350 Monier Park Place, Rancho Cordova, CA 95742 • Phone (916) 853-8010 • Fax (916) 853-8020

teg

Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70330F

EPA Method 8260B VOC Analyses of SOIL VAPOR in micrograms per cubic meter of Vapor

SAMPLE NUMBER:		SV-20 dup	SV-22	SV-26	SV-30	SV-31
SAMPLE DEPTH (feet):		3.5	4.0	2.5	3.0	2.5
PURGE VOLUME:		3	3	3	3	3
COLLECTION DATE:		3/30/17	3/30/17	3/30/17	3/30/17	3/30/17
COLLECTION TIME:		12:45	15:08	15:24	10:55	15:50
DILUTION FACTOR:		1	1	1	1	1
	RL					
Dichlorodifluoromethane	100	48000	37000	28000	3000	1200
Vinyl Chloride	9	nd	nd	nd	nd	nd
Chloroethane	100	nd	nd	nd	nd	nd
Trichlorofluoromethane	100	1100	1100	1500	nd	400
1,1-Dichloroethene	100	nd	nd	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	100	nd	nd	nd	nd	nd
Methylene Chloride	100	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	100	nd	nd	nd	nd	nd
1,1-Dichloroethane	100	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	100	nd	nd	nd	nd	nd
Chloroform	58	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	85	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	nd	nd	nd
1,2-Dichloroethane	45	nd	nd	nd	nd	nd
Benzene	35	nd	nd	nd	nd	nd
Trichloroethene	9	nd	nd	nd	nd	nd
Toluene	200	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	100	nd	nd	nd	nd	nd
Tetrachloroethene	9	10	nd	nd	nd	nd
Ethylbenzene	20	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	100	nd	nd	nd	nd	nd
m,p-Xylene	200	nd	nd	nd	nd	nd
o-Xylene	100	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	22	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10000	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		100%	93%	95%	93%	93%
Surrogate Recovery (Toluene-d8)		102%	94%	99%	95%	95%
Surrogate Recovery (1,4-BFB)		100%	94%	96%	90%	97%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Ms. Lorena Williams

11350 Monier Park Place, Rancho Cordova, CA 95742 • Phone (916) 853-8010 • Fax (916) 853-8020

Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70330F

CALIBRATION DATA - Daily Calibration Check Compounds (GC/MS)

	Vinyl Chloride	1,1 DCE	Chloroform	1,2 DCP	Toluene	Ethylbenzene
Midpoint	10.0	10.0	10.0	10.0	10.0	10.0
Continuing Calibration - Midpoint						
3/30/17	8.4	8.7	9.9	10.9	10.8	10.1
	84%	87%	99%	109%	108%	101%
3/31/17	8.9	9.4	10.3	10.9	11.3	11.2
	89%	94%	103%	109%	113%	112%

teg

Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70330F

Analyses of SOIL VAPOR
Methane in ppmV; and Carbon Dioxide and Oxygen in percent by Volume

SAMPLE NUMBER	SAMPLE DEPTH (feet)	PURGE VOLUME	COLLECTION DATE	COLLECTION TIME	Methane ppmV	Carbon Dioxide %	Oxygen %	Nitrogen balance %
Syringe Blank			3/30/17	9:16	nd	nd	21	79
Syringe Blank			3/31/17	7:06	nd	nd	21	79
SV-16	2.5	3	3/31/17	8:09	nd	2.2	14	84
SV-16 dup	2.5	3	3/31/17	8:09	nd	2.5	14	84
SV-20	3.5	3	3/30/17	12:45	nd	nd	6.3	94
SV-20 dup	3.5	3	3/30/17	12:45	nd	nd	5.6	94
SV-22	4.0	3	3/30/17	15:08	nd	nd	6.8	93
SV-26	2.5	3	3/30/17	15:24	nd	nd	6.0	94
SV-30	3.0	3	3/30/17	10:55	nd	nd	5.7	94
SV-31	2.5	3	3/30/17	15:39	nd	nd	15	85
				Reporting Limit:	1000	1.0	1.0	1.0

'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Ms. Lorena Williams

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16 May 2017

Mr. Dan Schreiner
Stantec Consulting
3875 Atherton Road
Rocklin, CA 95765-3716

SUBJECT: DATA REPORT - Stantec Consulting # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street, Oakland, California

TEG Project # 70502F

Mr. Schreiner:

Please find enclosed a data report for the samples analyzed from the above referenced project for Stantec Consulting. The samples were analyzed on site in TEG's mobile laboratory. TEG conducted a total of 42 analyses on 21 soil vapor samples.

-- 21 analyses on soil vapors for volatile organic hydrocarbons by EPA method 8260B.

-- 21 analyses on soil vapors for methane, oxygen, and carbon dioxide by GC/TCD.

The results of the analyses are summarized in the enclosed tables. Applicable detection limits and QA/QC data are included in the tables.

TEG appreciates the opportunity to have provided analytical services to Stantec Consulting on this project. If you have any further questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Mark Jerpbak
Director, TEG-Northern California

teg

Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70502F

EPA Method 8260B VOC Analyses of SOIL VAPOR in micrograms per cubic meter of Vapor

SAMPLE NUMBER:		Probe Blank	Probe Blank	SV-15	SV-17	SV-17 dup	SV-18
SAMPLE DEPTH (feet):				5.0	5.0	5.0	5.0
PURGE VOLUME:				3	3	3	3
COLLECTION DATE:		5/2/17	5/3/17	5/3/17	5/3/17	5/3/17	5/2/17
COLLECTION TIME:		8:46	7:39	8:34	9:02	9:02	11:30
DILUTION FACTOR:	RL	1	1	1	1	1	1
Dichlorodifluoromethane	100	nd	nd	nd	nd	nd	5600
Vinyl Chloride	9	nd	nd	nd	nd	nd	nd
Chloroethane	100	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	100	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	100	nd	nd	nd	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	100	nd	nd	nd	nd	nd	nd
Methylene Chloride	100	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	100	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	100	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	100	nd	nd	nd	nd	nd	nd
Chloroform	58	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	85	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	45	nd	nd	nd	nd	nd	nd
Benzene	35	nd	nd	48	53	48	53
Trichloroethene	9	nd	nd	nd	nd	nd	nd
Toluene	200	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	100	nd	nd	nd	nd	nd	nd
Tetrachloroethene	9	nd	nd	nd	nd	nd	nd
Ethylbenzene	20	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	100	nd	nd	nd	nd	nd	nd
m,p-Xylene	200	nd	nd	nd	nd	nd	nd
o-Xylene	100	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	22	nd	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10000	nd	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		97%	98%	98%	94%	99%	104%
Surrogate Recovery (Toluene-d8)		98%	99%	97%	97%	102%	104%
Surrogate Recovery (1,4-BFB)		94%	95%	94%	92%	98%	104%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Ms. Lorena Williams

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Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70502F

EPA Method 8260B VOC Analyses of SOIL VAPOR in micrograms per cubic meter of Vapor

SAMPLE NUMBER:		SV-19	SV-21	SV-23	SV-23 dup	SV-23	SV-24
SAMPLE DEPTH (feet):		5.0	5.0	5.0	5.0	5.0	5.0
PURGE VOLUME:		3	3	3	3	3	3
COLLECTION DATE:		5/2/17	5/2/17	5/2/17	5/2/17	5/3/17	5/2/17
COLLECTION TIME:		11:02	10:30	12:00	12:00	8:07	13:35
DILUTION FACTOR:		1	1	1	1	1	1
	RL						
Dichlorodifluoromethane	100	3100	nd	nd	nd	nd	nd
Vinyl Chloride	9	nd	nd	nd	nd	nd	nd
Chloroethane	100	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	100	140	nd	nd	nd	nd	nd
1,1-Dichloroethene	100	nd	nd	nd	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	100	nd	nd	nd	nd	nd	nd
Methylene Chloride	100	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	100	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	100	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	100	nd	nd	nd	nd	nd	nd
Chloroform	58	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	85	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	45	nd	nd	nd	nd	nd	nd
Benzene	35	52	nd	1500	1600	1100	nd
Trichloroethene	9	nd	nd	nd	nd	nd	nd
Toluene	200	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	100	nd	nd	nd	nd	nd	nd
Tetrachloroethene	9	nd	nd	nd	nd	nd	nd
Ethylbenzene	20	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	100	nd	nd	nd	nd	nd	nd
m,p-Xylene	200	nd	nd	nd	nd	nd	nd
o-Xylene	100	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	22	nd	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10000	nd	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		105%	100%	98%	106%	91%	105%
Surrogate Recovery (Toluene-d8)		103%	99%	101%	109%	95%	106%
Surrogate Recovery (1,4-BFB)		102%	97%	98%	104%	89%	104%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Ms. Lorena Williams

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Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70502F

EPA Method 8260B VOC Analyses of SOIL VAPOR in micrograms per cubic meter of Vapor

SAMPLE NUMBER:		SV-25	SV-27	SV-28	SV-29	SV-32	SV-33
SAMPLE DEPTH (feet):		5.0	5.0	5.0	5.0	5.0	5.0
PURGE VOLUME:		3	3	3	3	3	3
COLLECTION DATE:		5/2/17	5/2/17	5/2/17	5/2/17	5/3/17	5/3/17
COLLECTION TIME:		13:00	14:47	14:16	15:18	12:16	11:51
DILUTION FACTOR:		1	1	1	1	1	1
	RL						
Dichlorodifluoromethane	100	nd	nd	210	nd	nd	120
Vinyl Chloride	9	nd	nd	nd	nd	nd	nd
Chloroethane	100	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane	100	nd	nd	nd	nd	nd	nd
1,1-Dichloroethene	100	nd	nd	nd	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	100	nd	nd	nd	nd	nd	nd
Methylene Chloride	100	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	100	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	100	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	100	nd	nd	nd	nd	nd	nd
Chloroform	58	nd	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	85	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	45	nd	nd	nd	nd	nd	nd
Benzene	35	nd	nd	nd	nd	nd	nd
Trichloroethene	9	nd	nd	nd	nd	nd	nd
Toluene	200	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	100	nd	nd	nd	nd	nd	nd
Tetrachloroethene	9	nd	nd	nd	nd	nd	nd
Ethylbenzene	20	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	100	nd	nd	nd	nd	nd	nd
m,p-Xylene	200	nd	nd	nd	nd	nd	nd
o-Xylene	100	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	22	nd	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10000	nd	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		101%	99%	103%	108%	100%	98%
Surrogate Recovery (Toluene-d8)		103%	100%	103%	112%	102%	100%
Surrogate Recovery (1,4-BFB)		102%	101%	103%	108%	100%	99%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Ms. Lorena Williams

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Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70502F

EPA Method 8260B VOC Analyses of SOIL VAPOR in micrograms per cubic meter of Vapor

SAMPLE NUMBER:		SV-34	SV-35	SV-36	SV-37	SV-38
SAMPLE DEPTH (feet):		5.0	5.0	5.0	5.0	5.0
PURGE VOLUME:		3	3	3	3	3
COLLECTION DATE:		5/3/17	5/3/17	5/3/17	5/3/17	5/3/17
COLLECTION TIME:		12:46	15:01	15:28	17:33	18:00
DILUTION FACTOR:		1	1	1	1	1
	RL					
Dichlorodifluoromethane	100	nd	nd	nd	nd	nd
Vinyl Chloride	9	nd	nd	nd	nd	nd
Chloroethane	100	nd	nd	nd	nd	nd
Trichlorofluoromethane	100	nd	nd	nd	nd	nd
1,1-Dichloroethene	100	nd	nd	nd	nd	nd
1,1,2-Trichloro-trifluoroethane	100	nd	nd	nd	nd	nd
Methylene Chloride	100	nd	nd	nd	nd	nd
trans-1,2-Dichloroethene	100	nd	nd	nd	nd	nd
1,1-Dichloroethane	100	nd	nd	nd	nd	nd
cis-1,2-Dichloroethene	100	nd	nd	nd	nd	nd
Chloroform	58	nd	nd	nd	nd	nd
1,1,1-Trichloroethane	85	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	nd	nd	nd
1,2-Dichloroethane	45	nd	nd	nd	nd	nd
Benzene	35	nd	53	120	49	40
Trichloroethene	9	nd	nd	nd	nd	nd
Toluene	200	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	100	nd	nd	nd	nd	nd
Tetrachloroethene	9	nd	nd	nd	nd	nd
Ethylbenzene	20	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	100	nd	nd	nd	nd	nd
m,p-Xylene	200	nd	nd	nd	nd	nd
o-Xylene	100	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	22	nd	nd	nd	nd	nd
1,1 Difluoroethane (leak check)	10000	nd	nd	nd	nd	nd
Surrogate Recovery (DBFM)		97%	102%	106%	92%	95%
Surrogate Recovery (Toluene-d8)		97%	102%	108%	95%	96%
Surrogate Recovery (1,4-BFB)		97%	103%	109%	90%	92%

'RL' Indicates reporting limit at a dilution factor of 1
'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Ms. Lorena Williams

11350 Monier Park Place, Rancho Cordova, CA 95742 • Phone (916) 853-8010 • Fax (916) 853-8020

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Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70502F

Analyses of SOIL VAPOR

Methane in ppmV; and Carbon Dioxide and Oxygen in percent by Volume

SAMPLE NUMBER	SAMPLE DEPTH (feet)	PURGE VOLUME	COLLECTION DATE	COLLECTION TIME	Methane ppmV	Carbon Dioxide %	Oxygen %	Nitrogen balance %
Syringe Blank			5/2/17	7:58	nd	nd	21	79
Syringe Blank			5/3/17	7:22	nd	nd	21	79
SV-15	5.0	3	5/3/17	8:34	nd	nd	21	79
SV-17	5.0	3	5/3/17	9:02	nd	nd	21	79
SV-17 dup	5.0	3	5/3/17	9:02	nd	nd	21	79
SV-18	5.0	3	5/2/17	11:30	7600	nd	14	85
SV-19	5.0	3	5/2/17	11:02	nd	nd	21	79
SV-21	5.0	3	5/2/17	10:30	1600	nd	21	79
SV-23	5.0	3	5/2/17	12:00	nd	nd	21	79
SV-23 dup	5.0	3	5/2/17	12:00	nd	nd	21	79
SV-23	5.0	3	5/3/17	8:07	nd	nd	21	79
SV-24	5.0	3	5/2/17	13:35	nd	nd	21	79
SV-25	5.0	3	5/2/17	13:00	nd	nd	21	79
SV-27	5.0	3	5/2/17	14:47	nd	nd	21	79
SV-28	5.0	3	5/2/17	14:16	nd	nd	21	79
SV-29	5.0	3	5/2/17	15:18	nd	nd	21	79
SV-32	5.0	3	5/3/17	12:16	nd	nd	20	80
SV-33	5.0	3	5/3/17	11:51	nd	nd	21	79
SV-34	5.0	3	5/3/17	12:46	nd	nd	20	80
SV-35	5.0	3	5/3/17	15:01	1200	nd	19	81
SV-36	5.0	3	5/3/17	15:28	nd	nd	19	81
SV-37	5.0	3	5/3/17	17:33	nd	nd	21	79
SV-38	5.0	3	5/3/17	18:00	nd	nd	21	79
				Reporting Limit	1000	1.0	1.0	1.0

'nd' Indicates not detected at listed reporting limits

Analyses performed in TEG-Northern California's lab
Analyses performed by: Ms. Lorena Williams

Stantec Consulting Project # 185703027
City Ventures-Data Gap Assessment
2240 Filbert Street
Oakland, California

TEG Project #70502F

CALIBRATION DATA - Daily Calibration Check Compounds (GC/MS)

	Vinyl Chloride	1,1 DCE	Chloroform	1,2 DCP	Toluene	Ethylbenzene
Midpoint	10.0	10.0	10.0	10.0	10.0	10.0
Continuing Calibration - Midpoint						
5/2/17	10.8	10.0	10.5	12.0	10.3	10.1
	108%	100%	105%	120%	103%	101%
5/3/17	9.2	8.9	9.7	10.8	9.6	10.3
	92%	89%	97%	108%	96%	103%

From:	Teg Northern California
To:	Schreiner, Dan
Subject:	Re: TEG # 70502F preliminary data 5/11/17 - City Ventures, Oakland
Date:	Friday, May 12, 2017 8:42:59 AM
Attachments:	20170512075537.pdf

Dan,

Your project soil vapor data is currently in the middle of QA/QC review. Attached is updated preliminary data that includes the reviewed data through yesterday. I am sending this update to you because upon reviewing the data, the chloroform reported in the field is incorrect. There is actually no chloroform detected in any of the soil vapor samples. The computer software automatically reported the incorrect chloroform data, which was discovered during QA/QC review.

Please contact me if you have any questions.

Thank you,

Mark Jerpbak
TEG-Northern California, Inc.
11350 Monier Park Pl.
Rancho Cordova, CA 95742
916.853.8010 tel
916.853.8020 fax


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 287271
ANALYTICAL REPORT

Stantec	Project : 185703027
3875 Atherton Rd.	Location : City Ventures
Rocklin, CA 95765	Level : II

Sample ID	Lab ID
S-1@0.5'	287271-001
S-1@3'	287271-002
S-2@0.5'	287271-003
S-2@3'	287271-004
S-3@0.5'	287271-005
S-3@3'	287271-006
S-6@0.5'	287271-007
S-6@3'	287271-008
S-7@0.5'	287271-009
S-7@3'	287271-010
S-9@0.5'	287271-011
S-9@3'	287271-012
S-10@0.5'	287271-013
S-10@3'	287271-014

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: 03/24/2017

Mike Dahlquist
Project Manager
mike.dahlquist@ctberk.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**287271**
Client:	**Stantec**
Project:	**185703027**
Location:	**City Ventures**
Request Date:	**03/22/17**
Samples Received:	**03/22/17**

This data package contains sample and QC results for seven soil samples, requested for the above referenced project on 03/22/17. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
High recovery was observed for 1,1-dichloroethene in the MSD for batch 245748; the parent sample was not a project sample, the BS/BSD were within limits, the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated sample. Low surrogate recovery was observed for dibromofluoromethane in S-1@0.5' (lab # 287271-001). No other analytical problems were encountered.

Metals (EPA 6010B and EPA 7471A):
Chromium and nickel were detected above the RL in the method blank for batch 245865; these analytes were detected in samples at a level at least 10 times that of the blank. No other analytical problems were encountered.

CHAIN OF CUSTODY

Page 1 of 2

Chain of Custody #

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

C&T LOGIN # 287271

Project No: 185703027

Project Name: City Ventures

Project P. O. No:

EDD Format:

Report Level ☐ II ☐ III ☐ IV

Turnaround Time: ☐ RUSH ☑ Standard

Sampler: Miguel Cisneros

Report To: Don Schreiner

Company: Stantec

Telephone: 916-626-7882

Email: Don.Schreiner@Stantec.com

Lab No.	Sample ID.	SAMPLING Date Collected	SAMPLING Time Collected	MATRIX Water	MATRIX Solid	# of Containers	HCl	H2SO4	HNO3	NaOH	None	Cam 17	VOC	TPHg	TPHd/mo 8015	BTEX 8260	Hold
1	S-1@0.5'	3-22-17	1040		X						✓	X	X	X	X	X	
2	S-1@3'		1047									X	X	X	X	X	X
3	S-2@0.5'		1408									X					
4	S-2@3'		1416									X					X
5	S-3@0.5'		1350									X					
6	S-3@3'		1400									X					X
7	S-6@0.5'		1332									X					
8	S-6@3'		1338									X					X
9	S-7@0.5'		1323									X					
10	S-7@3'		1328									X					X
11	S-9@0.5'		1255									X					
12	S-9@3'		1308									X					X
13	S-10@0.5		1203									X					

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☐ On Ice
☐ Ambient

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	DATE	TIME
[signature]	3-22-17	1622	[signature]	3/22/17	1622
[signature]	3/22	1703	[signature]	3/22/17	1703

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

Chain of Custody # _____

C&T LOGIN # 28727

Project No: 18570327
Project Name: City Ventures
Project P. O. No:
EDD Format: Report Level ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☑ Standard

Sampler: Miguel Cisneros
Report To: Dan Schreiner
Company: Stantec
Telephone: (916) 626-7882
Email: Dan.Schreiner@stantec.com

Lab No.	Sample ID.	SAMPLING		MATRIX				# of Containers	CHEMICAL PRESERVATIVE					ANALYTICAL REQUEST	
		Date Collected	Time Collected	Water	Solid				HCl	H2SO4	HNO3	NaOH	None	Can I Hold	
14	S-10@3'	3-22-17	1213		X			1					X	X	X

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☐ On Ice
☐ Ambient

RELINQUISHED BY:
DATE: 3-22-17 TIME: 1426
DATE: 3/22 TIME: 1703
DATE: TIME:

RECEIVED BY:
DATE: 3/22 TIME: 1426
DATE: 3/22/17 TIME: 17:03
DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 28727-1 Date Received 3-22-17 Number of coolers 1
Client Stantec Project City Ventures

Date Opened 3-22-17 By (print) [illegible] (sign) [illegible]
Date Logged in 3-23-17 By (print) [illegible] (sign) [illegible]
Date Labeled [illegible] By (print) [illegible] (sign) [illegible]

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) 3.2

☐ Temperature blank(s) included? ☐ Thermometer# ☒ IR Gun# A

☐ 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

Curtis & Tompkins, Ltd.

Detections Summary for 287271

Results for any subcontracted analyses are not included in this summary.

Client : Stantec
Project : 185703027
Location : City Ventures

Client Sample ID : S-1@0.5' Laboratory Sample ID : 287271-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	9.0	Y	0.99	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	29		5.0	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Arsenic	1.8		1.5	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	140		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.32		0.11	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	0.35		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	26		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	8.2		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	20		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	10		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.084		0.016	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	34		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	38		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	210		1.1	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : S-2@0.5' Laboratory Sample ID : 287271-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Arsenic	3.4		1.4	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	170		0.24	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.55		0.096	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	0.27		0.24	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	36		0.24	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	11		0.24	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	31		0.24	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	11		0.96	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.093		0.016	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	35		0.24	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	67		0.24	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	73		0.96	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Curtis & Tompkins, Ltd.

Client Sample ID : S-3@0.5' Laboratory Sample ID : 287271-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Barium	240		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.56		0.11	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	37		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	11		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	21		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	14		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.043		0.017	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	40		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	57		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	56		1.1	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : S-6@0.5' Laboratory Sample ID : 287271-007

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Barium	190		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.53		0.10	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	33		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	11		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	13		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	18		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.34		0.017	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	33		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	69		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	63		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : S-7@0.5' Laboratory Sample ID : 287271-009

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Barium	160		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.51		0.10	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	30		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	8.7		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	14		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	13		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.27		0.016	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	34		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	43		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	74		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Curtis & Tompkins, Ltd.

Client Sample ID : S-9@0.5' Laboratory Sample ID : 287271-011

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Barium	210		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.47		0.11	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	0.27		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	34		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	7.9		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	14		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	12		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.078		0.017	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	39		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	44		0.27	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	53		1.1	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : S-10@0.5' Laboratory Sample ID : 287271-013

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Barium	180		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.47		0.10	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	33		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	8.0		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	14		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	14		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.26		0.016	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	34		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	45		0.26	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	60		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Y = Sample exhibits chromatographic pattern which does not resemble standard

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8015B
Field ID:	S-1@0.5'	Diln Fac:	1.000
Matrix:	Soil	Batch#:	245847
Units:	mg/Kg	Sampled:	03/22/17
Basis:	as received	Received:	03/22/17

Type: SAMPLE Analyzed: 03/24/17
Lab ID: 287271-001

Analyte	Result	RL
Gasoline C7-C12	ND	0.95

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	70-138

Type: BLANK Analyzed: 03/23/17
Lab ID: QC878228

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	70-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC878225	Batch#:	245847
Matrix:	Soil	Analyzed:	03/23/17
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9708	97	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	70-138

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	287256-004	Batch#:	245847
Matrix:	Soil	Sampled:	03/22/17
Units:	mg/Kg	Received:	03/22/17
Basis:	as received	Analyzed:	03/24/17

Type: MS Lab ID: QC878226

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1441	9.524	5.649	58	49-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	70-138

Type: MSD Lab ID: QC878227

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.20	6.132	59	49-120	1	32

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	70-138

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 3550B
Project#:	185703027	Analysis:	EPA 8015B
Field ID:	S-1@0.5'	Batch#:	245858
Matrix:	Soil	Sampled:	03/22/17
Units:	mg/Kg	Received:	03/22/17
Basis:	as received	Prepared:	03/23/17
Diln Fac:	1.000	Analyzed:	03/24/17

Type: SAMPLE Lab ID: 287271-001

Analyte	Result	RL
Diesel C10-C24	9.0 Y	0.99
Motor Oil C24-C36	29	5.0

Surrogate	%REC	Limits
o-Terphenyl	119	58-136

Type: BLANK Lab ID: QC878269

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	122	58-136

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

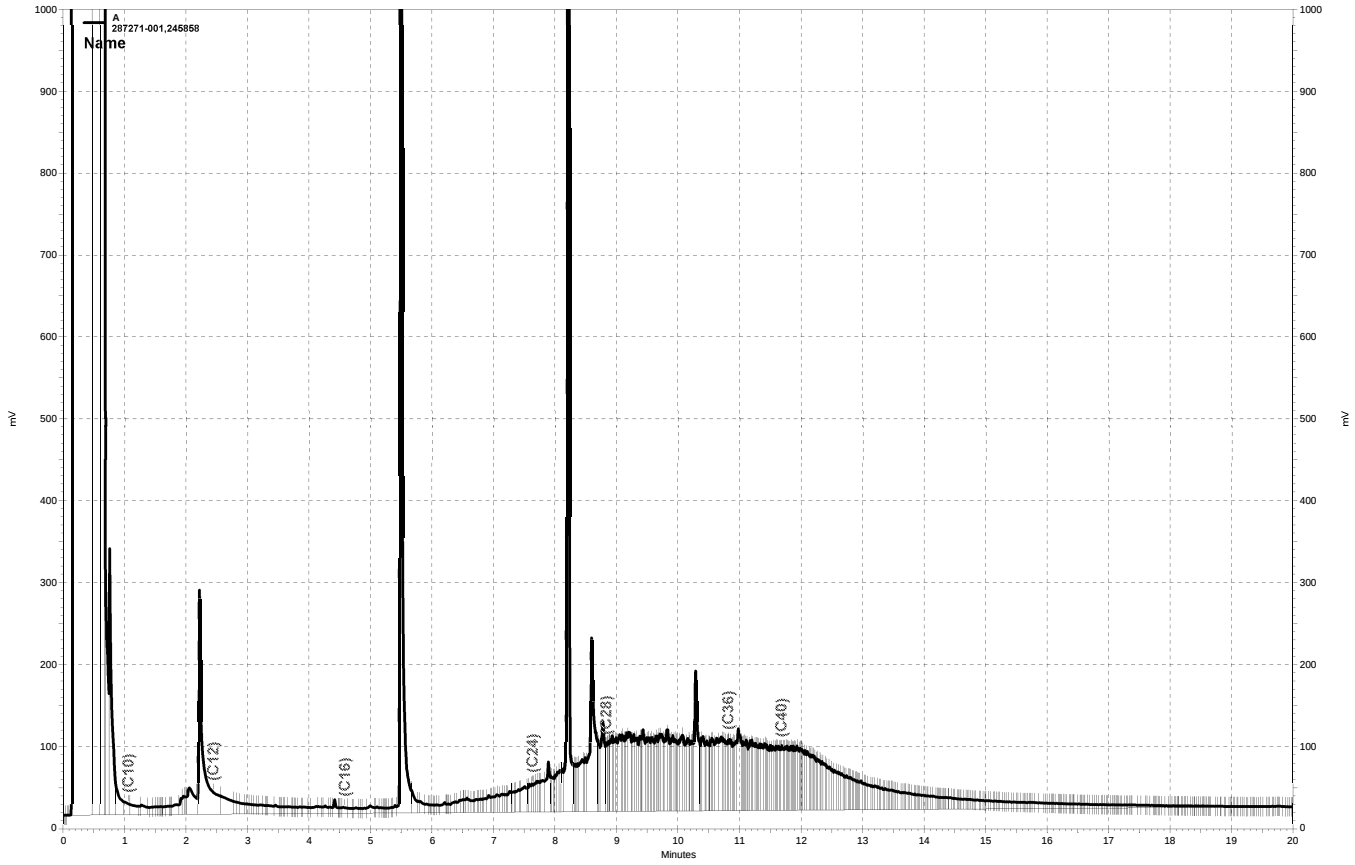
Batch QC Report

Total Extractable Hydrocarbons

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 3550B
Project#:	185703027	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC878270	Batch#:	245858
Matrix:	Soil	Prepared:	03/23/17
Units:	mg/Kg	Analyzed:	03/24/17

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.57	49.54	100	56-135

Surrogate	%REC	Limits
o-Terphenyl	109	58-136



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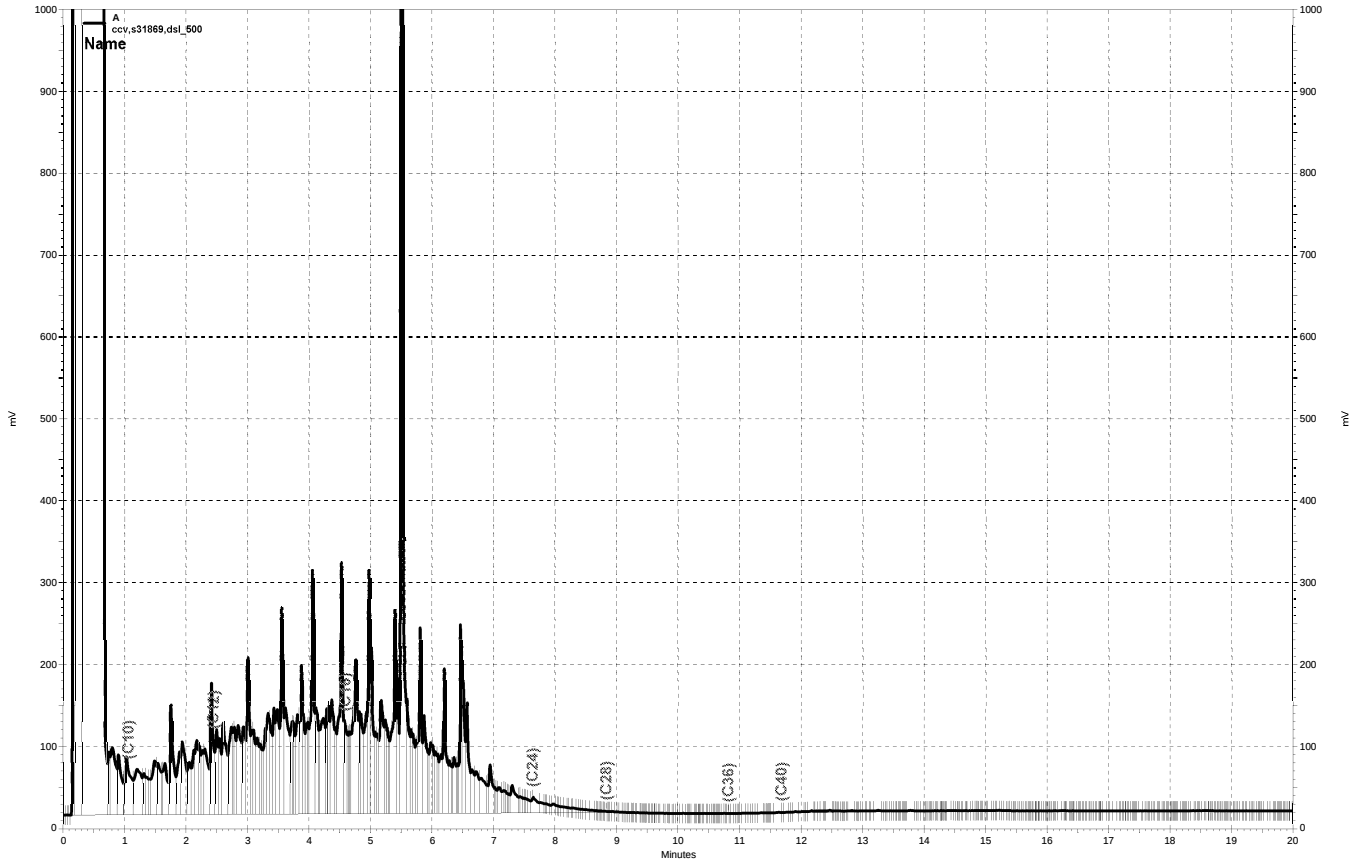

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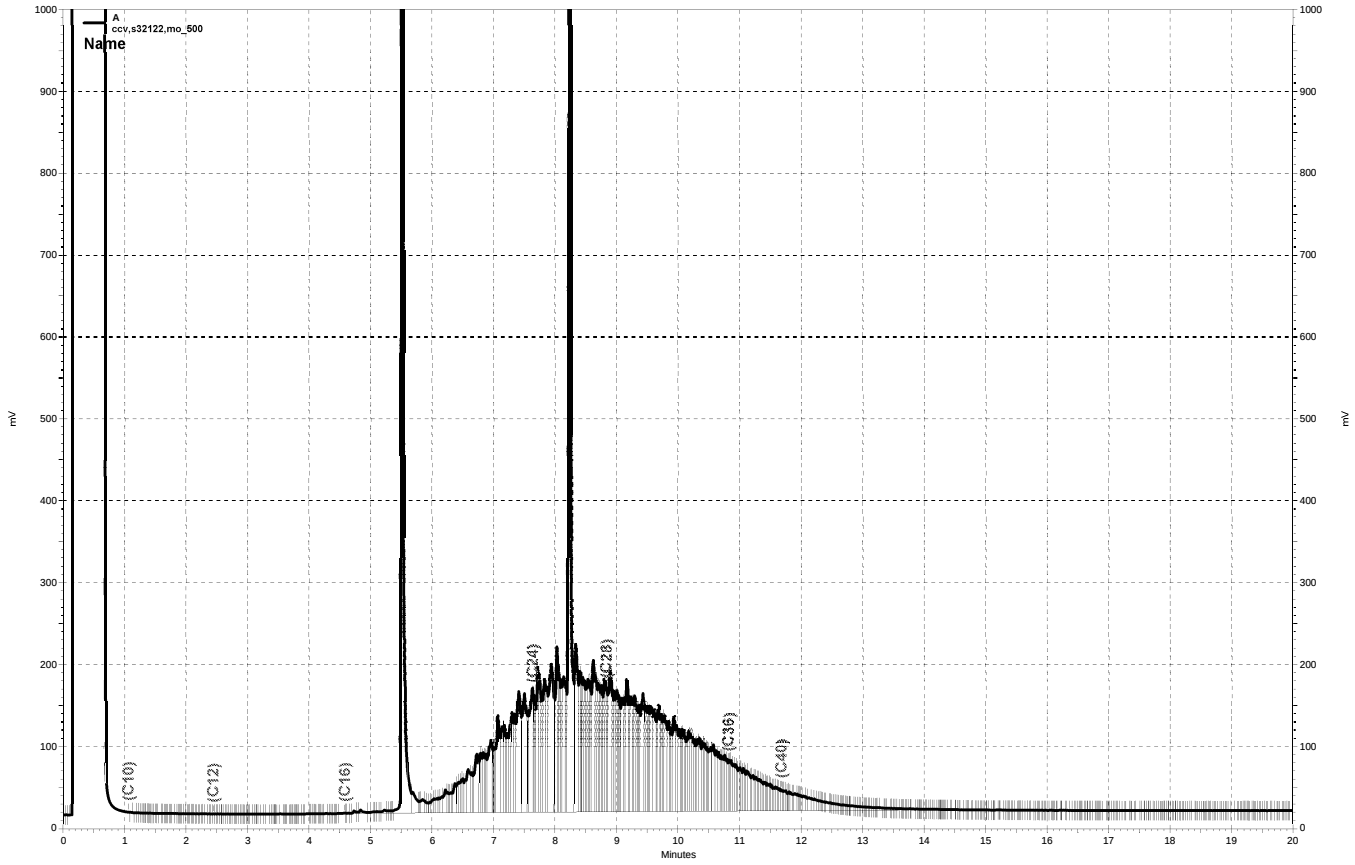

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Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Field ID:	S-1@0.5'	Diln Fac:	0.9843
Lab ID:	287271-001	Batch#:	245748
Matrix:	Soil	Sampled:	03/22/17
Units:	ug/Kg	Received:	03/22/17
Basis:	as received	Analyzed:	03/23/17

Analyte	Result	RL
Freon 12	ND	9.8
Chloromethane	ND	9.8
Vinyl Chloride	ND	9.8
Bromomethane	ND	9.8
Chloroethane	ND	9.8
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.8
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.8
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.8
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Field ID:	S-1@0.5'	Dil'n Fac:	0.9843
Lab ID:	287271-001	Batch#:	245748
Matrix:	Soil	Sampled:	03/22/17
Units:	ug/Kg	Received:	03/22/17
Basis:	as received	Analyzed:	03/23/17

Analyte	Result	RL
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	69 *	80-128
1,2-Dichloroethane-d4	89	80-136
Toluene-d8	95	80-120
Bromofluorobenzene	90	80-132

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Matrix:	Soil	Batch#:	245748
Units:	ug/Kg	Analyzed:	03/23/17
Diln Fac:	1.000		

Type: BS Lab ID: QC877821

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	30.11	120	65-127
Benzene	25.00	25.53	102	75-124
Trichloroethene	25.00	25.08	100	76-122
Toluene	25.00	26.28	105	77-120
Chlorobenzene	25.00	26.86	107	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-128
1,2-Dichloroethane-d4	97	80-136
Toluene-d8	98	80-120
Bromofluorobenzene	90	80-132

Type: BSD Lab ID: QC877822

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	28.31	113	65-127	6	28
Benzene	25.00	24.96	100	75-124	2	25
Trichloroethene	25.00	24.37	97	76-122	3	26
Toluene	25.00	25.51	102	77-120	3	25
Chlorobenzene	25.00	25.99	104	80-120	3	24

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-128
1,2-Dichloroethane-d4	101	80-136
Toluene-d8	98	80-120
Bromofluorobenzene	89	80-132

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC877823	Batch#:	245748
Matrix:	Soil	Analyzed:	03/23/17
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC877823	Batch#:	245748
Matrix:	Soil	Analyzed:	03/23/17
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-128
1,2-Dichloroethane-d4	91	80-136
Toluene-d8	96	80-120
Bromofluorobenzene	90	80-132

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	245748
MSS Lab ID:	287163-001	Sampled:	03/20/17
Matrix:	Soil	Received:	03/20/17
Units:	ug/Kg	Analyzed:	03/23/17
Basis:	as received		

Type: MS Diln Fac: 0.9174
Lab ID: QC878259

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.4022	45.87	56.18	122	65-131
Benzene	<0.3988	45.87	49.34	108	68-123
Trichloroethene	<0.3831	45.87	52.33	114	60-136
Toluene	<0.2897	45.87	46.18	101	64-120
Chlorobenzene	<0.3613	45.87	44.86	98	59-120

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-128
1,2-Dichloroethane-d4	99	80-136
Toluene-d8	96	80-120
Bromofluorobenzene	89	80-132

Type: MSD Diln Fac: 0.9804
Lab ID: QC878260

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	49.02	64.52	132 *	65-131	7	33
Benzene	49.02	54.38	111	68-123	3	30
Trichloroethene	49.02	58.90	120	60-136	5	34
Toluene	49.02	51.79	106	64-120	5	31
Chlorobenzene	49.02	49.27	101	59-120	3	33

Surrogate	%REC	Limits
Dibromofluoromethane	105	80-128
1,2-Dichloroethane-d4	99	80-136
Toluene-d8	97	80-120
Bromofluorobenzene	91	80-132

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287271	Project#:	185703027
Client:	Stantec	Location:	City Ventures
Field ID:	S-1@0.5'	Diln Fac:	1.000
Lab ID:	287271-001	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Analyzed:	03/24/17
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Arsenic	1.8	1.5	245865	03/23/17	EPA 3050B	EPA 6010B
Barium	140	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Beryllium	0.32	0.11	245865	03/23/17	EPA 3050B	EPA 6010B
Cadmium	0.35	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Chromium	26	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Cobalt	8.2	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Copper	20	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Lead	10	1.0	245865	03/23/17	EPA 3050B	EPA 6010B
Mercury	0.084	0.016	245893	03/24/17	METHOD	EPA 7471A
Molybdenum	ND	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Nickel	34	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Silver	ND	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Thallium	ND	0.54	245865	03/23/17	EPA 3050B	EPA 6010B
Vanadium	38	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Zinc	210	1.1	245865	03/23/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287271	Project#:	185703027
Client:	Stantec	Location:	City Ventures
Field ID:	S-2@0.5'	Diln Fac:	1.000
Lab ID:	287271-003	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Analyzed:	03/24/17
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	ND	1.9	245865	03/23/17	EPA 3050B	EPA 6010B
Arsenic	3.4	1.4	245865	03/23/17	EPA 3050B	EPA 6010B
Barium	170	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Beryllium	0.55	0.096	245865	03/23/17	EPA 3050B	EPA 6010B
Cadmium	0.27	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Chromium	36	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Cobalt	11	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Copper	31	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Lead	11	0.96	245865	03/23/17	EPA 3050B	EPA 6010B
Mercury	0.093	0.016	245893	03/24/17	METHOD	EPA 7471A
Molybdenum	ND	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Nickel	35	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Selenium	ND	1.9	245865	03/23/17	EPA 3050B	EPA 6010B
Silver	ND	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Thallium	ND	0.48	245865	03/23/17	EPA 3050B	EPA 6010B
Vanadium	67	0.24	245865	03/23/17	EPA 3050B	EPA 6010B
Zinc	73	0.96	245865	03/23/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287271	Project#:	185703027
Client:	Stantec	Location:	City Ventures
Field ID:	S-3@0.5'	Diln Fac:	1.000
Lab ID:	287271-005	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Analyzed:	03/24/17
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Arsenic	ND	1.5	245865	03/23/17	EPA 3050B	EPA 6010B
Barium	240	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Beryllium	0.56	0.11	245865	03/23/17	EPA 3050B	EPA 6010B
Cadmium	ND	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Chromium	37	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Cobalt	11	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Copper	21	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Lead	14	1.0	245865	03/23/17	EPA 3050B	EPA 6010B
Mercury	0.043	0.017	245893	03/24/17	METHOD	EPA 7471A
Molybdenum	ND	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Nickel	40	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Silver	ND	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Thallium	ND	0.53	245865	03/23/17	EPA 3050B	EPA 6010B
Vanadium	57	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Zinc	56	1.1	245865	03/23/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287271	Project#:	185703027
Client:	Stantec	Location:	City Ventures
Field ID:	S-6@0.5'	Diln Fac:	1.000
Lab ID:	287271-007	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Analyzed:	03/24/17
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Arsenic	ND	1.5	245865	03/23/17	EPA 3050B	EPA 6010B
Barium	190	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Beryllium	0.53	0.10	245865	03/23/17	EPA 3050B	EPA 6010B
Cadmium	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Chromium	33	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Cobalt	11	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Copper	13	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Lead	18	1.0	245865	03/23/17	EPA 3050B	EPA 6010B
Mercury	0.34	0.017	245893	03/24/17	METHOD	EPA 7471A
Molybdenum	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Nickel	33	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Silver	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Thallium	ND	0.52	245865	03/23/17	EPA 3050B	EPA 6010B
Vanadium	69	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Zinc	63	1.0	245865	03/23/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287271	Project#:	185703027
Client:	Stantec	Location:	City Ventures
Field ID:	S-7@0.5'	Diln Fac:	1.000
Lab ID:	287271-009	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Analyzed:	03/24/17
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Arsenic	ND	1.5	245865	03/23/17	EPA 3050B	EPA 6010B
Barium	160	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Beryllium	0.51	0.10	245865	03/23/17	EPA 3050B	EPA 6010B
Cadmium	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Chromium	30	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Cobalt	8.7	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Copper	14	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Lead	13	1.0	245865	03/23/17	EPA 3050B	EPA 6010B
Mercury	0.27	0.016	245893	03/24/17	METHOD	EPA 7471A
Molybdenum	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Nickel	34	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Silver	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Thallium	ND	0.52	245865	03/23/17	EPA 3050B	EPA 6010B
Vanadium	43	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Zinc	74	1.0	245865	03/23/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287271	Project#:	185703027
Client:	Stantec	Location:	City Ventures
Field ID:	S-9@0.5'	Diln Fac:	1.000
Lab ID:	287271-011	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Analyzed:	03/24/17
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Arsenic	ND	1.5	245865	03/23/17	EPA 3050B	EPA 6010B
Barium	210	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Beryllium	0.47	0.11	245865	03/23/17	EPA 3050B	EPA 6010B
Cadmium	0.27	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Chromium	34	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Cobalt	7.9	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Copper	14	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Lead	12	1.0	245865	03/23/17	EPA 3050B	EPA 6010B
Mercury	0.078	0.017	245893	03/24/17	METHOD	EPA 7471A
Molybdenum	ND	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Nickel	39	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Silver	ND	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Thallium	ND	0.53	245865	03/23/17	EPA 3050B	EPA 6010B
Vanadium	44	0.27	245865	03/23/17	EPA 3050B	EPA 6010B
Zinc	53	1.1	245865	03/23/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287271	Project#:	185703027
Client:	Stantec	Location:	City Ventures
Field ID:	S-10@0.5'	Diln Fac:	1.000
Lab ID:	287271-013	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Analyzed:	03/24/17
Basis:	as received		

Analyte	Result	RL	Batch#	Prepared	Prep	Analysis
Antimony	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Arsenic	ND	1.5	245865	03/23/17	EPA 3050B	EPA 6010B
Barium	180	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Beryllium	0.47	0.10	245865	03/23/17	EPA 3050B	EPA 6010B
Cadmium	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Chromium	33	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Cobalt	8.0	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Copper	14	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Lead	14	1.0	245865	03/23/17	EPA 3050B	EPA 6010B
Mercury	0.26	0.016	245893	03/24/17	METHOD	EPA 7471A
Molybdenum	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Nickel	34	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245865	03/23/17	EPA 3050B	EPA 6010B
Silver	ND	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Thallium	ND	0.52	245865	03/23/17	EPA 3050B	EPA 6010B
Vanadium	45	0.26	245865	03/23/17	EPA 3050B	EPA 6010B
Zinc	60	1.0	245865	03/23/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 3050B
Project#:	185703027	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC878298	Batch#:	245865
Matrix:	Soil	Prepared:	03/23/17
Units:	mg/Kg	Analyzed:	03/24/17

Analyte	Result	RL
Antimony	ND	1.9
Arsenic	ND	1.4
Barium	ND	0.24
Beryllium	ND	0.096
Cadmium	ND	0.24
Chromium	0.31 b	0.24
Cobalt	ND	0.24
Copper	ND	0.24
Lead	ND	0.96
Molybdenum	ND	0.24
Nickel	0.33 b	0.24
Selenium	ND	1.9
Silver	ND	0.24
Thallium	ND	0.48
Vanadium	ND	0.24
Zinc	ND	0.96

b= See narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 3050B
Project#:	185703027	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	245865
Units:	mg/Kg	Prepared:	03/23/17
Diln Fac:	1.000	Analyzed:	03/24/17

Type: BS Lab ID: QC878299

Analyte	Spiked	Result	%REC	Limits
Antimony	53.19	55.40	104	80-120
Arsenic	53.19	54.89	103	80-120
Barium	53.19	55.53	104	80-120
Beryllium	26.60	26.57	100	80-120
Cadmium	53.19	52.67	99	80-120
Chromium	53.19	56.38	106	80-120
Cobalt	53.19	51.78	97	80-120
Copper	53.19	51.95	98	80-120
Lead	53.19	51.91	98	80-120
Molybdenum	53.19	53.85	101	80-120
Nickel	53.19	52.62	99	80-120
Selenium	53.19	52.97	100	80-120
Silver	5.319	5.039	95	80-120
Thallium	53.19	54.04	102	80-120
Vanadium	53.19	56.46	106	80-120
Zinc	53.19	52.55	99	80-120

Type: BSD Lab ID: QC878300

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	50.51	51.33	102	80-120	2	20
Arsenic	50.51	51.17	101	80-120	2	20
Barium	50.51	52.30	104	80-120	1	20
Beryllium	25.25	25.68	102	80-120	2	20
Cadmium	50.51	49.73	98	80-120	1	20
Chromium	50.51	52.92	105	80-120	1	20
Cobalt	50.51	48.96	97	80-120	0	20
Copper	50.51	51.92	103	80-120	5	20
Lead	50.51	52.74	104	80-120	7	20
Molybdenum	50.51	51.35	102	80-120	0	20
Nickel	50.51	49.91	99	80-120	0	20
Selenium	50.51	49.40	98	80-120	2	20
Silver	5.051	4.761	94	80-120	0	20
Thallium	50.51	50.87	101	80-120	1	20
Vanadium	50.51	52.82	105	80-120	1	20
Zinc	50.51	49.76	99	80-120	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	EPA 3050B
Project#:	185703027	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	245865
MSS Lab ID:	287234-035	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Prepared:	03/23/17
Basis:	as received	Analyzed:	03/24/17
Diln Fac:	1.000		

Type: MS Lab ID: QC878301

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	<0.1254	51.55	14.61	28	1-120
Arsenic	4.969	51.55	55.03	97	69-129
Barium	98.49	51.55	151.4	103	43-156
Beryllium	0.2770	25.77	24.66	95	80-120
Cadmium	0.6491	51.55	50.10	96	73-122
Chromium	32.38	51.55	84.29	101	63-135
Cobalt	5.231	51.55	49.56	86	66-121
Copper	16.95	51.55	69.23	101	72-133
Lead	60.62	51.55	111.3	98	50-131
Molybdenum	0.1431	51.55	45.05	87	67-120
Nickel	19.83	51.55	65.14	88	56-135
Selenium	0.3459	51.55	49.57	95	57-123
Silver	<0.04762	5.155	4.515	88	34-136
Thallium	<0.1434	51.55	45.96	89	57-121
Vanadium	29.32	51.55	79.82	98	70-131
Zinc	104.7	51.55	151.5	91	48-143

Type: MSD Lab ID: QC878302

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	50.00	14.10	28	1-120	1	43
Arsenic	50.00	53.76	98	69-129	0	30
Barium	50.00	149.3	102	43-156	0	40
Beryllium	25.00	24.11	95	80-120	1	20
Cadmium	50.00	49.25	97	73-122	1	28
Chromium	50.00	81.64	99	63-135	1	34
Cobalt	50.00	48.39	86	66-121	0	30
Copper	50.00	70.21	107	72-133	4	40
Lead	50.00	104.1	87	50-131	5	48
Molybdenum	50.00	44.11	88	67-120	1	20
Nickel	50.00	64.02	88	56-135	0	33
Selenium	50.00	48.72	97	57-123	1	29
Silver	5.000	4.429	89	34-136	1	39
Thallium	50.00	44.83	90	57-121	1	23
Vanadium	50.00	78.15	98	70-131	0	28
Zinc	50.00	142.1	75	48-143	5	33

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	METHOD
Project#:	185703027	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	245893
Lab ID:	QC878400	Prepared:	03/24/17
Matrix:	Soil	Analyzed:	03/24/17
Units:	mg/Kg		

Result	RL
ND	0.018

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	METHOD
Project#:	185703027	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	245893
Matrix:	Soil	Prepared:	03/24/17
Units:	mg/Kg	Analyzed:	03/24/17
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC878401	0.1984	0.1916	97	79-129		
BSD	QC878402	0.1953	0.1910	98	79-129	1	40

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287271	Location:	City Ventures
Client:	Stantec	Prep:	METHOD
Project#:	185703027	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	S-1@0.5'	Batch#:	245893
MSS Lab ID:	287271-001	Sampled:	03/22/17
Matrix:	Soil	Received:	03/22/17
Units:	mg/Kg	Prepared:	03/24/17
Basis:	as received	Analyzed:	03/24/17

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC878403	0.08377	0.2016	0.2869	101	63-149		
MSD	QC878404		0.2155	0.3094	105	63-149	3	69

RPD= Relative Percent Difference


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 287286
ANALYTICAL REPORT

Stantec	Project : 185703027
3875 Atherton Rd.	Location : City Ventures
Rocklin, CA 95765	Level : II

Sample ID	Lab ID
W-1	287286-001

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: 03/27/2017

Mike Dahlquist
Project Manager
mike.dahlquist@ctberk.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**287286**
Client:	**Stantec**
Project:	**185703027**
Location:	**City Ventures**
Request Date:	**03/23/17**
Samples Received:	**03/23/17**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/23/17. The sample was received cold and intact.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

C&T LOGIN # 287286

Chain of Custody # _____

Project No: 18570327
Project Name: City Ventures
Project P. O. No:
EDD Format: Report Level ☐ II ☐ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☒ Standard

Sampler: Miguel Cisneros
Report To: Don Schreiner
Company: Stantec
Telephone:
Email: Don.Schreiner@stantec.com

Lab No.	Sample ID.	SAMPLING		MATRIX				# of Containers	CHEMICAL PRESERVATIVE					ANALYTICAL REQUEST				
		Date Collected	Time Collected	Water	Solid				HCl	H_2SO_4	HNO_3	NaOH	None	VOCs	BTEX	TPH 8260	TPHd (no SGC)	
	W-1	3-23-17	0995	x				6	x					x	x	x	x	

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☒ On Ice
☐ Ambient

RELINQUISHED BY:
Miguel Cisneros DATE: 3-23-17 TIME: 1225
DATE: TIME:
DATE: TIME:

RECEIVED BY:
Pat Mongahy 3/23/17 DATE: TIME: 12:25
DATE: TIME:
DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 287286 Date Received 3/23/17 Number of coolers 1
Client STANTEC Project City Ventures

Date Opened 3/23/17 By (print) KPS (sign)
Date Logged in ↓ By (print) KPS (sign)
Date Labeled ↓ By (print) DM (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) 0.7

☐ Temperature blank(s) included? ☐ Thermometer# ☒ IR Gun# A

☐ 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) on
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
(10) Received 2 extra containers w/sample on 3.23.17 @ 2240

Curtis & Tompkins, Ltd.

Detections Summary for 287286

Results for any subcontracted analyses are not included in this summary.

Client : Stantec
Project : 185703027
Location : City Ventures

Client Sample ID : W-1 Laboratory Sample ID : 287286-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	290	Y	63	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Gasoline C7-C12	700		50	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
MTBE	0.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Isopropylbenzene	1.8		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Propylbenzene	5.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
sec-Butylbenzene	0.9		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
n-Butylbenzene	1.6		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Y = Sample exhibits chromatographic pattern which does not resemble standard

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	287286	Location:	City Ventures
Client:	Stantec	Prep:	EPA 3520C
Project#:	185703027	Analysis:	EPA 8015B
Field ID:	W-1	Sampled:	03/23/17
Matrix:	Water	Received:	03/23/17
Units:	ug/L	Prepared:	03/24/17
Diln Fac:	1.000	Analyzed:	03/27/17
Batch#:	245889		

Type: SAMPLE Lab ID: 287286-001

Analyte	Result	RL
Diesel C10-C24	290 Y	63
Motor Oil C24-C36	ND	380

Surrogate	%REC	Limits
o-Terphenyl	101	52-138

Type: BLANK Lab ID: QC878384

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
o-Terphenyl	86	52-138

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	287286	Location:	City Ventures
Client:	Stantec	Prep:	EPA 3520C
Project#:	185703027	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	245889
Units:	ug/L	Prepared:	03/24/17
Diln Fac:	1.000	Analyzed:	03/27/17

Type: BS Lab ID: QC878385

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,075	83	52-124

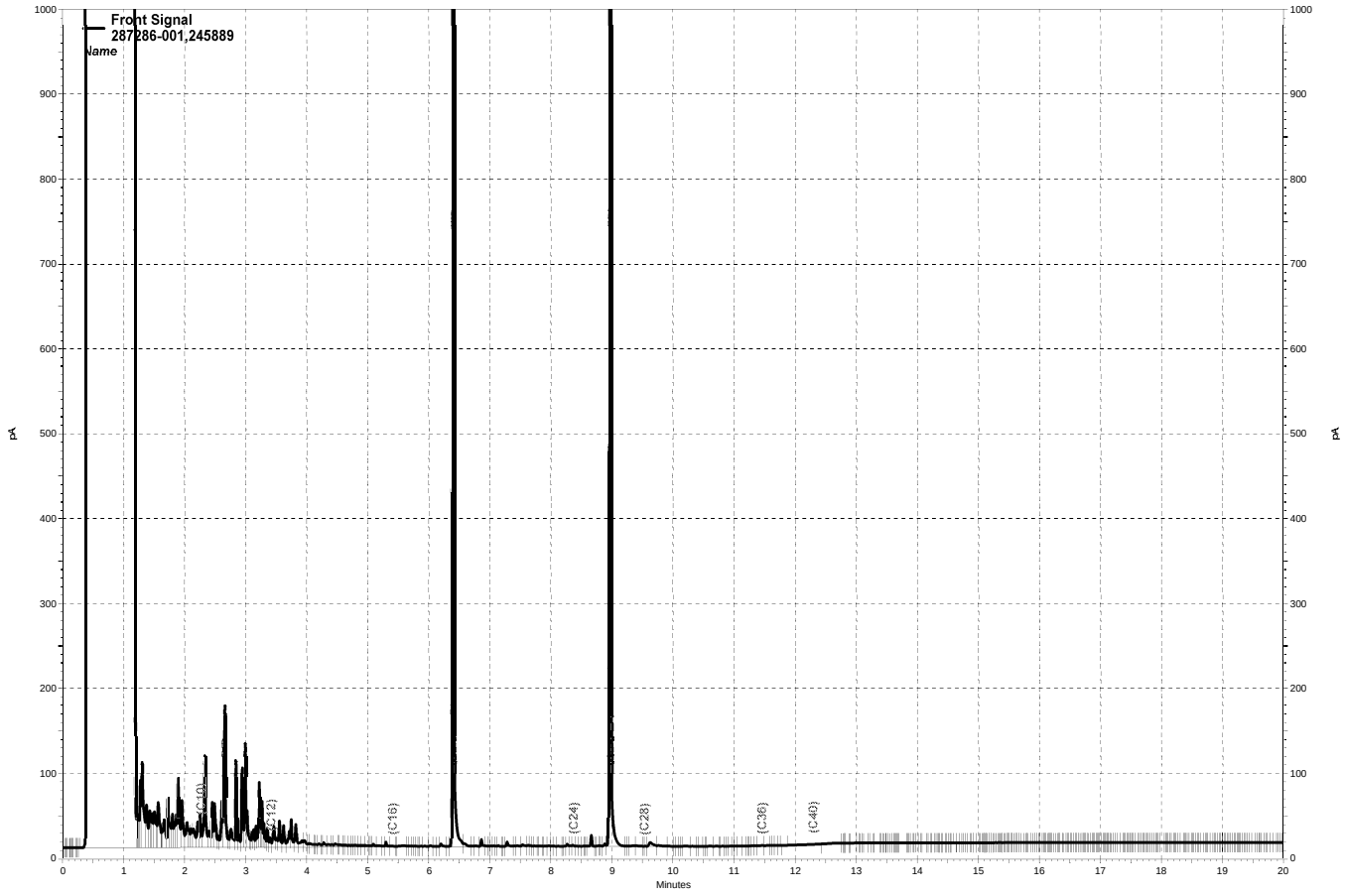
Surrogate	%REC	Limits
o-Terphenyl	103	52-138

Type: BSD Lab ID: QC878386

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,003	80	52-124	4	34

Surrogate	%REC	Limits
o-Terphenyl	99	52-138

RPD= Relative Percent Difference



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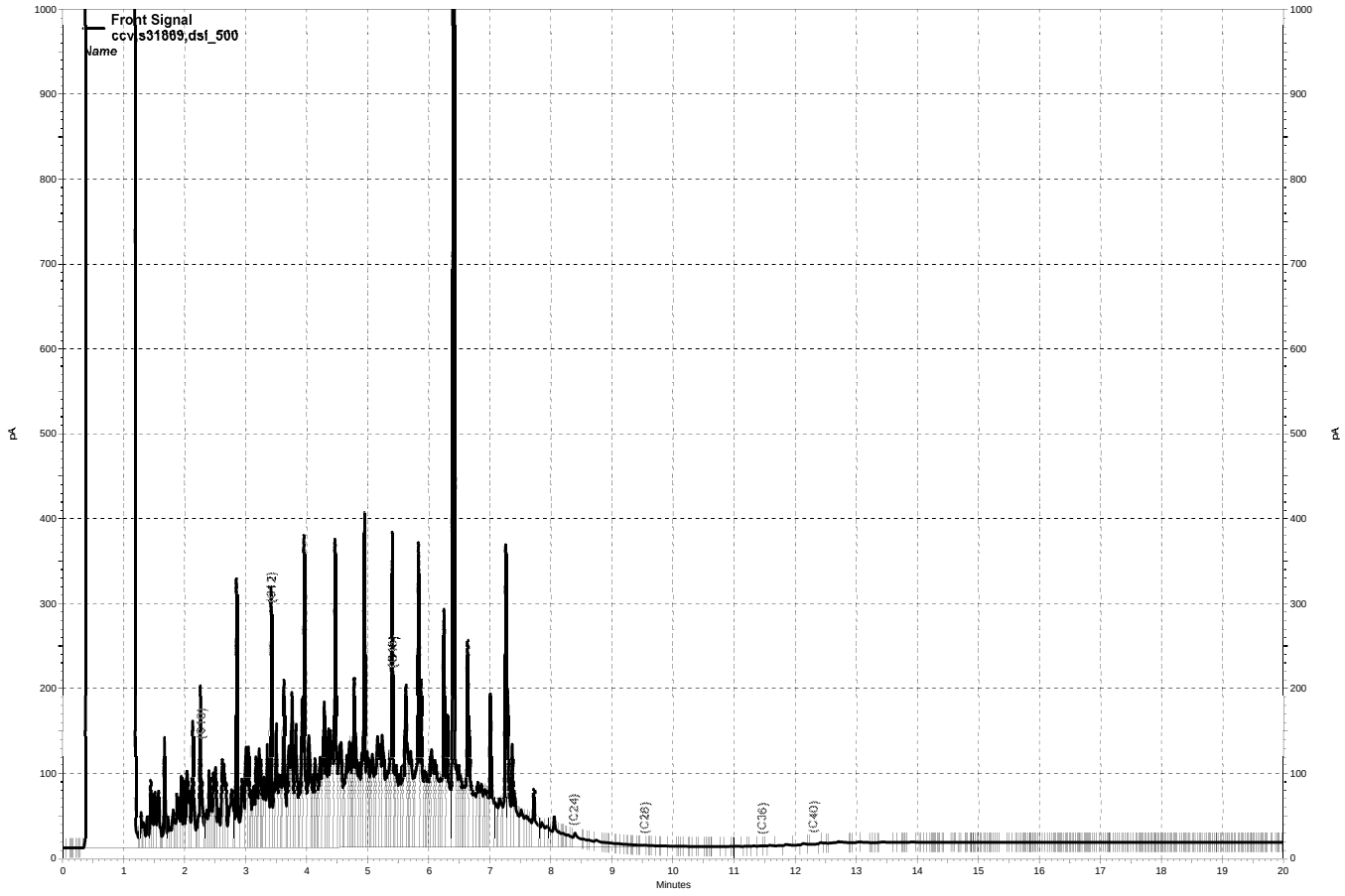

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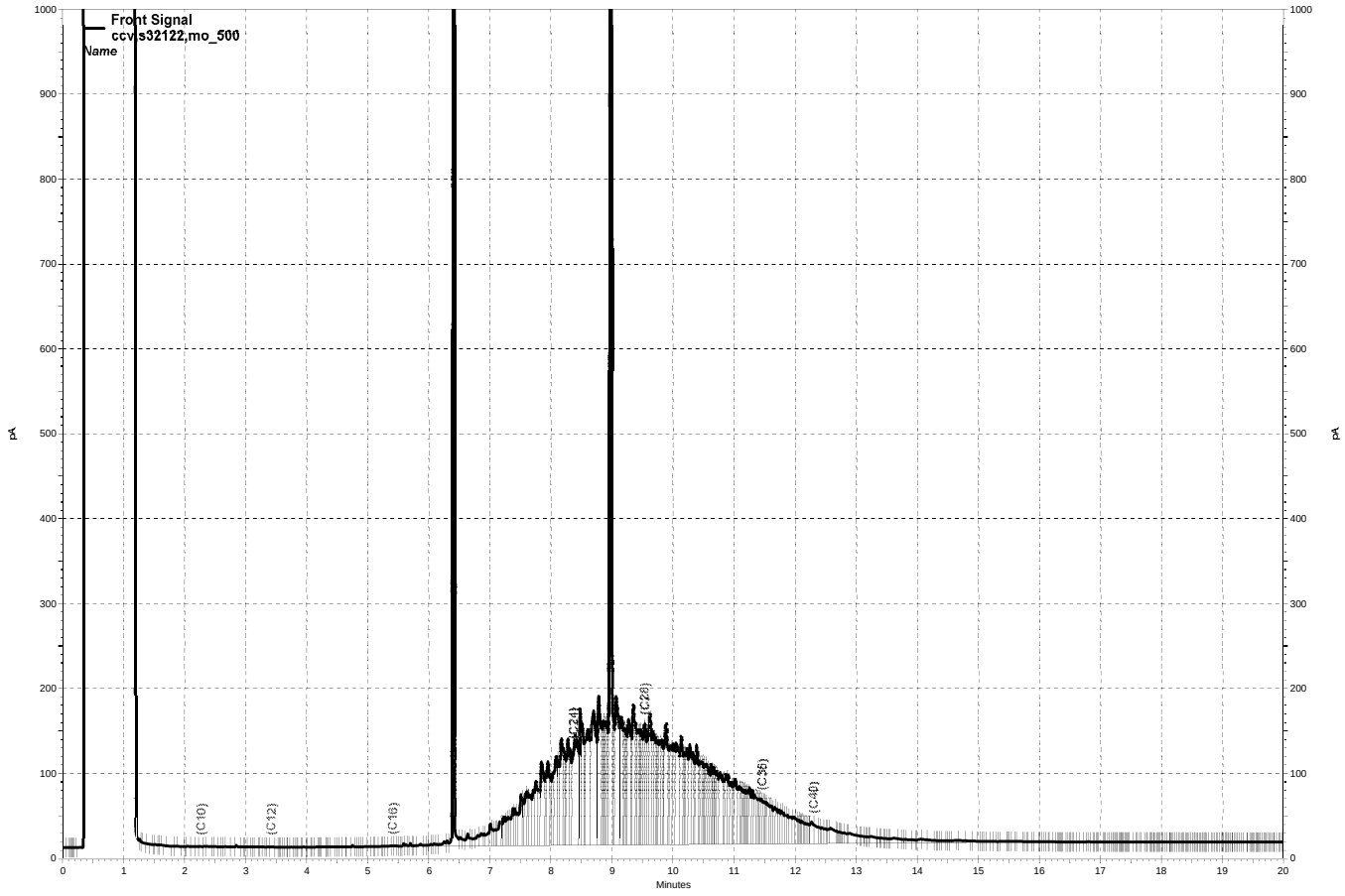

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Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	287286	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Field ID:	W-1	Batch#:	245934
Lab ID:	287286-001	Sampled:	03/23/17
Matrix:	Water	Received:	03/23/17
Units:	ug/L	Analyzed:	03/26/17
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C7-C12	700	50
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	0.6	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	287286	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Field ID:	W-1	Batch#:	245934
Lab ID:	287286-001	Sampled:	03/23/17
Matrix:	Water	Received:	03/23/17
Units:	ug/L	Analyzed:	03/26/17
Diln Fac:	1.000		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	1.8	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	5.6	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	0.9	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	1.6	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	91	80-120
1,2-Dichloroethane-d4	102	73-136
Toluene-d8	92	80-120
Bromofluorobenzene	93	80-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	287286	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	245934
Units:	ug/L	Analyzed:	03/26/17
Diln Fac:	1.000		

Type: BS Lab ID: QC878561

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	11.67	93	66-127
Benzene	12.50	11.66	93	78-123
Trichloroethene	12.50	11.43	91	75-120
Toluene	12.50	11.54	92	80-120
Chlorobenzene	12.50	11.26	90	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-120
1,2-Dichloroethane-d4	110	73-136
Toluene-d8	94	80-120
Bromofluorobenzene	90	80-120

Type: BSD Lab ID: QC878562

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	11.11	89	66-127	5	20
Benzene	12.50	11.43	91	78-123	2	20
Trichloroethene	12.50	11.47	92	75-120	0	20
Toluene	12.50	11.34	91	80-120	2	20
Chlorobenzene	12.50	11.23	90	80-120	0	20

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-120
1,2-Dichloroethane-d4	107	73-136
Toluene-d8	95	80-120
Bromofluorobenzene	92	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	287286	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	245934
Units:	ug/L	Analyzed:	03/26/17
Diln Fac:	1.000		

Type: BS Lab ID: QC878563

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,146	115	70-130

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-120
1,2-Dichloroethane-d4	105	73-136
Toluene-d8	94	80-120
Bromofluorobenzene	90	80-120

Type: BSD Lab ID: QC878564

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	1,112	111	70-130	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	90	80-120
1,2-Dichloroethane-d4	101	73-136
Toluene-d8	93	80-120
Bromofluorobenzene	90	80-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	287286	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC878565	Batch#:	245934
Matrix:	Water	Analyzed:	03/26/17
Units:	ug/L		

Analyte	Result	RL
Gasoline C7-C12	ND	50
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	287286	Location:	City Ventures
Client:	Stantec	Prep:	EPA 5030B
Project#:	185703027	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC878565	Batch#:	245934
Matrix:	Water	Analyzed:	03/26/17
Units:	ug/L		

Analyte	Result	RL
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

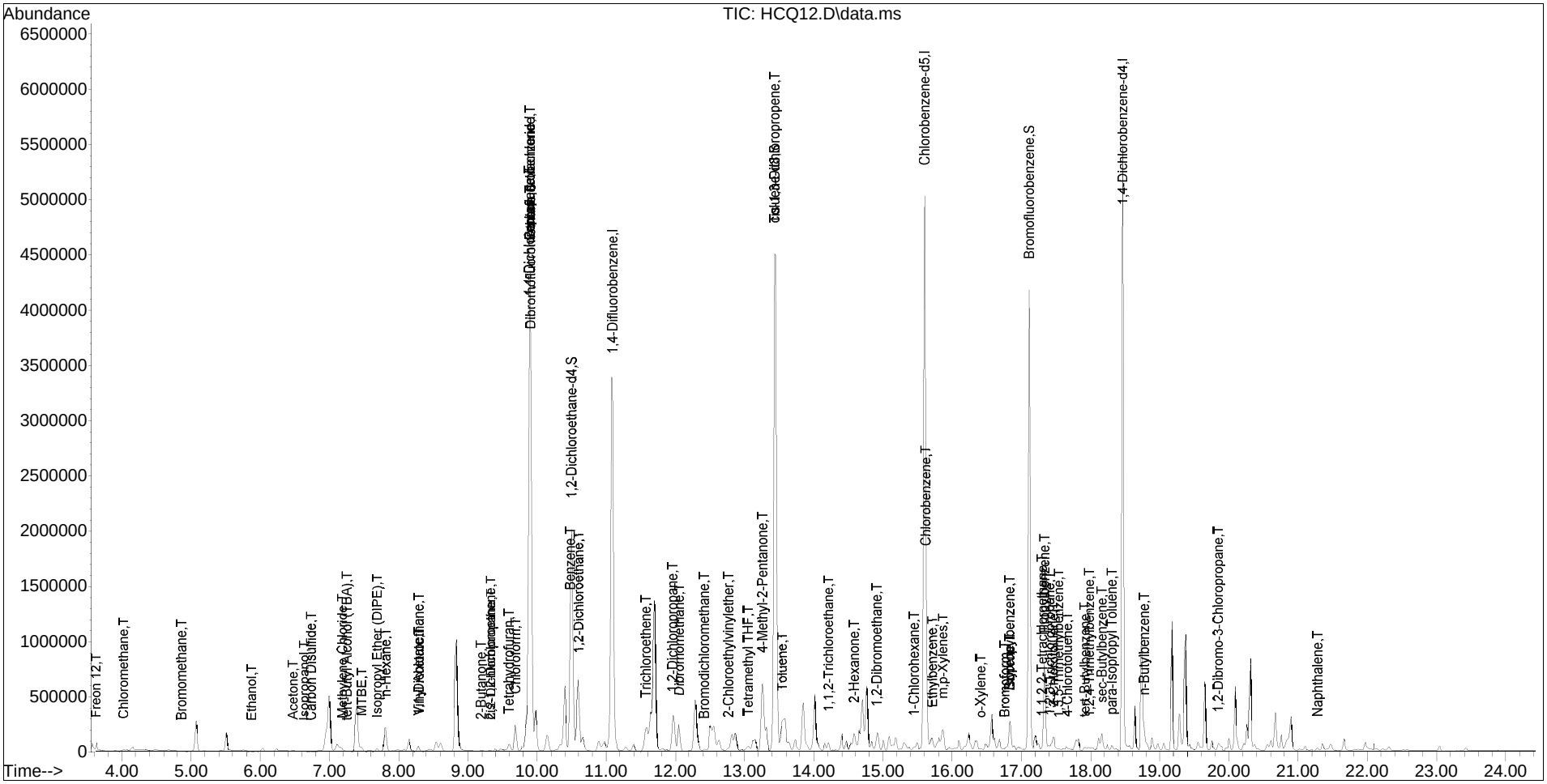
Surrogate	%REC	Limits
Dibromofluoromethane	91	80-120
1,2-Dichloroethane-d4	101	73-136
Toluene-d8	93	80-120
Bromofluorobenzene	91	80-120

ND= Not Detected
RL= Reporting Limit

Quantitation Report (QT Reviewed)

Data Path : G:\msvoa08\032617\
Data File : HCQ12.D
Acq On : 26 Mar 2017 1:08 pm
Operator :
Sample : s,287286-001
Misc : 245934,1/1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 27 15:50:22 2017
Quant Method : C:\msdchem\1\METHODS\8260X08W.M
Quant Title : MSVOA08 MSVOA WATER
QLast Update : Wed Feb 01 16:01:39 2017
Response via : Initial Calibration



Data File: \\gcmsserver\DD\chem\MSVOA08.i\032617\HCQ07TVH.D

Date : 26-MAR-2017 10:22

Client ID:

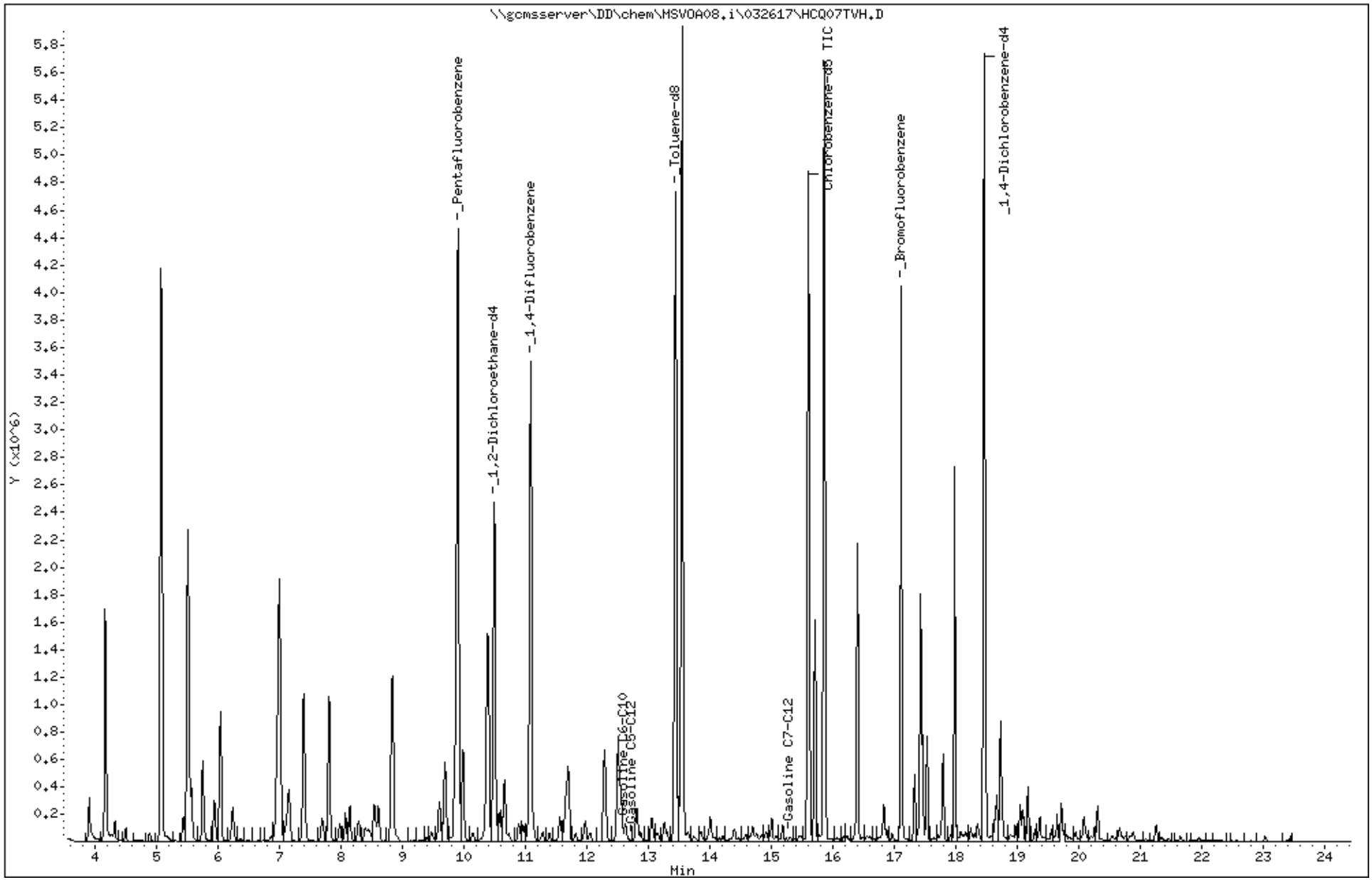
Instrument: MSVOA08.i

Sample Info: ccv/bs,qc878563,245934,s31872,.01/100

Operator: VOC

Column phase:

Column diameter: 2.00

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

Laboratory Job Number 287287
ANALYTICAL REPORT

Stantec
3875 Atherton Rd.
Rocklin, CA 95765

Project : 185703027

Level : II

Sample ID	Lab ID
S-4@0.5'	287287-001
S-4@3'	287287-002
S-5@0.5'	287287-003
S-5@3'	287287-004
S-8@0.5'	287287-005
S-8@3'	287287-006

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: 03/28/2017

Mike Dahlquist
Project Manager
mike.dahlquist@ctberk.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**287287**
Client:	**Stantec**
Project:	**185703027**
Request Date:	**03/23/17**
Samples Received:	**03/23/17**

This data package contains sample and QC results for three soil samples, requested for the above referenced project on 03/23/17. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
High recoveries were observed for diesel C10-C24 in the MS/MSD for batch 245858; the parent sample was not a project sample, the LCS was within limits, and the associated RPD was within limits. S-4@0.5' (lab # 287287-001) and S-8@0.5' (lab # 287287-005) were diluted due to the dark and viscous nature of the sample extracts. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

Metals (EPA 6010B and EPA 7471A):
No analytical problems were encountered.

CHAIN OF CUSTODY

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Fax (510) 486-0532

C&T LOGIN # 287287

Page 1 of 1

Chain of Custody # ______

Project No: ~~18570327~~ 185703027

Project Name: City Ventures

Project P. O. No:

EDD Format: Report Level ☐ II ☐ III ☐ IV

Turnaround Time: ☐ RUSH ______ ☒ Standard

Sampler: Miguel Cisneros

Report To: Don Schreine

Company: Stantec

Telephone: (916) 626-7882

Email: Don.Schreine@stantec.com

Lab No.	Sample ID.	Date Collected	Time Collected	Water	Solid			# of Containers	HCl	H2SO4	HNO3	NaOH	None	Cam 17	Hold	VOC's	TPHg	BTEX 8260	TPHd/mo 8015										
	S-4@0.5'	3-23-17	1048		✓			1					✓	X		X	X	X	X										
	S-4@3'	↓	1059		↓			↓					↓	X	X	X	X	X	X										
	S-5@0.5'	↓	1035		↓			↓					↓	X															
	S-5@3'	↓	1042		↓			↓					↓	X	X														
	S-8@0.5'	↓	1100		↓			↓					↓	X		X	X	X	X										
	S-8@3'	↓	1105		↓			↓					↓	X	X	X	X	X	X										

Notes:

SAMPLE RECEIPT
☐ Intact
☐ Cold
☒ On Ice
☐ Ambient

RELINQUISHED BY:			RECEIVED BY:		
Miguel Cisneros (signature)	DATE: 3-23-17	TIME: 1225	Pat Gonzalez (signature)	DATE: 3/23/17	TIME: 12:25
	DATE:	TIME:		DATE:	TIME:
	DATE:	TIME:		DATE:	TIME:

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 287287 Date Received 3/23/17 Number of coolers 1
Client STANTEC Project CITY VENTURES

Date Opened 3/23/17 By (print) KPS (sign) [signature]
Date Logged in ↓ By (print) KPS (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) 0.7

☐ Temperature blank(s) included? ☐ Thermometer# ☒ IR Gun# A

☒ 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

Curtis & Tompkins, Ltd.

Detections Summary for 287287

Results for any subcontracted analyses are not included in this summary.

Client : Stantec
Project : 185703027
Location :

Client Sample ID : S-4@0.5' Laboratory Sample ID : 287287-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	22	Y	3.0	mg/Kg	As Recd	3.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	170		15	mg/Kg	As Recd	3.000	EPA 8015B	EPA 3550B
Arsenic	1.7		1.5	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	220		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.52		0.098	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	0.28		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	35		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	12		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	17		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	13		0.98	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.093		0.017	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	39		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	57		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	51		0.98	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : S-5@0.5' Laboratory Sample ID : 287287-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Barium	200		0.28	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.45		0.11	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	39		0.28	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	13		0.28	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	19		0.28	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	240		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.065		0.015	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	35		0.28	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	61		0.28	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	66		1.1	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Curtis & Tompkins, Ltd.

Client Sample ID : S-8@0.5' Laboratory Sample ID : 287287-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	48	Y	2.0	mg/Kg	As Recd	2.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	200		10	mg/Kg	As Recd	2.000	EPA 8015B	EPA 3550B
Barium	230		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.46		0.099	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	38		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	9.5		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	16		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	16		0.99	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.11		0.016	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	35		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	50		0.25	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	58		0.99	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Y = Sample exhibits chromatographic pattern which does not resemble standard

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8015B
Project#:	185703027		
Matrix:	Soil	Batch#:	245914
Units:	mg/Kg	Sampled:	03/23/17
Basis:	as received	Received:	03/23/17
Diln Fac:	1.000		

Field ID: S-4@0.5' Lab ID: 287287-001
Type: SAMPLE Analyzed: 03/25/17

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	70-138

Field ID: S-8@0.5' Lab ID: 287287-005
Type: SAMPLE Analyzed: 03/25/17

Analyte	Result	RL
Gasoline C7-C12	ND	0.98

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	70-138

Type: BLANK Analyzed: 03/24/17
Lab ID: QC878489

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	70-138

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8015B
Project#:	185703027		
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC878486	Batch#:	245914
Matrix:	Soil	Analyzed:	03/24/17
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9355	94	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	70-138

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8015B
Project#:	185703027		
Field ID:	S-8@0.5'	Diln Fac:	1.000
MSS Lab ID:	287287-005	Batch#:	245914
Matrix:	Soil	Sampled:	03/23/17
Units:	mg/Kg	Received:	03/23/17
Basis:	as received	Analyzed:	03/25/17

Type: MS Lab ID: QC878487

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.08300	10.31	7.758	74	49-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	70-138

Type: MSD Lab ID: QC878488

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.615	7.238	74	49-120	0	32

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	70-138

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	287287	Prep:	EPA 3550B
Client:	Stantec	Analysis:	EPA 8015B
Project#:	185703027		
Matrix:	Soil	Sampled:	03/23/17
Units:	mg/Kg	Received:	03/23/17
Basis:	as received	Prepared:	03/23/17
Batch#:	245858		

Field ID:	S-4@0.5'	Diln Fac:	3.000
Type:	SAMPLE	Analyzed:	03/25/17
Lab ID:	287287-001		

Analyte	Result	RL
Diesel C10-C24	22 Y	3.0
Motor Oil C24-C36	170	15

Surrogate	%REC	Limits
o-Terphenyl	111	58-136

Field ID:	S-8@0.5'	Diln Fac:	2.000
Type:	SAMPLE	Analyzed:	03/25/17
Lab ID:	287287-005		

Analyte	Result	RL
Diesel C10-C24	48 Y	2.0
Motor Oil C24-C36	200	10

Surrogate	%REC	Limits
o-Terphenyl	113	58-136

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC878269	Analyzed:	03/24/17

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	122	58-136

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	287287	Prep:	EPA 3550B
Client:	Stantec	Analysis:	EPA 8015B
Project#:	185703027		
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC878270	Batch#:	245858
Matrix:	Soil	Prepared:	03/23/17
Units:	mg/Kg	Analyzed:	03/24/17

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.57	49.54	100	56-135

Surrogate	%REC	Limits
o-Terphenyl	109	58-136

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	287287	Prep:	EPA 3550B
Client:	Stantec	Analysis:	EPA 8015B
Project#:	185703027		
Field ID:	ZZZZZZZZZZ	Batch#:	245858
MSS Lab ID:	287045-009	Sampled:	03/15/17
Matrix:	Soil	Received:	03/16/17
Units:	mg/Kg	Prepared:	03/23/17
Basis:	as received	Analyzed:	03/24/17
Diln Fac:	2.000		

Type: MS Lab ID: QC878271

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	23.93	49.83	132.1	217 *	35-143

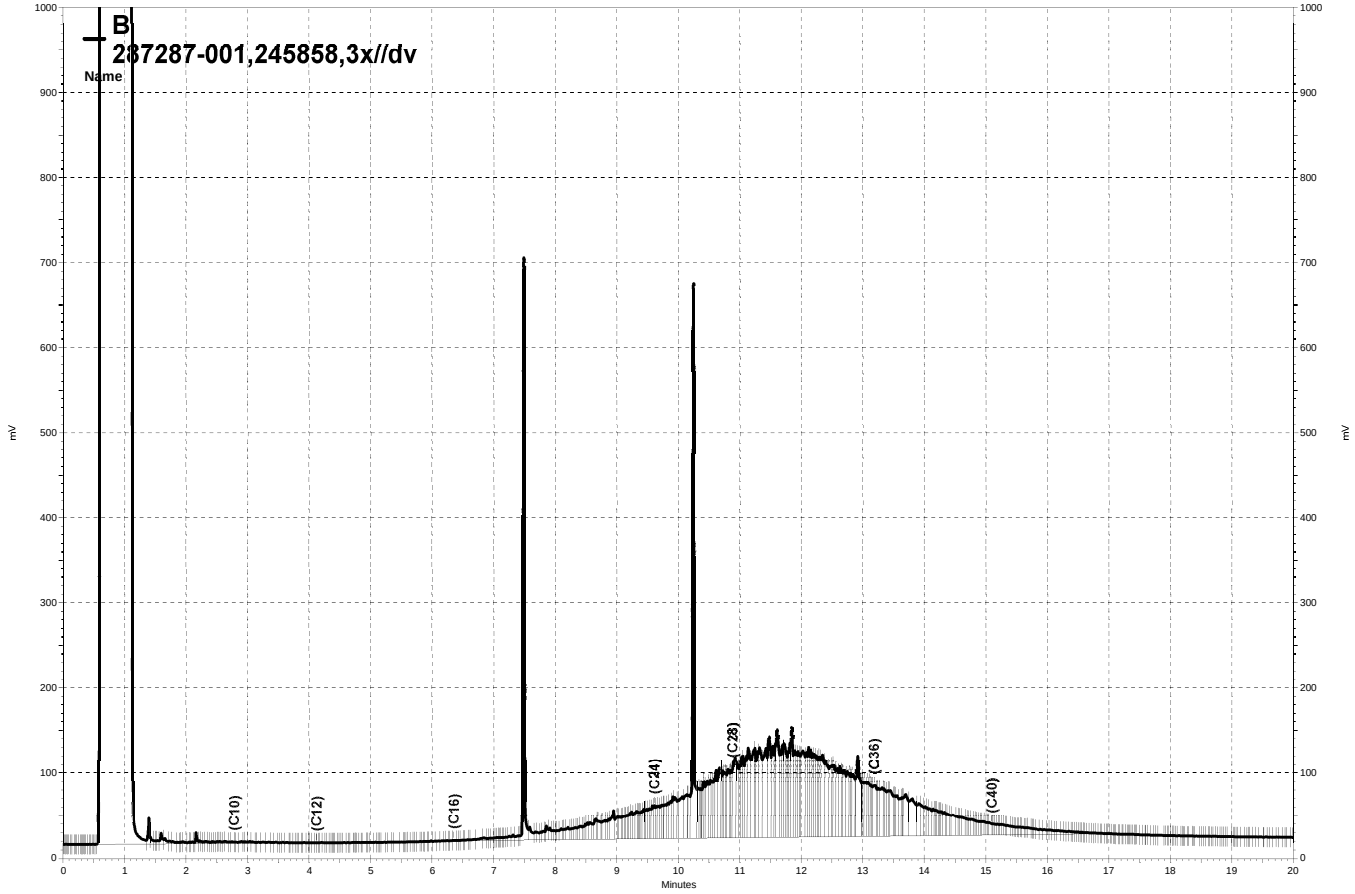
Surrogate	%REC	Limits
o-Terphenyl	104	58-136

Type: MSD Lab ID: QC878272

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.26	130.5	212 *	35-143	2	59

Surrogate	%REC	Limits
o-Terphenyl	107	58-136

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference



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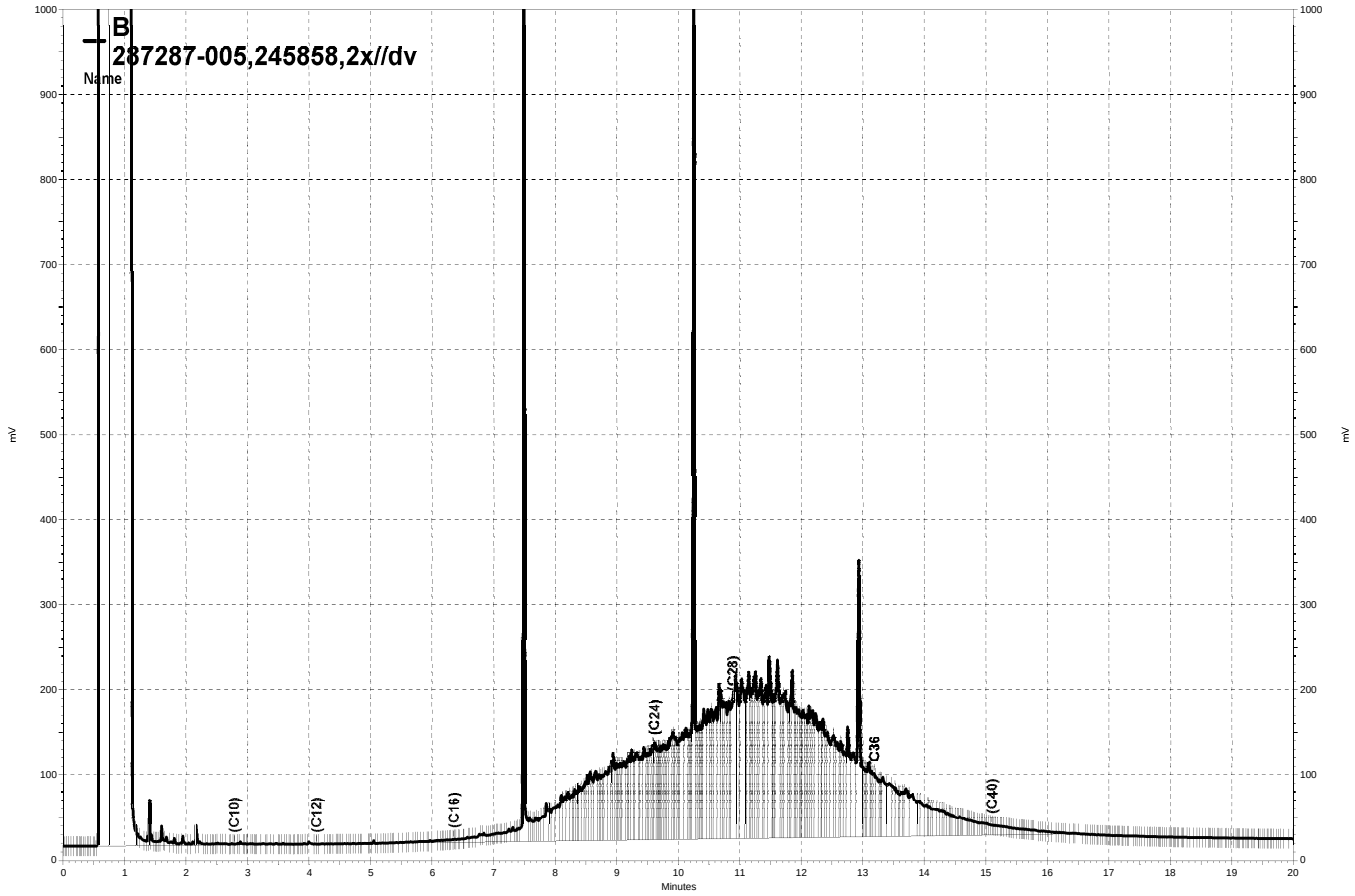

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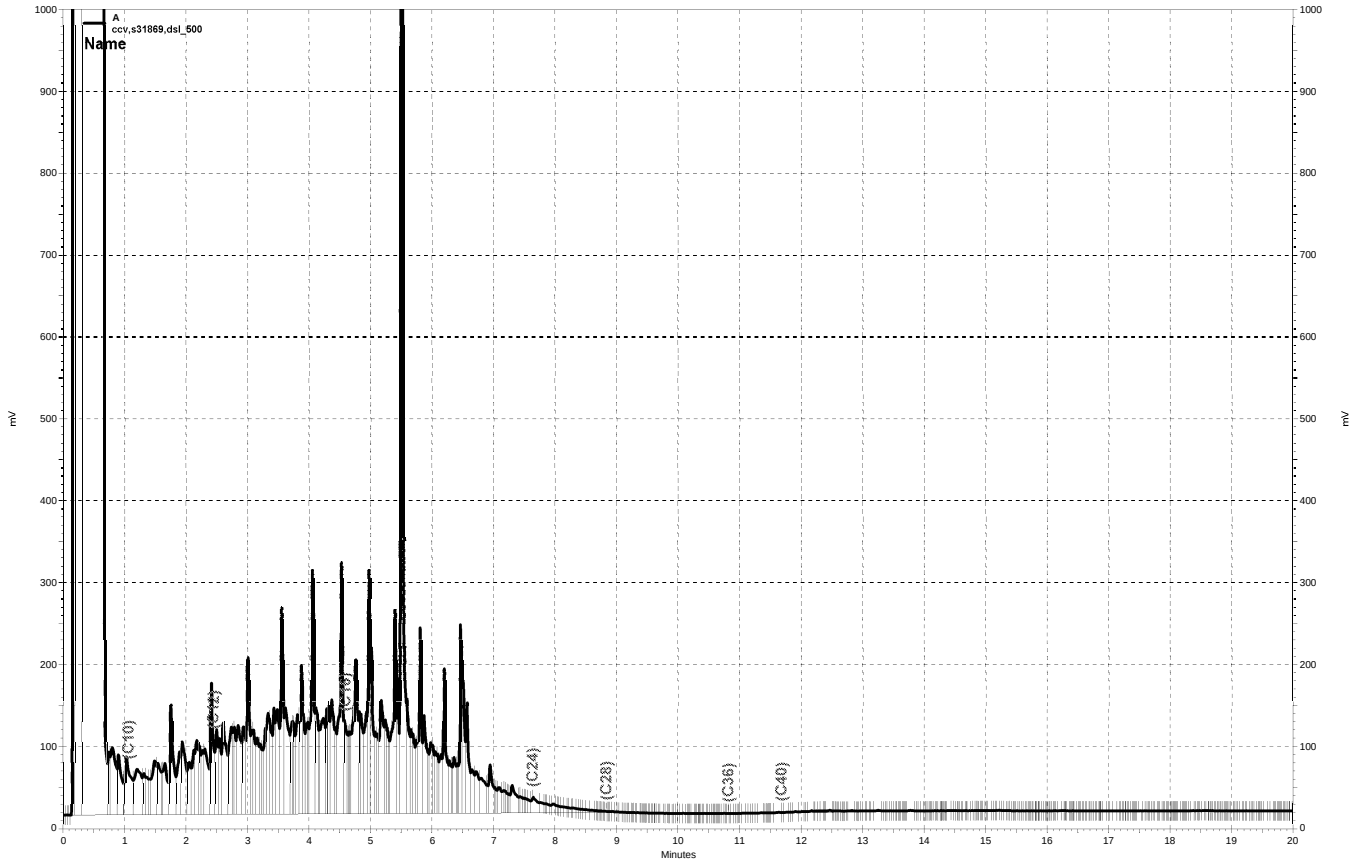

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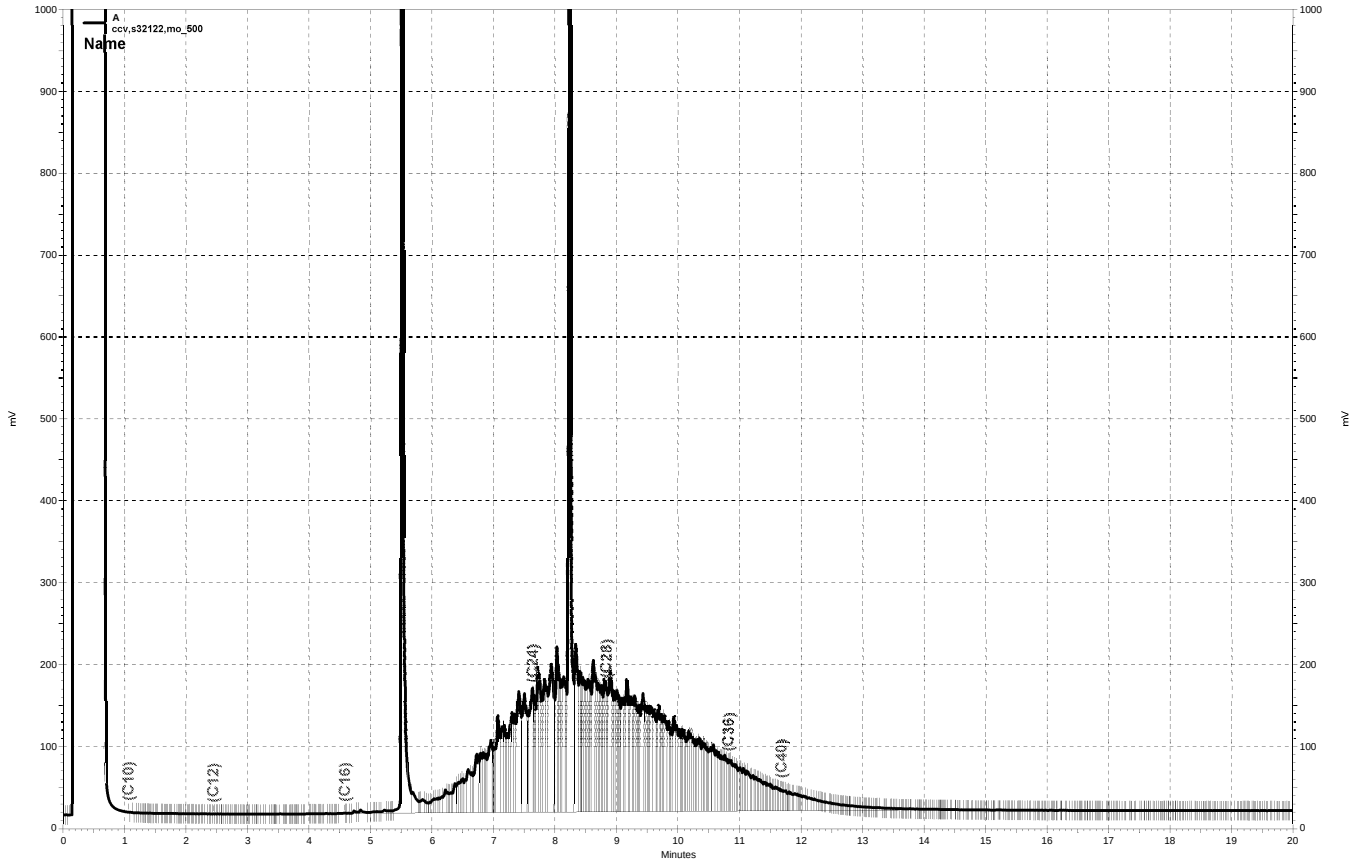

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Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8260B
Project#:	185703027		
Field ID:	S-4@0.5'	Diln Fac:	0.9542
Lab ID:	287287-001	Batch#:	245879
Matrix:	Soil	Sampled:	03/23/17
Units:	ug/Kg	Received:	03/23/17
Basis:	as received	Analyzed:	03/24/17

Analyte	Result	RL
Freon 12	ND	9.5
Chloromethane	ND	9.5
Vinyl Chloride	ND	9.5
Bromomethane	ND	9.5
Chloroethane	ND	9.5
Trichlorofluoromethane	ND	4.8
Acetone	ND	19
Freon 113	ND	4.8
1,1-Dichloroethene	ND	4.8
Methylene Chloride	ND	19
Carbon Disulfide	ND	4.8
MTBE	ND	4.8
trans-1,2-Dichloroethene	ND	4.8
Vinyl Acetate	ND	48
1,1-Dichloroethane	ND	4.8
2-Butanone	ND	9.5
cis-1,2-Dichloroethene	ND	4.8
2,2-Dichloropropane	ND	4.8
Chloroform	ND	4.8
Bromochloromethane	ND	4.8
1,1,1-Trichloroethane	ND	4.8
1,1-Dichloropropene	ND	4.8
Carbon Tetrachloride	ND	4.8
1,2-Dichloroethane	ND	4.8
Benzene	ND	4.8
Trichloroethene	ND	4.8
1,2-Dichloropropane	ND	4.8
Bromodichloromethane	ND	4.8
Dibromomethane	ND	4.8
4-Methyl-2-Pentanone	ND	9.5
cis-1,3-Dichloropropene	ND	4.8
Toluene	ND	4.8
trans-1,3-Dichloropropene	ND	4.8
1,1,2-Trichloroethane	ND	4.8
2-Hexanone	ND	9.5
1,3-Dichloropropane	ND	4.8
Tetrachloroethene	ND	4.8

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8260B
Project#:	185703027		
Field ID:	S-4@0.5'	Diln Fac:	0.9542
Lab ID:	287287-001	Batch#:	245879
Matrix:	Soil	Sampled:	03/23/17
Units:	ug/Kg	Received:	03/23/17
Basis:	as received	Analyzed:	03/24/17

Analyte	Result	RL
Dibromochloromethane	ND	4.8
1,2-Dibromoethane	ND	4.8
Chlorobenzene	ND	4.8
1,1,1,2-Tetrachloroethane	ND	4.8
Ethylbenzene	ND	4.8
m,p-Xylenes	ND	4.8
o-Xylene	ND	4.8
Styrene	ND	4.8
Bromoform	ND	4.8
Isopropylbenzene	ND	4.8
1,1,2,2-Tetrachloroethane	ND	4.8
1,2,3-Trichloropropane	ND	4.8
Propylbenzene	ND	4.8
Bromobenzene	ND	4.8
1,3,5-Trimethylbenzene	ND	4.8
2-Chlorotoluene	ND	4.8
4-Chlorotoluene	ND	4.8
tert-Butylbenzene	ND	4.8
1,2,4-Trimethylbenzene	ND	4.8
sec-Butylbenzene	ND	4.8
para-Isopropyl Toluene	ND	4.8
1,3-Dichlorobenzene	ND	4.8
1,4-Dichlorobenzene	ND	4.8
n-Butylbenzene	ND	4.8
1,2-Dichlorobenzene	ND	4.8
1,2-Dibromo-3-Chloropropane	ND	4.8
1,2,4-Trichlorobenzene	ND	4.8
Hexachlorobutadiene	ND	4.8
Naphthalene	ND	4.8
1,2,3-Trichlorobenzene	ND	4.8

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-128
1,2-Dichloroethane-d4	84	80-136
Toluene-d8	95	80-120
Bromofluorobenzene	96	80-132

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8260B
Project#:	185703027		
Field ID:	S-8@0.5'	Diln Fac:	0.9862
Lab ID:	287287-005	Batch#:	245879
Matrix:	Soil	Sampled:	03/23/17
Units:	ug/Kg	Received:	03/23/17
Basis:	as received	Analyzed:	03/24/17

Analyte	Result	RL
Freon 12	ND	9.9
Chloromethane	ND	9.9
Vinyl Chloride	ND	9.9
Bromomethane	ND	9.9
Chloroethane	ND	9.9
Trichlorofluoromethane	ND	4.9
Acetone	ND	20
Freon 113	ND	4.9
1,1-Dichloroethene	ND	4.9
Methylene Chloride	ND	20
Carbon Disulfide	ND	4.9
MTBE	ND	4.9
trans-1,2-Dichloroethene	ND	4.9
Vinyl Acetate	ND	49
1,1-Dichloroethane	ND	4.9
2-Butanone	ND	9.9
cis-1,2-Dichloroethene	ND	4.9
2,2-Dichloropropane	ND	4.9
Chloroform	ND	4.9
Bromochloromethane	ND	4.9
1,1,1-Trichloroethane	ND	4.9
1,1-Dichloropropene	ND	4.9
Carbon Tetrachloride	ND	4.9
1,2-Dichloroethane	ND	4.9
Benzene	ND	4.9
Trichloroethene	ND	4.9
1,2-Dichloropropane	ND	4.9
Bromodichloromethane	ND	4.9
Dibromomethane	ND	4.9
4-Methyl-2-Pentanone	ND	9.9
cis-1,3-Dichloropropene	ND	4.9
Toluene	ND	4.9
trans-1,3-Dichloropropene	ND	4.9
1,1,2-Trichloroethane	ND	4.9
2-Hexanone	ND	9.9
1,3-Dichloropropane	ND	4.9
Tetrachloroethene	ND	4.9

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8260B
Project#:	185703027		
Field ID:	S-8@0.5'	Diln Fac:	0.9862
Lab ID:	287287-005	Batch#:	245879
Matrix:	Soil	Sampled:	03/23/17
Units:	ug/Kg	Received:	03/23/17
Basis:	as received	Analyzed:	03/24/17

Analyte	Result	RL
Dibromochloromethane	ND	4.9
1,2-Dibromoethane	ND	4.9
Chlorobenzene	ND	4.9
1,1,1,2-Tetrachloroethane	ND	4.9
Ethylbenzene	ND	4.9
m,p-Xylenes	ND	4.9
o-Xylene	ND	4.9
Styrene	ND	4.9
Bromoform	ND	4.9
Isopropylbenzene	ND	4.9
1,1,2,2-Tetrachloroethane	ND	4.9
1,2,3-Trichloropropane	ND	4.9
Propylbenzene	ND	4.9
Bromobenzene	ND	4.9
1,3,5-Trimethylbenzene	ND	4.9
2-Chlorotoluene	ND	4.9
4-Chlorotoluene	ND	4.9
tert-Butylbenzene	ND	4.9
1,2,4-Trimethylbenzene	ND	4.9
sec-Butylbenzene	ND	4.9
para-Isopropyl Toluene	ND	4.9
1,3-Dichlorobenzene	ND	4.9
1,4-Dichlorobenzene	ND	4.9
n-Butylbenzene	ND	4.9
1,2-Dichlorobenzene	ND	4.9
1,2-Dibromo-3-Chloropropane	ND	4.9
1,2,4-Trichlorobenzene	ND	4.9
Hexachlorobutadiene	ND	4.9
Naphthalene	ND	4.9
1,2,3-Trichlorobenzene	ND	4.9

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-128
1,2-Dichloroethane-d4	82	80-136
Toluene-d8	96	80-120
Bromofluorobenzene	96	80-132

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8260B
Project#:	185703027		
Matrix:	Soil	Batch#:	245879
Units:	ug/Kg	Analyzed:	03/24/17
Diln Fac:	1.000		

Type: BS Lab ID: QC878336

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	25.00	27.51	110	65-127
Benzene	25.00	26.72	107	75-124
Trichloroethene	25.00	26.29	105	76-122
Toluene	25.00	26.32	105	77-120
Chlorobenzene	25.00	27.05	108	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-128
1,2-Dichloroethane-d4	83	80-136
Toluene-d8	97	80-120
Bromofluorobenzene	94	80-132

Type: BSD Lab ID: QC878337

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	25.00	24.99	100	65-127	10	28
Benzene	25.00	24.09	96	75-124	10	25
Trichloroethene	25.00	23.70	95	76-122	10	26
Toluene	25.00	23.93	96	77-120	10	25
Chlorobenzene	25.00	24.48	98	80-120	10	24

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-128
1,2-Dichloroethane-d4	83	80-136
Toluene-d8	97	80-120
Bromofluorobenzene	94	80-132

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8260B
Project#:	185703027		
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC878338	Batch#:	245879
Matrix:	Soil	Analyzed:	03/24/17
Units:	ug/Kg		

Analyte	Result	RL
Freon 12	ND	10
Chloromethane	ND	10
Vinyl Chloride	ND	10
Bromomethane	ND	10
Chloroethane	ND	10
Trichlorofluoromethane	ND	5.0
Acetone	ND	20
Freon 113	ND	5.0
1,1-Dichloroethene	ND	5.0
Methylene Chloride	ND	20
Carbon Disulfide	ND	5.0
MTBE	ND	5.0
trans-1,2-Dichloroethene	ND	5.0
Vinyl Acetate	ND	50
1,1-Dichloroethane	ND	5.0
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	5.0
2,2-Dichloropropane	ND	5.0
Chloroform	ND	5.0
Bromochloromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1-Dichloropropene	ND	5.0
Carbon Tetrachloride	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Trichloroethene	ND	5.0
1,2-Dichloropropane	ND	5.0
Bromodichloromethane	ND	5.0
Dibromomethane	ND	5.0
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	5.0
Toluene	ND	5.0
trans-1,3-Dichloropropene	ND	5.0
1,1,2-Trichloroethane	ND	5.0
2-Hexanone	ND	10
1,3-Dichloropropane	ND	5.0
Tetrachloroethene	ND	5.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8260B
Project#:	185703027		
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC878338	Batch#:	245879
Matrix:	Soil	Analyzed:	03/24/17
Units:	ug/Kg		

Analyte	Result	RL
Dibromochloromethane	ND	5.0
1,2-Dibromoethane	ND	5.0
Chlorobenzene	ND	5.0
1,1,1,2-Tetrachloroethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Styrene	ND	5.0
Bromoform	ND	5.0
Isopropylbenzene	ND	5.0
1,1,2,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
Propylbenzene	ND	5.0
Bromobenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
tert-Butylbenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
sec-Butylbenzene	ND	5.0
para-Isopropyl Toluene	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,4-Dichlorobenzene	ND	5.0
n-Butylbenzene	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dibromo-3-Chloropropane	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
Hexachlorobutadiene	ND	5.0
Naphthalene	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-128
1,2-Dichloroethane-d4	93	80-136
Toluene-d8	98	80-120
Bromofluorobenzene	99	80-132

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	287287	Prep:	EPA 5030B
Client:	Stantec	Analysis:	EPA 8260B
Project#:	185703027		
Field ID:	S-4@0.5'	Batch#:	245879
MSS Lab ID:	287287-001	Sampled:	03/23/17
Matrix:	Soil	Received:	03/23/17
Units:	ug/Kg	Analyzed:	03/24/17
Basis:	as received		

Type: MS Diln Fac: 0.9208
Lab ID: QC878353

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.5712	46.04	46.53	101	65-131
Benzene	<0.6655	46.04	39.72	86	68-123
Trichloroethene	<0.6932	46.04	41.65	90	60-136
Toluene	<0.7290	46.04	38.17	83	64-120
Chlorobenzene	<0.5976	46.04	37.12	81	59-120

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-128
1,2-Dichloroethane-d4	81	80-136
Toluene-d8	96	80-120
Bromofluorobenzene	91	80-132

Type: MSD Diln Fac: 0.9174
Lab ID: QC878354

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	45.87	47.55	104	65-131	3	33
Benzene	45.87	40.96	89	68-123	3	30
Trichloroethene	45.87	43.19	94	60-136	4	34
Toluene	45.87	38.96	85	64-120	2	31
Chlorobenzene	45.87	37.74	82	59-120	2	33

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-128
1,2-Dichloroethane-d4	83	80-136
Toluene-d8	96	80-120
Bromofluorobenzene	93	80-132

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287287	Project#:	185703027
Client:	Stantec		
Field ID:	S-4@0.5'	Basis:	as received
Lab ID:	287287-001	Diln Fac:	1.000
Matrix:	Soil	Sampled:	03/23/17
Units:	mg/Kg	Received:	03/23/17

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	2.0	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Arsenic	1.7	1.5	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Barium	220	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Beryllium	0.52	0.098	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Cadmium	0.28	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Chromium	35	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Cobalt	12	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Copper	17	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Lead	13	0.98	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Mercury	0.093	0.017	245968	03/27/17	03/27/17	METHOD	EPA 7471A
Molybdenum	ND	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Nickel	39	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Silver	ND	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Thallium	ND	0.49	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Vanadium	57	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Zinc	51	0.98	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287287	Project#:	185703027
Client:	Stantec		
Field ID:	S-5@0.5'	Basis:	as received
Lab ID:	287287-003	Diln Fac:	1.000
Matrix:	Soil	Sampled:	03/23/17
Units:	mg/Kg	Received:	03/23/17

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	2.0	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Arsenic	ND	1.5	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Barium	200	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Beryllium	0.45	0.11	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Cadmium	ND	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Chromium	39	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Cobalt	13	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Copper	19	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Lead	240	1.0	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Mercury	0.065	0.015	245968	03/27/17	03/27/17	METHOD	EPA 7471A
Molybdenum	ND	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Nickel	35	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Silver	ND	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Thallium	ND	0.56	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Vanadium	61	0.28	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Zinc	66	1.1	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

California Title 22 Metals

Lab #:	287287	Project#:	185703027
Client:	Stantec		
Field ID:	S-8@0.5'	Basis:	as received
Lab ID:	287287-005	Diln Fac:	1.000
Matrix:	Soil	Sampled:	03/23/17
Units:	mg/Kg	Received:	03/23/17

Analyte	Result	RL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	2.0	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Arsenic	ND	1.5	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Barium	230	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Beryllium	0.46	0.099	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Cadmium	ND	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Chromium	38	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Cobalt	9.5	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Copper	16	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Lead	16	0.99	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Mercury	0.11	0.016	245968	03/27/17	03/27/17	METHOD	EPA 7471A
Molybdenum	ND	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Nickel	35	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Silver	ND	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Thallium	ND	0.50	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Vanadium	50	0.25	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B
Zinc	58	0.99	245911	03/24/17	03/25/17	EPA 3050B	EPA 6010B

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287287	Prep:	EPA 3050B
Client:	Stantec	Analysis:	EPA 6010B
Project#:	185703027		
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC878471	Batch#:	245911
Matrix:	Soil	Prepared:	03/24/17
Units:	mg/Kg	Analyzed:	03/24/17

Analyte	Result	RL
Antimony	ND	2.0
Arsenic	ND	1.5
Barium	ND	0.25
Beryllium	ND	0.098
Cadmium	ND	0.25
Chromium	ND	0.25
Cobalt	ND	0.25
Copper	ND	0.25
Lead	ND	0.98
Molybdenum	ND	0.25
Nickel	ND	0.25
Selenium	ND	2.0
Silver	ND	0.25
Thallium	ND	0.49
Vanadium	ND	0.25
Zinc	ND	0.98

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287287	Prep:	EPA 3050B
Client:	Stantec	Analysis:	EPA 6010B
Project#:	185703027		
Matrix:	Soil	Batch#:	245911
Units:	mg/Kg	Prepared:	03/24/17
Diln Fac:	1.000	Analyzed:	03/24/17

Type: BS Lab ID: QC878472

Analyte	Spiked	Result	%REC	Limits
Antimony	51.02	54.09	106	80-120
Arsenic	51.02	53.56	105	80-120
Barium	51.02	52.24	102	80-120
Beryllium	25.51	25.79	101	80-120
Cadmium	51.02	51.14	100	80-120
Chromium	51.02	55.32	108	80-120
Cobalt	51.02	50.52	99	80-120
Copper	51.02	48.85	96	80-120
Lead	51.02	50.92	100	80-120
Molybdenum	51.02	52.60	103	80-120
Nickel	51.02	51.17	100	80-120
Selenium	51.02	50.53	99	80-120
Silver	5.102	4.751	93	80-120
Thallium	51.02	51.59	101	80-120
Vanadium	51.02	54.78	107	80-120
Zinc	51.02	51.77	101	80-120

Type: BSD Lab ID: QC878473

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	52.63	54.78	104	80-120	2	20
Arsenic	52.63	54.30	103	80-120	2	20
Barium	52.63	54.41	103	80-120	1	20
Beryllium	26.32	26.43	100	80-120	1	20
Cadmium	52.63	52.09	99	80-120	1	20
Chromium	52.63	56.82	108	80-120	0	20
Cobalt	52.63	51.97	99	80-120	0	20
Copper	52.63	50.32	96	80-120	0	20
Lead	52.63	53.11	101	80-120	1	20
Molybdenum	52.63	54.49	104	80-120	0	20
Nickel	52.63	52.46	100	80-120	1	20
Selenium	52.63	51.54	98	80-120	1	20
Silver	5.263	4.899	93	80-120	0	20
Thallium	52.63	52.24	99	80-120	2	20
Vanadium	52.63	56.62	108	80-120	0	20
Zinc	52.63	53.29	101	80-120	0	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287287	Prep:	METHOD
Client:	Stantec	Analysis:	EPA 7471A
Project#:	185703027		
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	245968
Lab ID:	QC878695	Prepared:	03/27/17
Matrix:	Soil	Analyzed:	03/27/17
Units:	mg/Kg		

Result	RL
ND	0.016

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287287	Prep:	METHOD
Client:	Stantec	Analysis:	EPA 7471A
Project#:	185703027		
Analyte:	Mercury	Batch#:	245968
Matrix:	Soil	Prepared:	03/27/17
Units:	mg/Kg	Analyzed:	03/27/17
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC878696	0.2083	0.2126	102	79-129		
BSD	QC878697	0.2155	0.2182	101	79-129	1	40

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

California Title 22 Metals

Lab #:	287287	Prep:	METHOD
Client:	Stantec	Analysis:	EPA 7471A
Project#:	185703027		
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	245968
MSS Lab ID:	287208-002	Sampled:	03/21/17
Matrix:	Soil	Received:	03/21/17
Units:	mg/Kg	Prepared:	03/27/17
Basis:	as received	Analyzed:	03/27/17

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC878698	0.04754	0.2016	0.2524	102	63-149		
MSD	QC878699		0.1984	0.2506	102	63-149	1	69

RPD= Relative Percent Difference


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

Laboratory Job Number 287480
ANALYTICAL REPORT

Stantec 3875 Atherton Rd. Rocklin, CA 95765	Project : 185703027 Level : II

Sample ID	Lab ID
S-5@3'	287480-001

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: 03/30/2017

Mike Dahlquist
Project Manager
mike.dahlquist@ctberk.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**287480**
Client:	**Stantec**
Project:	**185703027**
Request Date:	**03/29/17**
Samples Received:	**03/23/17**

This data package contains sample and QC results for one soil sample, requested for the above referenced project on 03/29/17. The sample was received cold and intact.

Metals (EPA 6010B):

No analytical problems were encountered.

Curtis & Tompkins, Ltd.

Detections Summary for 287480

Results for any subcontracted analyses are not included in this summary.

Client : Stantec
Project : 185703027
Location :

Client Sample ID : S-5@3' Laboratory Sample ID : 287480-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	5.5		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Curtis & Tompkins, Ltd.

Lead

Lab #:	287480	Prep:	EPA 3050B
Client:	Stantec	Analysis:	EPA 6010B
Project#:	185703027		
Analyte:	Lead	Batch#:	246096
Field ID:	S-5@3'	Sampled:	03/23/17
Matrix:	Soil	Received:	03/23/17
Units:	mg/Kg	Prepared:	03/29/17
Basis:	as received	Analyzed:	03/30/17
Diln Fac:	1.000		

Type	Lab ID	Result	RL
SAMPLE	287480-001	5.5	1.0
BLANK	QC879203	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Lead

Lab #:	287480	Prep:	EPA 3050B
Client:	Stantec	Analysis:	EPA 6010B
Project#:	185703027		
Analyte:	Lead	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	246096
MSS Lab ID:	287492-002	Sampled:	03/29/17
Matrix:	Soil	Received:	03/29/17
Units:	mg/Kg	Prepared:	03/29/17
Basis:	as received	Analyzed:	03/30/17

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC879204		50.51	50.10	99	80-120		
BSD	QC879205		53.76	54.37	101	80-120	2	20
MS	QC879206	12.66	54.95	62.61	91	50-131		
MSD	QC879207		49.50	55.38	86	50-131	4	48

RPD= Relative Percent Difference


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Laboratory Job Number 287575
ANALYTICAL REPORT

Stantec	Project : STANDARD
3875 Atherton Rd.	Location : City Venture W.Grand/Filbert
Rocklin, CA 95765	Level : II

Sample ID	Lab ID
S-5-N-1	287575-001
S-5-S-1	287575-002
S-5-E-1	287575-003
S-5-W-1	287575-004
S-5-N-2	287575-005
S-5-S-2	287575-006
S-5-E-2	287575-007
S-5-W-2	287575-008

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Signature: _____ Date: 04/07/2017

Mike Dahlquist
Project Manager
mike.dahlquist@ctberk.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**287575**
Client:	**Stantec**
Location:	**City Venture W.Grand/Filbert**
Request Date:	**03/31/17**
Samples Received:	**03/31/17**

This data package contains sample and QC results for four soil samples, requested for the above referenced project on 03/31/17. The samples were received cold and intact.

Metals (EPA 6010B):
No analytical problems were encountered.

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Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

Chain of Custody # :

C&T LOGIN # 287575

Project No:

Project Name: City Venture W. Grand / Filbert

EDD Format: _____ Rpt Level: ☐ II ☐ III ☐ IV

Turnaround Time: ☐ RUSH _____ ☒ Standard

Call Dan & Confirm

Sampler: Damon Minarch

Report To: Dan Schreiner

Company: Stantec

Telephone: 916-626-7882

Email: dan.schreiner@stantec.com

Lab No.	Sample ID.	Sampling Date	Sampling Time	Matrix: Water	Matrix: Soil	Matrix:	Matrix:	# of Containers	Chemical Preservative: HCl	H_2SO_4	HNO_3	NaOH	None	Analytical Request: LEAD ONLY (6010)
	S-5-N-1	3-31-17	1000										X	X
	S-5-S-1		1025										X	X
	S-5-E-1		1015/~~1025~~										X	X
	S-5-W-1		1030										X	X
	S-5-N-2	3-31-17	1005										X	X
	S-5-S-2		1020										X	X
	S-5-E-2		1010										X	X
	S-5-W-2		1035										X	X

Hold

Notes:

S-5-N-2
S-5-S-2
S-5-E-2
S-5-W-2
} Hold

SAMPLE RECEIPT
☑ Intact ☑ Cold
☐ On Ice ☐ Ambient

RELINQUISHED BY:	RECEIVED BY:
3/31/17 1030 DATE/TIME	3/31/17 1630 DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 287575 Date Received 3.31.17 Number of coolers 0
Client Stantec Project

Date Opened 3.31.17 By (print) DC (sign)
Date Logged in 3.31.17 By (print) DC (sign)
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) 2.5

☐ Temperature blank(s) included? ☐ Thermometer# ☒ IR Gun# A

☐ 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

Curtis & Tompkins, Ltd.

Detections Summary for 287575

Results for any subcontracted analyses are not included in this summary.

Client : Stantec
Project : STANDARD
Location : City Venture W.Grand/Filbert

Client Sample ID : S-5-N-1 Laboratory Sample ID : 287575-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	26		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : S-5-S-1 Laboratory Sample ID : 287575-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	30		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : S-5-E-1 Laboratory Sample ID : 287575-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	17		0.98	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : S-5-W-1 Laboratory Sample ID : 287575-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Lead	30		1.0	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Curtis & Tompkins, Ltd.

Lead

Lab #:	287575	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	EPA 3050B
Project#:	STANDARD	Analysis:	EPA 6010B
Analyte:	Lead	Batch#:	246334
Matrix:	Soil	Sampled:	03/31/17
Units:	mg/Kg	Received:	03/31/17
Basis:	as received	Prepared:	04/05/17
Diln Fac:	1.000	Analyzed:	04/05/17

Field ID	Type	Lab ID	Result	RL
S-5-N-1	SAMPLE	287575-001	26	1.0
S-5-S-1	SAMPLE	287575-002	30	1.0
S-5-E-1	SAMPLE	287575-003	17	0.98
S-5-W-1	SAMPLE	287575-004	30	1.0
	BLANK	QC880192	ND	1.0

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Lead

Lab #:	287575	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	EPA 3050B
Project#:	STANDARD	Analysis:	EPA 6010B
Analyte:	Lead	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	246334
MSS Lab ID:	287630-007	Sampled:	04/03/17
Matrix:	Soil	Received:	04/03/17
Units:	mg/Kg	Prepared:	04/05/17
Basis:	as received		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Analyzed
BS	QC880193		49.50	51.48	104	80-120			04/05/17
BSD	QC880194		50.51	51.15	101	80-120	3	20	04/05/17
MS	QC880195	4.013	46.73	44.35	86	50-131			04/06/17
MSD	QC880196		51.02	48.80	88	50-131	1	48	04/05/17

RPD= Relative Percent Difference


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Laboratory Job Number 287578
ANALYTICAL REPORT

Stantec	Project : STANDARD
3875 Atherton Rd.	Location : City Venture W.Grand/Filbert
Rocklin, CA 95765	Level : II

Sample ID	Lab ID
SV-30	287578-001
SV-20	287578-002
SV-22	287578-003
SV-31	287578-004
SV-26	287578-005
SV-16	287578-006

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Signature: _____ Date: 04/07/2017

Mike Dahlquist
Project Manager
mike.dahlquist@ctberk.com
(510) 204-2225 Ext 13101

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**287578**
Client:	**Stantec**
Location:	**City Venture W.Grand/Filbert**
Request Date:	**03/31/17**
Samples Received:	**03/31/17**

This data package contains sample and QC results for six air samples, requested for the above referenced project on 03/31/17. The samples were received cold and intact.

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

High response was observed for vinyl acetate in the ICV analyzed 03/11/17 11:05; affected data was qualified with "b". High responses were observed for a number of analytes in the CCV analyzed 04/05/17 07:41; affected data was qualified with "b". High responses were observed for hexachlorobutadiene and vinyl acetate in the CCV analyzed 04/04/17 06:39; affected data was qualified with "b". High responses were observed for 1,1-dichloroethene, naphthalene, and vinyl acetate in the CCV analyzed 04/03/17 07:37; affected data was qualified with "b". High recoveries were observed for a number of analytes in the BS/BSD for batch 246208; the associated RPDs were within limits, and these analytes were not detected at or above the RL in the associated samples. High recoveries were observed for a number of analytes in the BS/BSD for batch 246260; the associated RPDs were within limits, and these analytes were not detected at or above the RL in the associated sample. High recoveries were observed for a number of analytes in the BS/BSD for batch 246311; the associated RPDs were within limits, and these analytes were not detected at or above the RL in the associated samples. No other analytical problems were encountered.

Volatile Organics in Air GC (ASTM D1946-90):

No analytical problems were encountered.

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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 # 287578

Project No:
Project Name: City Ventures w Grand / Filbert
EDD Format: _____ Rpt Level: II III IV
Turnaround Time: ☐ RUSH _____ ☒ Standard

Sampler: Damon Munarch
Report To: Dan Schreiner
Company: Stantec
Telephone: 916-6216-7882
Email: dan.schreiner@stantec.com

Lab No.	Sample ID.	Sampling Information					TESTING REQUESTED				
		Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume (Gauge Reading)	TO-15 VOCs Full Scan	Fixed Gases	Helium		
1	SV-31	3-31-17	0907	323		5	X	X	X		
2	SV-20		0951	162		5	X	X	X		
3	SV-22		1022	280		5	X	X	X		
4	SV-31		1150	425		5	X	X	X		
5	SV-26		1218	135		5	X	X	X		
6	SV-16		1249	59		5	X	X	X		

Notes: Fixed gases: Oxygen, Carbon dioxide, nitrogen, methane and trace gas helium ASTM-1946.

RELINQUISHED BY:	RECEIVED BY:
3-31-17 1600 DATE/TIME	3/31/17 1600 DATE/TIME
DATE/TIME	DATE/TIME
DATE/TIME	DATE/TIME

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 287578 Date Received 3/31/17 Number of coolers 0
Client Stantec Project City Venture W. Grand / Filbert

Date Opened 3/31/17 By (print) EWA (sign) [signature]
Date Logged in [signature] By (print) [signature] (sign) [signature]
Date Labeled [signature] By (print) [signature] (sign) [signature]

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
The canister label for can ID 323 doesn't match with COC. The canister label states the sample ID is SV-30 while the COC states that it is SV-31.

Curtis & Tompkins, Ltd.

Detections Summary for 287578

Results for any subcontracted analyses are not included in this summary.

Client : Stantec
Project : STANDARD
Location : City Venture W.Grand/Filbert

Client Sample ID : SV-30 Laboratory Sample ID : 287578-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Freon 12	430		2.9	ppbv	As Recd	5.880	EPA TO-15	METHOD
Chloromethane	3.5		2.9	ppbv	As Recd	5.880	EPA TO-15	METHOD
Trichlorofluoromethane	82		2.9	ppbv	As Recd	5.880	EPA TO-15	METHOD
n-Hexane	3.3		2.9	ppbv	As Recd	5.880	EPA TO-15	METHOD
Cyclohexane	5.2		2.9	ppbv	As Recd	5.880	EPA TO-15	METHOD
Benzene	4.0		2.9	ppbv	As Recd	5.880	EPA TO-15	METHOD
Toluene	4.5		2.9	ppbv	As Recd	5.880	EPA TO-15	METHOD
m,p-Xylenes	4.8		2.9	ppbv	As Recd	5.880	EPA TO-15	METHOD
Oxygen	15,000		2,000	ppmv	As Recd	1.960	ASTM D1946-90	METHOD

Client Sample ID : SV-20 Laboratory Sample ID : 287578-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Freon 12	2,600		39	ppbv	As Recd	78.40	EPA TO-15	METHOD
Trichlorofluoromethane	110		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
n-Hexane	7.2		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Cyclohexane	3.1		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Benzene	2.5		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
n-Heptane	2.2		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Toluene	4.6		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Tetrachloroethene	2.1		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Ethylbenzene	2.5		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
m,p-Xylenes	4.8		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
o-Xylene	2.0		2.0	ppbv	As Recd	3.920	EPA TO-15	METHOD
Helium	400,000		2,000	ppmv	As Recd	1.960	ASTM D1946-90	METHOD
Oxygen	5,400		2,000	ppmv	As Recd	1.960	ASTM D1946-90	METHOD

Client Sample ID : SV-22 Laboratory Sample ID : 287578-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Freon 12	7,100		96	ppbv	As Recd	192.0	EPA TO-15	METHOD
Trichlorofluoromethane	220		2.9	ppbv	As Recd	5.760	EPA TO-15	METHOD
n-Hexane	11		2.9	ppbv	As Recd	5.760	EPA TO-15	METHOD
Chloroform	8.5		2.9	ppbv	As Recd	5.760	EPA TO-15	METHOD
Cyclohexane	3.0		2.9	ppbv	As Recd	5.760	EPA TO-15	METHOD
Oxygen	14,000		1,900	ppmv	As Recd	1.920	ASTM D1946-90	METHOD

Curtis & Tompkins, Ltd.

Client Sample ID : SV-31 Laboratory Sample ID : 287578-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Freon 12	110		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
Trichlorofluoromethane	45		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
Carbon Disulfide	2.2		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
Chloroform	4.3		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
Benzene	5.8		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
Toluene	7.7		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
Ethylbenzene	1.5		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
m,p-Xylenes	4.3		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
o-Xylene	1.3		1.3	ppbv	As Recd	2.600	EPA TO-15	METHOD
Oxygen	120,000		2,600	ppmv	As Recd	2.600	ASTM D1946-90	METHOD

Client Sample ID : SV-26 Laboratory Sample ID : 287578-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Freon 12	2,400		12	ppbv	As Recd	24.48	EPA TO-15	METHOD
Trichlorofluoromethane	260		12	ppbv	As Recd	24.48	EPA TO-15	METHOD
Oxygen	75,000		2,000	ppmv	As Recd	2.040	ASTM D1946-90	METHOD

Client Sample ID : SV-16 Laboratory Sample ID : 287578-006

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Acetone	5.1		4.4	ppbv	As Recd	2.190	EPA TO-15	METHOD
Carbon Disulfide	1.7		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
n-Hexane	1.7		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
Cyclohexane	1.5		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
Benzene	7.4		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
n-Heptane	1.4		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
4-Methyl-2-Pentanone	1.9		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
Toluene	8.2		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
Ethylbenzene	1.5		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
m,p-Xylenes	4.5		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
o-Xylene	1.3		1.1	ppbv	As Recd	2.190	EPA TO-15	METHOD
Carbon Dioxide	37,000		2,200	ppmv	As Recd	2.190	ASTM D1946-90	METHOD
Oxygen	110,000		2,200	ppmv	As Recd	2.190	ASTM D1946-90	METHOD

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-30	Diln Fac:	5.880
Lab ID:	287578-001	Batch#:	246311
Matrix:	Air	Sampled:	03/31/17
Units (V):	ppbv	Received:	03/31/17
Units (M):	ug/m3	Analyzed:	04/05/17

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	430	2.9	2,100	15
Freon 114	ND	2.9	ND	21
Chloromethane	3.5	2.9	7.2	6.1
Vinyl Chloride	ND	0.29	ND	0.75
1,3-Butadiene	ND	2.9	ND	6.5
Bromomethane	ND	2.9	ND	11
Chloroethane	ND	2.9	ND	7.8
Trichlorofluoromethane	82	2.9	460	17
Acrolein	ND	12	ND	27
1,1-Dichloroethene	ND	2.9	ND	12
Freon 113	ND	2.9	ND	23
Acetone	ND	12	ND	28
Carbon Disulfide	ND	2.9	ND	9.2
Isopropanol	ND	12	ND	29
Methylene Chloride	ND	2.9	ND	10
trans-1,2-Dichloroethene	ND	2.9	ND	12
MTBE	ND	2.9	ND	11
n-Hexane	3.3	2.9	12	10
1,1-Dichloroethane	ND	2.9	ND	12
Vinyl Acetate	ND	2.9	ND	10
cis-1,2-Dichloroethene	ND	2.9	ND	12
2-Butanone	ND	9.8	ND	29
Ethyl Acetate	ND	2.9	ND	11
Tetrahydrofuran	ND	2.9	ND	8.7
Chloroform	ND	2.9	ND	14
1,1,1-Trichloroethane	ND	2.9	ND	16
Cyclohexane	5.2	2.9	18	10
Carbon Tetrachloride	ND	2.9	ND	18
Benzene	4.0	2.9	13	9.4
1,2-Dichloroethane	ND	2.9	ND	12
n-Heptane	ND	2.9	ND	12
Trichloroethene	ND	2.9	ND	16
1,2-Dichloropropane	ND	2.9	ND	14
Bromodichloromethane	ND	2.9	ND	20
cis-1,3-Dichloropropene	ND	2.9	ND	13

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-30	Diln Fac:	5.880
Lab ID:	287578-001	Batch#:	246311
Matrix:	Air	Sampled:	03/31/17
Units (V):	ppbv	Received:	03/31/17
Units (M):	ug/m3	Analyzed:	04/05/17

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	2.9	ND	12
Toluene	4.5	2.9	17	11
trans-1,3-Dichloropropene	ND	2.9	ND	13
1,1,2-Trichloroethane	ND	2.9	ND	16
Tetrachloroethene	ND	2.9	ND	20
2-Hexanone	ND	2.9	ND	12
Dibromochloromethane	ND	2.9	ND	25
1,2-Dibromoethane	ND	2.9	ND	23
Chlorobenzene	ND	2.9	ND	14
Ethylbenzene	ND	2.9	ND	13
m,p-Xylenes	4.8	2.9	21	13
o-Xylene	ND	2.9	ND	13
Styrene	ND	2.9	ND	13
Bromoform	ND	2.9	ND	30
1,1,2,2-Tetrachloroethane	ND	2.9	ND	20
4-Ethyltoluene	ND	2.9	ND	14
1,3,5-Trimethylbenzene	ND	2.9	ND	14
1,2,4-Trimethylbenzene	ND	2.9	ND	14
1,3-Dichlorobenzene	ND	2.9	ND	18
1,4-Dichlorobenzene	ND	2.9	ND	18
Benzyl chloride	ND	2.9	ND	15
1,2-Dichlorobenzene	ND	2.9	ND	18
1,2,4-Trichlorobenzene	ND	2.9	ND	22
Hexachlorobutadiene	ND	2.9	ND	31
Naphthalene	ND	12	ND	62

Surrogate	%REC	Limits
Bromofluorobenzene	108	80-120

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-20	Units (M):	ug/m3
Lab ID:	287578-002	Sampled:	03/31/17
Matrix:	Air	Received:	03/31/17
Units (V):	ppbv		

Analyte	Result (V)	RL	Result (M)	RL	Diln Fac	Batch#	Analyzed
Freon 12	2,600	39	13,000	190	78.40	246311	04/05/17
Freon 114	ND	2.0	ND	14	3.920	246260	04/04/17
Chloromethane	ND	2.0	ND	4.0	3.920	246260	04/04/17
Vinyl Chloride	ND	0.20	ND	0.50	3.920	246260	04/04/17
1,3-Butadiene	ND	2.0	ND	4.3	3.920	246260	04/04/17
Bromomethane	ND	2.0	ND	7.6	3.920	246260	04/04/17
Chloroethane	ND	2.0	ND	5.2	3.920	246260	04/04/17
Trichlorofluoromethane	110	2.0	620	11	3.920	246260	04/04/17
Acrolein	ND	7.8	ND	18	3.920	246260	04/04/17
1,1-Dichloroethene	ND	2.0	ND	7.8	3.920	246260	04/04/17
Freon 113	ND	2.0	ND	15	3.920	246260	04/04/17
Acetone	ND	7.8	ND	19	3.920	246260	04/04/17
Carbon Disulfide	ND	2.0	ND	6.1	3.920	246260	04/04/17
Isopropanol	ND	7.8	ND	19	3.920	246260	04/04/17
Methylene Chloride	ND	2.0	ND	6.8	3.920	246260	04/04/17
trans-1,2-Dichloroethene	ND	2.0	ND	7.8	3.920	246260	04/04/17
MTBE	ND	2.0	ND	7.1	3.920	246260	04/04/17
n-Hexane	7.2	2.0	26	6.9	3.920	246260	04/04/17
1,1-Dichloroethane	ND	2.0	ND	7.9	3.920	246260	04/04/17
Vinyl Acetate	ND	2.0	ND	6.9	3.920	246260	04/04/17
cis-1,2-Dichloroethene	ND	2.0	ND	7.8	3.920	246260	04/04/17
2-Butanone	ND	6.5	ND	19	3.920	246260	04/04/17
Ethyl Acetate	ND	2.0	ND	7.1	3.920	246260	04/04/17
Tetrahydrofuran	ND	2.0	ND	5.8	3.920	246260	04/04/17
Chloroform	ND	2.0	ND	9.6	3.920	246260	04/04/17
1,1,1-Trichloroethane	ND	2.0	ND	11	3.920	246260	04/04/17
Cyclohexane	3.1	2.0	11	6.7	3.920	246260	04/04/17
Carbon Tetrachloride	ND	2.0	ND	12	3.920	246260	04/04/17
Benzene	2.5	2.0	7.9	6.3	3.920	246260	04/04/17
1,2-Dichloroethane	ND	2.0	ND	7.9	3.920	246260	04/04/17
n-Heptane	2.2	2.0	9.0	8.0	3.920	246260	04/04/17
Trichloroethene	ND	2.0	ND	11	3.920	246260	04/04/17
1,2-Dichloropropane	ND	2.0	ND	9.1	3.920	246260	04/04/17
Bromodichloromethane	ND	2.0	ND	13	3.920	246260	04/04/17
cis-1,3-Dichloropropene	ND	2.0	ND	8.9	3.920	246260	04/04/17
4-Methyl-2-Pentanone	ND	2.0	ND	8.0	3.920	246260	04/04/17

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-20	Units (M):	ug/m3
Lab ID:	287578-002	Sampled:	03/31/17
Matrix:	Air	Received:	03/31/17
Units (V):	ppbv		

Analyte	Result (V)	RL	Result (M)	RL	Diln Fac	Batch#	Analyzed
Toluene	4.6	2.0	18	7.4	3.920	246260	04/04/17
trans-1,3-Dichloropropene	ND	2.0	ND	8.9	3.920	246260	04/04/17
1,1,2-Trichloroethane	ND	2.0	ND	11	3.920	246260	04/04/17
Tetrachloroethene	2.1	2.0	14	13	3.920	246260	04/04/17
2-Hexanone	ND	2.0	ND	8.0	3.920	246260	04/04/17
Dibromochloromethane	ND	2.0	ND	17	3.920	246260	04/04/17
1,2-Dibromoethane	ND	2.0	ND	15	3.920	246260	04/04/17
Chlorobenzene	ND	2.0	ND	9.0	3.920	246260	04/04/17
Ethylbenzene	2.5	2.0	11	8.5	3.920	246260	04/04/17
m,p-Xylenes	4.8	2.0	21	8.5	3.920	246260	04/04/17
o-Xylene	2.0	2.0	8.6	8.5	3.920	246260	04/04/17
Styrene	ND	2.0	ND	8.3	3.920	246260	04/04/17
Bromoform	ND	2.0	ND	20	3.920	246260	04/04/17
1,1,2,2-Tetrachloroethane	ND	2.0	ND	13	3.920	246260	04/04/17
4-Ethyltoluene	ND	2.0	ND	9.6	3.920	246260	04/04/17
1,3,5-Trimethylbenzene	ND	2.0	ND	9.6	3.920	246260	04/04/17
1,2,4-Trimethylbenzene	ND	2.0	ND	9.6	3.920	246260	04/04/17
1,3-Dichlorobenzene	ND	2.0	ND	12	3.920	246260	04/04/17
1,4-Dichlorobenzene	ND	2.0	ND	12	3.920	246260	04/04/17
Benzyl chloride	ND	2.0	ND	10	3.920	246260	04/04/17
1,2-Dichlorobenzene	ND	2.0	ND	12	3.920	246260	04/04/17
1,2,4-Trichlorobenzene	ND	2.0	ND	15	3.920	246260	04/04/17
Hexachlorobutadiene	ND	2.0	ND	21	3.920	246260	04/04/17
Naphthalene	ND	7.8	ND	41	3.920	246260	04/04/17

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Bromofluorobenzene	114	80-120	3.920	246260	04/04/17

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-22	Units (M):	ug/m3
Lab ID:	287578-003	Sampled:	03/31/17
Matrix:	Air	Received:	03/31/17
Units (V):	ppbv	Analyzed:	04/04/17

Analyte	Result (V)	RL	Result (M)	RL	Diln Fac	Batch#
Freon 12	7,100	96	35,000	470	192.0	246260
Freon 114	ND	2.9	ND	20	5.760	246208
Chloromethane	ND	2.9	ND	5.9	5.760	246208
Vinyl Chloride	ND	0.29	ND	0.74	5.760	246208
1,3-Butadiene	ND	2.9	ND	6.4	5.760	246208
Bromomethane	ND	2.9	ND	11	5.760	246208
Chloroethane	ND	2.9	ND	7.6	5.760	246208
Trichlorofluoromethane	220	2.9	1,200	16	5.760	246208
Acrolein	ND	12	ND	26	5.760	246208
1,1-Dichloroethene	ND	2.9	ND	11	5.760	246208
Freon 113	ND	2.9	ND	22	5.760	246208
Acetone	ND	12	ND	27	5.760	246208
Carbon Disulfide	ND	2.9	ND	9.0	5.760	246208
Isopropanol	ND	12	ND	28	5.760	246208
Methylene Chloride	ND	2.9	ND	10	5.760	246208
trans-1,2-Dichloroethene	ND	2.9	ND	11	5.760	246208
MTBE	ND	2.9	ND	10	5.760	246208
n-Hexane	11	2.9	40	10	5.760	246208
1,1-Dichloroethane	ND	2.9	ND	12	5.760	246208
Vinyl Acetate	ND	2.9	ND	10	5.760	246208
cis-1,2-Dichloroethene	ND	2.9	ND	11	5.760	246208
2-Butanone	ND	9.6	ND	28	5.760	246208
Ethyl Acetate	ND	2.9	ND	10	5.760	246208
Tetrahydrofuran	ND	2.9	ND	8.5	5.760	246208
Chloroform	8.5	2.9	42	14	5.760	246208
1,1,1-Trichloroethane	ND	2.9	ND	16	5.760	246208
Cyclohexane	3.0	2.9	10	9.9	5.760	246208
Carbon Tetrachloride	ND	2.9	ND	18	5.760	246208
Benzene	ND	2.9	ND	9.2	5.760	246208
1,2-Dichloroethane	ND	2.9	ND	12	5.760	246208
n-Heptane	ND	2.9	ND	12	5.760	246208
Trichloroethene	ND	2.9	ND	15	5.760	246208
1,2-Dichloropropane	ND	2.9	ND	13	5.760	246208
Bromodichloromethane	ND	2.9	ND	19	5.760	246208
cis-1,3-Dichloropropene	ND	2.9	ND	13	5.760	246208
4-Methyl-2-Pentanone	ND	2.9	ND	12	5.760	246208

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-22	Units (M):	ug/m3
Lab ID:	287578-003	Sampled:	03/31/17
Matrix:	Air	Received:	03/31/17
Units (V):	ppbv	Analyzed:	04/04/17

Analyte	Result (V)	RL	Result (M)	RL	Diln Fac	Batch#
Toluene	ND	2.9	ND	11	5.760	246208
trans-1,3-Dichloropropene	ND	2.9	ND	13	5.760	246208
1,1,2-Trichloroethane	ND	2.9	ND	16	5.760	246208
Tetrachloroethene	ND	2.9	ND	20	5.760	246208
2-Hexanone	ND	2.9	ND	12	5.760	246208
Dibromochloromethane	ND	2.9	ND	25	5.760	246208
1,2-Dibromoethane	ND	2.9	ND	22	5.760	246208
Chlorobenzene	ND	2.9	ND	13	5.760	246208
Ethylbenzene	ND	2.9	ND	13	5.760	246208
m,p-Xylenes	ND	2.9	ND	13	5.760	246208
o-Xylene	ND	2.9	ND	13	5.760	246208
Styrene	ND	2.9	ND	12	5.760	246208
Bromoform	ND	2.9	ND	30	5.760	246208
1,1,2,2-Tetrachloroethane	ND	2.9	ND	20	5.760	246208
4-Ethyltoluene	ND	2.9	ND	14	5.760	246208
1,3,5-Trimethylbenzene	ND	2.9	ND	14	5.760	246208
1,2,4-Trimethylbenzene	ND	2.9	ND	14	5.760	246208
1,3-Dichlorobenzene	ND	2.9	ND	17	5.760	246208
1,4-Dichlorobenzene	ND	2.9	ND	17	5.760	246208
Benzyl chloride	ND	2.9	ND	15	5.760	246208
1,2-Dichlorobenzene	ND	2.9	ND	17	5.760	246208
1,2,4-Trichlorobenzene	ND	2.9	ND	21	5.760	246208
Hexachlorobutadiene	ND	2.9	ND	31	5.760	246208
Naphthalene	ND	12	ND	60	5.760	246208

Surrogate	%REC	Limits	Diln Fac	Batch#
Bromofluorobenzene	99	80-120	5.760	246208

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-31	Diln Fac:	2.600
Lab ID:	287578-004	Batch#:	246311
Matrix:	Air	Sampled:	03/31/17
Units (V):	ppbv	Received:	03/31/17
Units (M):	ug/m3	Analyzed:	04/05/17

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	110	1.3	530	6.4
Freon 114	ND	1.3	ND	9.1
Chloromethane	ND	1.3	ND	2.7
Vinyl Chloride	ND	0.13	ND	0.33
1,3-Butadiene	ND	1.3	ND	2.9
Bromomethane	ND	1.3	ND	5.0
Chloroethane	ND	1.3	ND	3.4
Trichlorofluoromethane	45	1.3	250	7.3
Acrolein	ND	5.2	ND	12
1,1-Dichloroethene	ND	1.3	ND	5.2
Freon 113	ND	1.3	ND	10
Acetone	ND	5.2	ND	12
Carbon Disulfide	2.2	1.3	7.0	4.0
Isopropanol	ND	5.2	ND	13
Methylene Chloride	ND	1.3	ND	4.5
trans-1,2-Dichloroethene	ND	1.3	ND	5.2
MTBE	ND	1.3	ND	4.7
n-Hexane	ND	1.3	ND	4.6
1,1-Dichloroethane	ND	1.3	ND	5.3
Vinyl Acetate	ND	1.3	ND	4.6
cis-1,2-Dichloroethene	ND	1.3	ND	5.2
2-Butanone	ND	4.3	ND	13
Ethyl Acetate	ND	1.3	ND	4.7
Tetrahydrofuran	ND	1.3	ND	3.8
Chloroform	4.3	1.3	21	6.3
1,1,1-Trichloroethane	ND	1.3	ND	7.1
Cyclohexane	ND	1.3	ND	4.5
Carbon Tetrachloride	ND	1.3	ND	8.2
Benzene	5.8	1.3	18	4.2
1,2-Dichloroethane	ND	1.3	ND	5.3
n-Heptane	ND	1.3	ND	5.3
Trichloroethene	ND	1.3	ND	7.0
1,2-Dichloropropane	ND	1.3	ND	6.0
Bromodichloromethane	ND	1.3	ND	8.7
cis-1,3-Dichloropropene	ND	1.3	ND	5.9

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-31	Diln Fac:	2.600
Lab ID:	287578-004	Batch#:	246311
Matrix:	Air	Sampled:	03/31/17
Units (V):	ppbv	Received:	03/31/17
Units (M):	ug/m3	Analyzed:	04/05/17

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	1.3	ND	5.3
Toluene	7.7	1.3	29	4.9
trans-1,3-Dichloropropene	ND	1.3	ND	5.9
1,1,2-Trichloroethane	ND	1.3	ND	7.1
Tetrachloroethene	ND	1.3	ND	8.8
2-Hexanone	ND	1.3	ND	5.3
Dibromochloromethane	ND	1.3	ND	11
1,2-Dibromoethane	ND	1.3	ND	10
Chlorobenzene	ND	1.3	ND	6.0
Ethylbenzene	1.5	1.3	6.6	5.6
m,p-Xylenes	4.3	1.3	18	5.6
o-Xylene	1.3	1.3	5.9	5.6
Styrene	ND	1.3	ND	5.5
Bromoform	ND	1.3	ND	13
1,1,2,2-Tetrachloroethane	ND	1.3	ND	8.9
4-Ethyltoluene	ND	1.3	ND	6.4
1,3,5-Trimethylbenzene	ND	1.3	ND	6.4
1,2,4-Trimethylbenzene	ND	1.3	ND	6.4
1,3-Dichlorobenzene	ND	1.3	ND	7.8
1,4-Dichlorobenzene	ND	1.3	ND	7.8
Benzyl chloride	ND	1.3	ND	6.7
1,2-Dichlorobenzene	ND	1.3	ND	7.8
1,2,4-Trichlorobenzene	ND	1.3	ND	9.6
Hexachlorobutadiene	ND	1.3	ND	14
Naphthalene	ND	5.2	ND	27

Surrogate	%REC	Limits
Bromofluorobenzene	100	80-120

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-26	Diln Fac:	24.48
Lab ID:	287578-005	Batch#:	246208
Matrix:	Air	Sampled:	03/31/17
Units (V):	ppbv	Received:	03/31/17
Units (M):	ug/m3	Analyzed:	04/03/17

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	2,400	12	12,000	61
Freon 114	ND	12	ND	86
Chloromethane	ND	12	ND	25
Vinyl Chloride	ND	1.2	ND	3.1
1,3-Butadiene	ND	12	ND	27
Bromomethane	ND	12	ND	48
Chloroethane	ND	12	ND	32
Trichlorofluoromethane	260	12	1,500	69
Acrolein	ND	49	ND	110
1,1-Dichloroethene	ND	12	ND	49
Freon 113	ND	12	ND	94
Acetone	ND	49	ND	120
Carbon Disulfide	ND	12	ND	38
Isopropanol	ND	49	ND	120
Methylene Chloride	ND	12	ND	43
trans-1,2-Dichloroethene	ND	12	ND	49
MTBE	ND	12	ND	44
n-Hexane	ND	12	ND	43
1,1-Dichloroethane	ND	12	ND	50
Vinyl Acetate	ND	12	ND	43
cis-1,2-Dichloroethene	ND	12	ND	49
2-Butanone	ND	41	ND	120
Ethyl Acetate	ND	12	ND	44
Tetrahydrofuran	ND	12	ND	36
Chloroform	ND	12	ND	60
1,1,1-Trichloroethane	ND	12	ND	67
Cyclohexane	ND	12	ND	42
Carbon Tetrachloride	ND	12	ND	77
Benzene	ND	12	ND	39
1,2-Dichloroethane	ND	12	ND	50
n-Heptane	ND	12	ND	50
Trichloroethene	ND	12	ND	66
1,2-Dichloropropane	ND	12	ND	57
Bromodichloromethane	ND	12	ND	82
cis-1,3-Dichloropropene	ND	12	ND	56

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-26	Diln Fac:	24.48
Lab ID:	287578-005	Batch#:	246208
Matrix:	Air	Sampled:	03/31/17
Units (V):	ppbv	Received:	03/31/17
Units (M):	ug/m3	Analyzed:	04/03/17

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	ND	12	ND	50
Toluene	ND	12	ND	46
trans-1,3-Dichloropropene	ND	12	ND	56
1,1,2-Trichloroethane	ND	12	ND	67
Tetrachloroethene	ND	12	ND	83
2-Hexanone	ND	12	ND	50
Dibromochloromethane	ND	12	ND	100
1,2-Dibromoethane	ND	12	ND	94
Chlorobenzene	ND	12	ND	56
Ethylbenzene	ND	12	ND	53
m,p-Xylenes	ND	12	ND	53
o-Xylene	ND	12	ND	53
Styrene	ND	12	ND	52
Bromoform	ND	12	ND	130
1,1,2,2-Tetrachloroethane	ND	12	ND	84
4-Ethyltoluene	ND	12	ND	60
1,3,5-Trimethylbenzene	ND	12	ND	60
1,2,4-Trimethylbenzene	ND	12	ND	60
1,3-Dichlorobenzene	ND	12	ND	74
1,4-Dichlorobenzene	ND	12	ND	74
Benzyl chloride	ND	12	ND	63
1,2-Dichlorobenzene	ND	12	ND	74
1,2,4-Trichlorobenzene	ND	12	ND	91
Hexachlorobutadiene	ND	12	ND	130
Naphthalene	ND	49	ND	260

Surrogate	%REC	Limits
Bromofluorobenzene	94	80-120

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-16	Diln Fac:	2.190
Lab ID:	287578-006	Batch#:	246311
Matrix:	Air	Sampled:	03/31/17
Units (V):	ppbv	Received:	03/31/17
Units (M):	ug/m3	Analyzed:	04/05/17

Analyte	Result (V)	RL	Result (M)	RL
Freon 12	ND	1.1	ND	5.4
Freon 114	ND	1.1	ND	7.7
Chloromethane	ND	1.1	ND	2.3
Vinyl Chloride	ND	0.11	ND	0.28
1,3-Butadiene	ND	1.1	ND	2.4
Bromomethane	ND	1.1	ND	4.3
Chloroethane	ND	1.1	ND	2.9
Trichlorofluoromethane	ND	1.1	ND	6.2
Acrolein	ND	4.4	ND	10
1,1-Dichloroethene	ND	1.1	ND	4.3
Freon 113	ND	1.1	ND	8.4
Acetone	5.1	4.4	12	10
Carbon Disulfide	1.7	1.1	5.4	3.4
Isopropanol	ND	4.4	ND	11
Methylene Chloride	ND	1.1	ND	3.8
trans-1,2-Dichloroethene	ND	1.1	ND	4.3
MTBE	ND	1.1	ND	3.9
n-Hexane	1.7	1.1	6.0	3.9
1,1-Dichloroethane	ND	1.1	ND	4.4
Vinyl Acetate	ND	1.1	ND	3.9
cis-1,2-Dichloroethene	ND	1.1	ND	4.3
2-Butanone	ND	3.7	ND	11
Ethyl Acetate	ND	1.1	ND	3.9
Tetrahydrofuran	ND	1.1	ND	3.2
Chloroform	ND	1.1	ND	5.3
1,1,1-Trichloroethane	ND	1.1	ND	6.0
Cyclohexane	1.5	1.1	5.3	3.8
Carbon Tetrachloride	ND	1.1	ND	6.9
Benzene	7.4	1.1	24	3.5
1,2-Dichloroethane	ND	1.1	ND	4.4
n-Heptane	1.4	1.1	5.7	4.5
Trichloroethene	ND	1.1	ND	5.9
1,2-Dichloropropane	ND	1.1	ND	5.1
Bromodichloromethane	ND	1.1	ND	7.3
cis-1,3-Dichloropropene	ND	1.1	ND	5.0

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Field ID:	SV-16	Diln Fac:	2.190
Lab ID:	287578-006	Batch#:	246311
Matrix:	Air	Sampled:	03/31/17
Units (V):	ppbv	Received:	03/31/17
Units (M):	ug/m3	Analyzed:	04/05/17

Analyte	Result (V)	RL	Result (M)	RL
4-Methyl-2-Pentanone	1.9	1.1	7.8	4.5
Toluene	8.2	1.1	31	4.1
trans-1,3-Dichloropropene	ND	1.1	ND	5.0
1,1,2-Trichloroethane	ND	1.1	ND	6.0
Tetrachloroethene	ND	1.1	ND	7.4
2-Hexanone	ND	1.1	ND	4.5
Dibromochloromethane	ND	1.1	ND	9.3
1,2-Dibromoethane	ND	1.1	ND	8.4
Chlorobenzene	ND	1.1	ND	5.0
Ethylbenzene	1.5	1.1	6.6	4.8
m,p-Xylenes	4.5	1.1	20	4.8
o-Xylene	1.3	1.1	5.6	4.8
Styrene	ND	1.1	ND	4.7
Bromoform	ND	1.1	ND	11
1,1,2,2-Tetrachloroethane	ND	1.1	ND	7.5
4-Ethyltoluene	ND	1.1	ND	5.4
1,3,5-Trimethylbenzene	ND	1.1	ND	5.4
1,2,4-Trimethylbenzene	ND	1.1	ND	5.4
1,3-Dichlorobenzene	ND	1.1	ND	6.6
1,4-Dichlorobenzene	ND	1.1	ND	6.6
Benzyl chloride	ND	1.1	ND	5.7
1,2-Dichlorobenzene	ND	1.1	ND	6.6
1,2,4-Trichlorobenzene	ND	1.1	ND	8.1
Hexachlorobutadiene	ND	1.1	ND	12
Naphthalene	ND	4.4	ND	23

Surrogate	%REC	Limits
Bromofluorobenzene	100	80-120

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246208
Units (V):	ppbv	Analyzed:	04/03/17
Diln Fac:	1.000		

Type: BS Lab ID: QC879678

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	8.741	87	70-130
Freon 114	10.00	9.370	94	70-130
Chloromethane	10.00	7.613	76	70-130
Vinyl Chloride	10.00	8.789	88	70-130
1,3-Butadiene	10.00	8.822	88	70-130
Bromomethane	10.00	7.592	76	70-130
Chloroethane	10.00	8.720	87	70-130
Trichlorofluoromethane	10.00	9.934	99	70-130
Acrolein	10.00	12.08	121	70-130
1,1-Dichloroethene	10.00	13.12 b	131 *	70-130
Freon 113	10.00	10.93	109	70-130
Acetone	10.00	8.849	88	70-130
Carbon Disulfide	10.00	10.08	101	70-130
Isopropanol	10.00	8.877	89	70-130
Methylene Chloride	10.00	9.608	96	70-130
trans-1,2-Dichloroethene	10.00	11.41	114	70-130
MTBE	10.00	10.55	105	70-130
n-Hexane	10.00	10.98	110	70-130
1,1-Dichloroethane	10.00	11.15	112	70-130
Vinyl Acetate	10.00	16.15 b	161 *	70-130
cis-1,2-Dichloroethene	10.00	10.60	106	70-130
2-Butanone	10.00	8.825	88	70-130
Ethyl Acetate	10.00	7.891	79	70-130
Tetrahydrofuran	10.00	11.45	114	70-130
Chloroform	10.00	10.62	106	70-130
1,1,1-Trichloroethane	10.00	10.98	110	70-130
Cyclohexane	10.00	10.62	106	70-130
Carbon Tetrachloride	10.00	9.373	94	70-130
Benzene	10.00	10.07	101	70-130
1,2-Dichloroethane	10.00	10.95	109	70-130
n-Heptane	10.00	11.87	119	70-130
Trichloroethene	10.00	10.33	103	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246208
Units (V):	ppbv	Analyzed:	04/03/17
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
1,2-Dichloropropane	10.00	10.99	110	70-130
Bromodichloromethane	10.00	10.47	105	70-130
cis-1,3-Dichloropropene	10.00	10.13	101	70-130
4-Methyl-2-Pentanone	10.00	12.08	121	70-130
Toluene	10.00	11.72	117	70-130
trans-1,3-Dichloropropene	10.00	10.93	109	70-130
1,1,2-Trichloroethane	10.00	11.89	119	70-130
Tetrachloroethene	10.00	12.39	124	70-130
2-Hexanone	10.00	12.93	129	70-130
Dibromochloromethane	10.00	10.73	107	70-130
1,2-Dibromoethane	10.00	11.13	111	70-130
Chlorobenzene	10.00	11.95	120	70-130
Ethylbenzene	10.00	11.57	116	70-130
m,p-Xylenes	20.00	23.66	118	70-130
o-Xylene	10.00	11.61	116	70-130
Styrene	10.00	11.38	114	70-130
Bromoform	10.00	10.35	104	70-130
1,1,2,2-Tetrachloroethane	10.00	11.74	117	70-130
4-Ethyltoluene	10.00	11.66	117	70-130
1,3,5-Trimethylbenzene	10.00	11.98	120	70-130
1,2,4-Trimethylbenzene	10.00	12.29	123	70-130
1,3-Dichlorobenzene	10.00	11.48	115	70-130
1,4-Dichlorobenzene	10.00	11.49	115	70-130
Benzyl chloride	10.00	11.52	115	70-130
1,2-Dichlorobenzene	10.00	11.77	118	70-130
1,2,4-Trichlorobenzene	10.00	12.84	128	70-130
Hexachlorobutadiene	10.00	12.91	129	70-130
Naphthalene	10.00	13.35 b	134 *	70-130

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

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246208
Units (V):	ppbv	Analyzed:	04/03/17
Diln Fac:	1.000		

Type: BSD Lab ID: QC879679

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	8.538	85	70-130	2	25
Freon 114	10.00	9.342	93	70-130	0	25
Chloromethane	10.00	7.195	72	70-130	6	25
Vinyl Chloride	10.00	8.598	86	70-130	2	25
1,3-Butadiene	10.00	8.933	89	70-130	1	25
Bromomethane	10.00	7.686	77	70-130	1	25
Chloroethane	10.00	8.556	86	70-130	2	25
Trichlorofluoromethane	10.00	9.758	98	70-130	2	25
Acrolein	10.00	11.83	118	70-130	2	25
1,1-Dichloroethene	10.00	13.00 b	130	70-130	1	25
Freon 113	10.00	10.56	106	70-130	3	25
Acetone	10.00	9.010	90	70-130	2	25
Carbon Disulfide	10.00	10.11	101	70-130	0	25
Isopropanol	10.00	9.173	92	70-130	3	25
Methylene Chloride	10.00	9.624	96	70-130	0	25
trans-1,2-Dichloroethene	10.00	11.46	115	70-130	0	25
MTBE	10.00	10.45	104	70-130	1	25
n-Hexane	10.00	11.00	110	70-130	0	25
1,1-Dichloroethane	10.00	11.25	112	70-130	1	25
Vinyl Acetate	10.00	16.10 b	161 *	70-130	0	25
cis-1,2-Dichloroethene	10.00	10.72	107	70-130	1	25
2-Butanone	10.00	8.893	89	70-130	1	25
Ethyl Acetate	10.00	8.010	80	70-130	1	25
Tetrahydrofuran	10.00	11.48	115	70-130	0	25
Chloroform	10.00	10.81	108	70-130	2	25
1,1,1-Trichloroethane	10.00	10.92	109	70-130	1	25
Cyclohexane	10.00	10.53	105	70-130	1	25
Carbon Tetrachloride	10.00	9.189	92	70-130	2	25
Benzene	10.00	10.09	101	70-130	0	25
1,2-Dichloroethane	10.00	10.76	108	70-130	2	25
n-Heptane	10.00	11.73	117	70-130	1	25
Trichloroethene	10.00	10.62	106	70-130	3	25

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246208
Units (V):	ppbv	Analyzed:	04/03/17
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
1,2-Dichloropropane	10.00	10.58	106	70-130	4	25
Bromodichloromethane	10.00	10.48	105	70-130	0	25
cis-1,3-Dichloropropene	10.00	10.29	103	70-130	2	25
4-Methyl-2-Pentanone	10.00	11.70	117	70-130	3	25
Toluene	10.00	11.97	120	70-130	2	25
trans-1,3-Dichloropropene	10.00	11.15	112	70-130	2	25
1,1,2-Trichloroethane	10.00	12.21	122	70-130	3	25
Tetrachloroethene	10.00	12.68	127	70-130	2	25
2-Hexanone	10.00	13.05	130	70-130	1	25
Dibromochloromethane	10.00	10.80	108	70-130	1	25
1,2-Dibromoethane	10.00	11.47	115	70-130	3	25
Chlorobenzene	10.00	12.17	122	70-130	2	25
Ethylbenzene	10.00	11.88	119	70-130	3	25
m,p-Xylenes	20.00	23.92	120	70-130	1	25
o-Xylene	10.00	11.99	120	70-130	3	25
Styrene	10.00	11.70	117	70-130	3	25
Bromoform	10.00	10.60	106	70-130	2	25
1,1,2,2-Tetrachloroethane	10.00	12.30	123	70-130	5	25
4-Ethyltoluene	10.00	12.45	124	70-130	7	25
1,3,5-Trimethylbenzene	10.00	12.19	122	70-130	2	25
1,2,4-Trimethylbenzene	10.00	12.67	127	70-130	3	25
1,3-Dichlorobenzene	10.00	11.69	117	70-130	2	25
1,4-Dichlorobenzene	10.00	11.68	117	70-130	2	25
Benzyl chloride	10.00	12.14	121	70-130	5	25
1,2-Dichlorobenzene	10.00	12.21	122	70-130	4	25
1,2,4-Trichlorobenzene	10.00	13.18	132 *	70-130	3	25
Hexachlorobutadiene	10.00	13.50	135 *	70-130	5	25
Naphthalene	10.00	13.69 b	137 *	70-130	2	25

Surrogate	%REC	Limits
Bromofluorobenzene	103	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC879680	Diln Fac:	1.000
Matrix:	Air	Batch#:	246208
Units (V):	ppbv	Analyzed:	04/03/17

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	0.050	ND	0.13
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	1.7	ND	4.9
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

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC879680	Diln Fac:	1.000
Matrix:	Air	Batch#:	246208
Units (V):	ppbv	Analyzed:	04/03/17

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	94	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246260
Units (V):	ppbv	Analyzed:	04/04/17
Diln Fac:	1.000		

Type: BS Lab ID: QC879897

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	8.559	86	70-130
Freon 114	10.00	9.215	92	70-130
Chloromethane	10.00	7.155	72	70-130
Vinyl Chloride	10.00	8.387	84	70-130
1,3-Butadiene	10.00	8.375	84	70-130
Bromomethane	10.00	7.070	71	70-130
Chloroethane	10.00	8.177	82	70-130
Trichlorofluoromethane	10.00	9.631	96	70-130
Acrolein	10.00	12.11	121	70-130
1,1-Dichloroethene	10.00	12.60	126	70-130
Freon 113	10.00	10.69	107	70-130
Acetone	10.00	8.741	87	70-130
Carbon Disulfide	10.00	9.683	97	70-130
Isopropanol	10.00	8.646	86	70-130
Methylene Chloride	10.00	9.317	93	70-130
trans-1,2-Dichloroethene	10.00	11.22	112	70-130
MTBE	10.00	10.76	108	70-130
n-Hexane	10.00	10.75	107	70-130
1,1-Dichloroethane	10.00	10.86	109	70-130
Vinyl Acetate	10.00	15.74 b	157 *	70-130
cis-1,2-Dichloroethene	10.00	10.64	106	70-130
2-Butanone	10.00	8.707	87	70-130
Ethyl Acetate	10.00	7.676	77	70-130
Tetrahydrofuran	10.00	12.25	123	70-130
Chloroform	10.00	10.54	105	70-130
1,1,1-Trichloroethane	10.00	11.52	115	70-130
Cyclohexane	10.00	11.17	112	70-130
Carbon Tetrachloride	10.00	9.663	97	70-130
Benzene	10.00	10.66	107	70-130
1,2-Dichloroethane	10.00	11.22	112	70-130
n-Heptane	10.00	12.18	122	70-130
Trichloroethene	10.00	11.06	111	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246260
Units (V):	ppbv	Analyzed:	04/04/17
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
1,2-Dichloropropane	10.00	11.52	115	70-130
Bromodichloromethane	10.00	11.27	113	70-130
cis-1,3-Dichloropropene	10.00	10.86	109	70-130
4-Methyl-2-Pentanone	10.00	12.17	122	70-130
Toluene	10.00	11.82	118	70-130
trans-1,3-Dichloropropene	10.00	11.19	112	70-130
1,1,2-Trichloroethane	10.00	12.03	120	70-130
Tetrachloroethene	10.00	12.27	123	70-130
2-Hexanone	10.00	12.77	128	70-130
Dibromochloromethane	10.00	10.58	106	70-130
1,2-Dibromoethane	10.00	11.34	113	70-130
Chlorobenzene	10.00	12.11	121	70-130
Ethylbenzene	10.00	12.02	120	70-130
m,p-Xylenes	20.00	24.19	121	70-130
o-Xylene	10.00	12.06	121	70-130
Styrene	10.00	11.60	116	70-130
Bromoform	10.00	10.34	103	70-130
1,1,2,2-Tetrachloroethane	10.00	12.06	121	70-130
4-Ethyltoluene	10.00	12.33	123	70-130
1,3,5-Trimethylbenzene	10.00	12.45	125	70-130
1,2,4-Trimethylbenzene	10.00	12.77	128	70-130
1,3-Dichlorobenzene	10.00	11.50	115	70-130
1,4-Dichlorobenzene	10.00	11.72	117	70-130
Benzyl chloride	10.00	11.89	119	70-130
1,2-Dichlorobenzene	10.00	11.88	119	70-130
1,2,4-Trichlorobenzene	10.00	12.43	124	70-130
Hexachlorobutadiene	10.00	13.14 b	131 *	70-130
Naphthalene	10.00	13.04	130	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	102	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246260
Units (V):	ppbv	Analyzed:	04/04/17
Diln Fac:	1.000		

Type: BSD Lab ID: QC879898

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	8.766	88	70-130	2	25
Freon 114	10.00	9.456	95	70-130	3	25
Chloromethane	10.00	7.647	76	70-130	7	25
Vinyl Chloride	10.00	8.536	85	70-130	2	25
1,3-Butadiene	10.00	8.699	87	70-130	4	25
Bromomethane	10.00	7.079	71	70-130	0	25
Chloroethane	10.00	8.545	85	70-130	4	25
Trichlorofluoromethane	10.00	9.740	97	70-130	1	25
Acrolein	10.00	12.82	128	70-130	6	25
1,1-Dichloroethene	10.00	12.69	127	70-130	1	25
Freon 113	10.00	10.61	106	70-130	1	25
Acetone	10.00	8.897	89	70-130	2	25
Carbon Disulfide	10.00	9.934	99	70-130	3	25
Isopropanol	10.00	8.864	89	70-130	2	25
Methylene Chloride	10.00	9.419	94	70-130	1	25
trans-1,2-Dichloroethene	10.00	11.36	114	70-130	1	25
MTBE	10.00	10.56	106	70-130	2	25
n-Hexane	10.00	10.77	108	70-130	0	25
1,1-Dichloroethane	10.00	11.00	110	70-130	1	25
Vinyl Acetate	10.00	15.96 b	160 *	70-130	1	25
cis-1,2-Dichloroethene	10.00	10.58	106	70-130	1	25
2-Butanone	10.00	8.912	89	70-130	2	25
Ethyl Acetate	10.00	7.784	78	70-130	1	25
Tetrahydrofuran	10.00	11.70	117	70-130	5	25
Chloroform	10.00	10.43	104	70-130	1	25
1,1,1-Trichloroethane	10.00	11.21	112	70-130	3	25
Cyclohexane	10.00	10.83	108	70-130	3	25
Carbon Tetrachloride	10.00	9.227	92	70-130	5	25
Benzene	10.00	10.24	102	70-130	4	25
1,2-Dichloroethane	10.00	10.73	107	70-130	4	25
n-Heptane	10.00	11.77	118	70-130	3	25
Trichloroethene	10.00	10.51	105	70-130	5	25

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246260
Units (V):	ppbv	Analyzed:	04/04/17
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
1,2-Dichloropropane	10.00	11.12	111	70-130	4	25
Bromodichloromethane	10.00	10.92	109	70-130	3	25
cis-1,3-Dichloropropene	10.00	10.59	106	70-130	2	25
4-Methyl-2-Pentanone	10.00	11.96	120	70-130	2	25
Toluene	10.00	12.23	122	70-130	3	25
trans-1,3-Dichloropropene	10.00	11.07	111	70-130	1	25
1,1,2-Trichloroethane	10.00	12.63	126	70-130	5	25
Tetrachloroethene	10.00	12.61	126	70-130	3	25
2-Hexanone	10.00	13.25	132 *	70-130	4	25
Dibromochloromethane	10.00	11.37	114	70-130	7	25
1,2-Dibromoethane	10.00	12.10	121	70-130	6	25
Chlorobenzene	10.00	12.57	126	70-130	4	25
Ethylbenzene	10.00	12.22	122	70-130	2	25
m,p-Xylenes	20.00	24.35	122	70-130	1	25
o-Xylene	10.00	12.56	126	70-130	4	25
Styrene	10.00	12.09	121	70-130	4	25
Bromoform	10.00	10.71	107	70-130	4	25
1,1,2,2-Tetrachloroethane	10.00	12.35	123	70-130	2	25
4-Ethyltoluene	10.00	12.64	126	70-130	2	25
1,3,5-Trimethylbenzene	10.00	12.53	125	70-130	1	25
1,2,4-Trimethylbenzene	10.00	12.95	130	70-130	1	25
1,3-Dichlorobenzene	10.00	11.87	119	70-130	3	25
1,4-Dichlorobenzene	10.00	11.81	118	70-130	1	25
Benzyl chloride	10.00	12.32	123	70-130	4	25
1,2-Dichlorobenzene	10.00	12.20	122	70-130	3	25
1,2,4-Trichlorobenzene	10.00	13.47	135 *	70-130	8	25
Hexachlorobutadiene	10.00	13.52 b	135 *	70-130	3	25
Naphthalene	10.00	13.96	140 *	70-130	7	25

Surrogate	%REC	Limits
Bromofluorobenzene	103	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC879899	Diln Fac:	1.000
Matrix:	Air	Batch#:	246260
Units (V):	ppbv	Analyzed:	04/04/17

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	0.050	ND	0.13
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	1.7	ND	4.9
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

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC879899	Diln Fac:	1.000
Matrix:	Air	Batch#:	246260
Units (V):	ppbv	Analyzed:	04/04/17

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	99	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246311
Units (V):	ppbv	Analyzed:	04/05/17
Diln Fac:	1.000		

Type: BS Lab ID: QC880107

Analyte	Spiked	Result (V)	%REC	Limits
Freon 12	10.00	8.515	85	70-130
Freon 114	10.00	9.240	92	70-130
Chloromethane	10.00	7.250	73	70-130
Vinyl Chloride	10.00	8.477	85	70-130
1,3-Butadiene	10.00	8.520	85	70-130
Bromomethane	10.00	6.978	70	70-130
Chloroethane	10.00	8.102	81	70-130
Trichlorofluoromethane	10.00	9.787	98	70-130
Acrolein	10.00	11.87	119	70-130
1,1-Dichloroethene	10.00	12.86	129	70-130
Freon 113	10.00	10.51	105	70-130
Acetone	10.00	8.895	89	70-130
Carbon Disulfide	10.00	10.14	101	70-130
Isopropanol	10.00	8.928	89	70-130
Methylene Chloride	10.00	9.601	96	70-130
trans-1,2-Dichloroethene	10.00	11.27	113	70-130
MTBE	10.00	10.26	103	70-130
n-Hexane	10.00	10.67	107	70-130
1,1-Dichloroethane	10.00	11.10	111	70-130
Vinyl Acetate	10.00	15.33 b	153 *	70-130
cis-1,2-Dichloroethene	10.00	10.36	104	70-130
2-Butanone	10.00	8.613	86	70-130
Ethyl Acetate	10.00	7.731	77	70-130
Tetrahydrofuran	10.00	12.04	120	70-130
Chloroform	10.00	10.43	104	70-130
1,1,1-Trichloroethane	10.00	11.30	113	70-130
Cyclohexane	10.00	11.19	112	70-130
Carbon Tetrachloride	10.00	9.218	92	70-130
Benzene	10.00	10.61	106	70-130
1,2-Dichloroethane	10.00	11.06	111	70-130
n-Heptane	10.00	12.16	122	70-130
Trichloroethene	10.00	10.82	108	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246311
Units (V):	ppbv	Analyzed:	04/05/17
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits
1,2-Dichloropropane	10.00	11.48	115	70-130
Bromodichloromethane	10.00	11.13	111	70-130
cis-1,3-Dichloropropene	10.00	10.91	109	70-130
4-Methyl-2-Pentanone	10.00	12.31	123	70-130
Toluene	10.00	12.09	121	70-130
trans-1,3-Dichloropropene	10.00	11.74	117	70-130
1,1,2-Trichloroethane	10.00	12.58	126	70-130
Tetrachloroethene	10.00	12.27	123	70-130
2-Hexanone	10.00	13.27 b	133 *	70-130
Dibromochloromethane	10.00	10.75	107	70-130
1,2-Dibromoethane	10.00	11.79	118	70-130
Chlorobenzene	10.00	12.31	123	70-130
Ethylbenzene	10.00	12.07	121	70-130
m,p-Xylenes	20.00	24.48	122	70-130
o-Xylene	10.00	12.13	121	70-130
Styrene	10.00	11.80	118	70-130
Bromoform	10.00	10.13	101	70-130
1,1,2,2-Tetrachloroethane	10.00	11.69	117	70-130
4-Ethyltoluene	10.00	12.08	121	70-130
1,3,5-Trimethylbenzene	10.00	12.37	124	70-130
1,2,4-Trimethylbenzene	10.00	12.88	129	70-130
1,3-Dichlorobenzene	10.00	11.53	115	70-130
1,4-Dichlorobenzene	10.00	11.91	119	70-130
Benzyl chloride	10.00	12.14	121	70-130
1,2-Dichlorobenzene	10.00	11.97	120	70-130
1,2,4-Trichlorobenzene	10.00	12.86	129	70-130
Hexachlorobutadiene	10.00	13.33 b	133 *	70-130
Naphthalene	10.00	13.40 b	134 *	70-130

Surrogate	%REC	Limits
Bromofluorobenzene	104	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246311
Units (V):	ppbv	Analyzed:	04/05/17
Diln Fac:	1.000		

Type: BSD Lab ID: QC880108

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
Freon 12	10.00	8.917	89	70-130	5	25
Freon 114	10.00	9.545	95	70-130	3	25
Chloromethane	10.00	7.667	77	70-130	6	25
Vinyl Chloride	10.00	8.734	87	70-130	3	25
1,3-Butadiene	10.00	9.270	93	70-130	8	25
Bromomethane	10.00	7.342	73	70-130	5	25
Chloroethane	10.00	8.475	85	70-130	5	25
Trichlorofluoromethane	10.00	10.07	101	70-130	3	25
Acrolein	10.00	11.46	115	70-130	4	25
1,1-Dichloroethene	10.00	13.12	131 *	70-130	2	25
Freon 113	10.00	10.87	109	70-130	3	25
Acetone	10.00	9.321	93	70-130	5	25
Carbon Disulfide	10.00	10.19	102	70-130	1	25
Isopropanol	10.00	9.060	91	70-130	1	25
Methylene Chloride	10.00	9.888	99	70-130	3	25
trans-1,2-Dichloroethene	10.00	11.74	117	70-130	4	25
MTBE	10.00	10.53	105	70-130	3	25
n-Hexane	10.00	10.83	108	70-130	1	25
1,1-Dichloroethane	10.00	11.33	113	70-130	2	25
Vinyl Acetate	10.00	16.12 b	161 *	70-130	5	25
cis-1,2-Dichloroethene	10.00	10.80	108	70-130	4	25
2-Butanone	10.00	9.090	91	70-130	5	25
Ethyl Acetate	10.00	7.930	79	70-130	3	25
Tetrahydrofuran	10.00	12.19	122	70-130	1	25
Chloroform	10.00	10.77	108	70-130	3	25
1,1,1-Trichloroethane	10.00	11.18	112	70-130	1	25
Cyclohexane	10.00	11.08	111	70-130	1	25
Carbon Tetrachloride	10.00	9.070	91	70-130	2	25
Benzene	10.00	10.41	104	70-130	2	25
1,2-Dichloroethane	10.00	11.01	110	70-130	0	25
n-Heptane	10.00	12.17	122	70-130	0	25
Trichloroethene	10.00	10.55	106	70-130	3	25

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Matrix:	Air	Batch#:	246311
Units (V):	ppbv	Analyzed:	04/05/17
Diln Fac:	1.000		

Analyte	Spiked	Result (V)	%REC	Limits	RPD	Lim
1,2-Dichloropropane	10.00	11.34	113	70-130	1	25
Bromodichloromethane	10.00	11.14	111	70-130	0	25
cis-1,3-Dichloropropene	10.00	10.60	106	70-130	3	25
4-Methyl-2-Pentanone	10.00	12.01	120	70-130	2	25
Toluene	10.00	11.92	119	70-130	1	25
trans-1,3-Dichloropropene	10.00	11.40	114	70-130	3	25
1,1,2-Trichloroethane	10.00	12.48	125	70-130	1	25
Tetrachloroethene	10.00	12.16	122	70-130	1	25
2-Hexanone	10.00	13.21 b	132 *	70-130	0	25
Dibromochloromethane	10.00	10.63	106	70-130	1	25
1,2-Dibromoethane	10.00	11.73	117	70-130	0	25
Chlorobenzene	10.00	12.14	121	70-130	1	25
Ethylbenzene	10.00	12.03	120	70-130	0	25
m,p-Xylenes	20.00	23.84	119	70-130	3	25
o-Xylene	10.00	12.06	121	70-130	1	25
Styrene	10.00	11.50	115	70-130	3	25
Bromoform	10.00	10.09	101	70-130	0	25
1,1,2,2-Tetrachloroethane	10.00	11.62	116	70-130	1	25
4-Ethyltoluene	10.00	12.32	123	70-130	2	25
1,3,5-Trimethylbenzene	10.00	12.12	121	70-130	2	25
1,2,4-Trimethylbenzene	10.00	12.55	126	70-130	3	25
1,3-Dichlorobenzene	10.00	11.52	115	70-130	0	25
1,4-Dichlorobenzene	10.00	11.35	113	70-130	5	25
Benzyl chloride	10.00	11.78	118	70-130	3	25
1,2-Dichlorobenzene	10.00	11.45	115	70-130	4	25
1,2,4-Trichlorobenzene	10.00	12.40	124	70-130	4	25
Hexachlorobutadiene	10.00	12.94 b	129	70-130	3	25
Naphthalene	10.00	13.13 b	131 *	70-130	2	25

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

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC880109	Diln Fac:	1.000
Matrix:	Air	Batch#:	246311
Units (V):	ppbv	Analyzed:	04/05/17

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	0.050	ND	0.13
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	1.7	ND	4.9
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

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics in Air

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	EPA TO-15
Type:	BLANK	Units (M):	ug/m3
Lab ID:	QC880109	Diln Fac:	1.000
Matrix:	Air	Batch#:	246311
Units (V):	ppbv	Analyzed:	04/05/17

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	98	70-130

ND= Not Detected
RL= Reporting Limit
Result M= Result in mass units
Result V= Result in volume units

Curtis & Tompkins, Ltd.

Fixed Gas Analysis

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	ASTM D1946-90
Matrix:	Air	Sampled:	03/31/17
Units:	ppmv	Received:	03/31/17
Units (Mol %):	MOL %	Analyzed:	04/03/17
Batch#:	246211		

Field ID: SV-30 Lab ID: 287578-001
Type: SAMPLE Diln Fac: 1.960

Analyte	Result	RL	Result (Mol %)	RL
Helium	ND	2,000	ND	0.20
Carbon Dioxide	ND	2,000	ND	0.20
Oxygen	15,000	2,000	1.5	0.20
Methane	ND	2,000	ND	0.20

Field ID: SV-20 Lab ID: 287578-002
Type: SAMPLE Diln Fac: 1.960

Analyte	Result	RL	Result (Mol %)	RL
Helium	400,000	2,000	40	0.20
Carbon Dioxide	ND	2,000	ND	0.20
Oxygen	5,400	2,000	0.54	0.20
Methane	ND	2,000	ND	0.20

Field ID: SV-22 Lab ID: 287578-003
Type: SAMPLE Diln Fac: 1.920

Analyte	Result	RL	Result (Mol %)	RL
Helium	ND	1,900	ND	0.19
Carbon Dioxide	ND	1,900	ND	0.19
Oxygen	14,000	1,900	1.4	0.19
Methane	ND	1,900	ND	0.19

Field ID: SV-31 Lab ID: 287578-004
Type: SAMPLE Diln Fac: 2.600

Analyte	Result	RL	Result (Mol %)	RL
Helium	ND	2,600	ND	0.26
Carbon Dioxide	ND	2,600	ND	0.26
Oxygen	120,000	2,600	12	0.26
Methane	ND	2,600	ND	0.26

Field ID: SV-26 Lab ID: 287578-005
Type: SAMPLE Diln Fac: 2.040

Analyte	Result	RL	Result (Mol %)	RL
Helium	ND	2,000	ND	0.20
Carbon Dioxide	ND	2,000	ND	0.20
Oxygen	75,000	2,000	7.5	0.20
Methane	ND	2,000	ND	0.20

ND= Not Detected
RL= Reporting Limit
Result Mol %= Result in Mole Percent

Curtis & Tompkins, Ltd.

Fixed Gas Analysis

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	ASTM D1946-90
Matrix:	Air	Sampled:	03/31/17
Units:	ppmv	Received:	03/31/17
Units (Mol %):	MOL %	Analyzed:	04/03/17
Batch#:	246211		

Field ID: SV-16 Lab ID: 287578-006
Type: SAMPLE Diln Fac: 2.190

Analyte	Result	RL	Result (Mol %)	RL
Helium	ND	2,200	ND	0.22
Carbon Dioxide	37,000	2,200	3.7	0.22
Oxygen	110,000	2,200	11	0.22
Methane	ND	2,200	ND	0.22

Type: BLANK Diln Fac: 1.000
Lab ID: QC879695

Analyte	Result	RL	Result (Mol %)	RL
Helium	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

ND= Not Detected
RL= Reporting Limit
Result Mol %= Result in Mole Percent

Curtis & Tompkins, Ltd.

Batch QC Report

Fixed Gas Analysis

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	ASTM D1946-90
Matrix:	Air	Batch#:	246211
Units:	ppmv	Analyzed:	04/03/17
Diln Fac:	1.000		

Type: BS Lab ID: QC879691

Analyte	Spiked	Result	%REC	Limits
Helium	100,000	76,070	76	70-130
Carbon Dioxide		NA		
Oxygen		NA		
Methane		NA		

Type: BSD Lab ID: QC879692

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Helium	100,000	71,180	71	70-130	7	30
Carbon Dioxide		NA				
Oxygen		NA				
Methane		NA				

NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Fixed Gas Analysis

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	ASTM D1946-90
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC879693	Batch#:	246211
Matrix:	Air	Analyzed:	04/03/17
Units:	ppmv		

Analyte	Spiked	Result	%REC	Limits
Helium		NA		
Carbon Dioxide	2,000	1,827	91	70-130
Oxygen	2,000	1,745	87	70-130
Methane	2,000	1,848	92	70-130

NA= Not Analyzed

Curtis & Tompkins, Ltd.

Batch QC Report

Fixed Gas Analysis

Lab #:	287578	Location:	City Venture W.Grand/Filbert
Client:	Stantec	Prep:	METHOD
Project#:	STANDARD	Analysis:	ASTM D1946-90
Field ID:	SV-30	Units (Mol %):	MOL %
Type:	SDUP	Diln Fac:	1.960
MSS Lab ID:	287578-001	Batch#:	246211
Lab ID:	QC879694	Sampled:	03/31/17
Matrix:	Air	Received:	03/31/17
Units:	ppmv	Analyzed:	04/03/17

Analyte	MSS Result	Result	RL	Result (Mol %)	RL	RPD	Lim
Helium	<1,960	ND	1,960	ND	0.1960	NC	30
Carbon Dioxide	<1,960	ND	1,960	ND	0.1960	NC	30
Oxygen	15,150	15,130	1,960	1.513	0.1960	0	30
Methane	<1,960	ND	1,960	ND	0.1960	NC	30

NC= Not Calculated
ND= Not Detected
RL= Reporting Limit
RPD= Relative Percent Difference
Result Mol %= Result in Mole Percent

ATTACHMENT B

TABLE 3
Soil Vapor Analytical Results Summary
City Ventures - Oakland 2

Sample Location and ID	Sample Date	Sample Depth (ft. bgs)	Volatile Organic Compounds (EPA Method 8260) (µg/m3)													ASTM D1946 (ppmv)	
			Freon 12	Freon 11	Benzene	Ethylbenzene	m,p-Xylene	o-Xylene	1,1,2,2-Tetrachloroethane	cis-1,2-DCE	Vinyl Chloride	n-Hexane	Cyclohexane	n-Heptane	Other VOCs	Methane*	O_2*
SV-1	5/30/2014	5	**19,000**	ND<100	ND<32	ND<26	ND<200	ND<100	ND<100	ND<26	ND<26	--	--	--	ND<80-200	--	--
SV-2	5/30/2014	5	**140**	ND<100	ND<32	ND<26	ND<200	ND<100	ND<100	ND<26	ND<26	--	--	--	ND<80-200	--	--
SV-3	5/30/2014	5	ND<100	ND<100	ND<32	ND<26	ND<200	ND<100	ND<100	ND<26	ND<26	--	--	--	ND<80-200	--	--
SV-4	5/30/2014	5	**110**	ND<100	**75**	ND<26	ND<200	ND<100	ND<100	ND<26	ND<26	--	--	--	ND<80-200	--	--
SV-5	9/26/2016	5	ND<100	ND<100	ND<35	ND<20	ND<200	ND<100	ND<22	ND<100	ND<9	--	--	--	ND < 9-200	**53,000**	**22,000**
SV-6	9/26/2016	5	**30,000**	**3,400**	ND<35	ND<20	**420**	**140**	ND<22	ND<100	ND<9	--	--	--	ND < 9-200	--	--
SV-7	9/26/2016	5	**2,100**	ND<100	ND<35	ND<20	ND<200	ND<100	ND<22	ND<100	ND<9	--	--	--	ND < 9-200	**2,900**	**14,000**
SV-8	9/26/2016	5	**1,800**	ND<100	ND<35	ND<20	ND<200	ND<100	ND<22	ND<100	ND<9	--	--	--	ND < 9-200	--	--
SV-9	9/26/2016	5	**2,600**	**210**	ND<35	ND<20	ND<200	ND<100	**37**	ND<100	ND<9	--	--	--	ND < 9-200	--	--
SV-10	9/26/2016	5	ND<100	ND<100	**60**	ND<20	**410**	ND<100	ND<22	ND<100	ND<9	--	--	--	ND < 9-200	--	--
SV-11	9/26/2016	5	**930**	ND<100	ND<35	ND<20	**420**	ND<100	ND<22	ND<100	ND<9	--	--	--	ND < 9-200	--	--
SV-12	9/26/2016	5	ND<100	ND<100	ND<35	ND<20	ND<200	ND<100	ND<22	ND<100	ND<9	--	--	--	ND < 9-200	--	--
SV-13**	9/26/2016	5	**19,000**	ND<3,400	ND<1,900	ND<2,600	ND<2,600	ND<2,600	ND<4,100	ND<2,400	ND<1,500	**220,000**	**220,000**	**47,000**	ND < 1,200-13,000	--	--
SV-14	9/26/2016	5	**76,000**	**1,700**	**78**	**180**	**890**	**270**	ND<22	ND<100	ND<9	--	--	--	ND < 9-200	--	--

Notes:

All reported concentrations from soil vapor samples collected to date are below Site Specific Screening levels (see HHRA).

$\mu g/m^3$: micrograms per cubic meter

ppmv = parts per million by vapor

VOCs = volatile organic carbons

ft. bgs: feet below ground surface

Freon 12 = Dichlorodifluoromethane

Freon 11 = Trichlorofluoromethane

All samples collected September 26, 2016.

Soil vapor samples analyzed by TEG on-site mobile laboratory except where indicated as analyzed by Curtis & Tompkins, Ltd. In Berkeley, CA

* Analyzed by Curtis & Tompkins, Ltd in Berkeley, CA

** = Analyzed by Curtis & Tompkins, Ltd in Berkeley, CA using EPA Method TO-15.

Bold cells indicate constituent detected above the laboratory reporting limit (RL)

ND = Not detected at reporting limit as indicated

--- = not analyzed

NA = Not available

ATTACHMENT C

Apex Companies, LLC
3478 Buskirk Avenue, Suite 100 • Pleasant Hill, CA 94523
P: (925) 944-2856 • F: (925) 944-2859

May 24, 2017

Ms. Dilan Roe, P.E.
Alameda County Environmental Health (ACEH)
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Site-Specific Soil Gas Screening Levels for Vinyl Chloride and 1,1,2-Trichloroethane
City Ventures – Multiple Parcels
Oakland, California

Dear Ms. Roe:

On behalf of City Ventures, The Source Group, Inc. a division of Apex Companies, LLC (Apex-SGI), has prepared this letter to present the Site-specific soil gas screening levels for vinyl chloride and 1,1,2-trichloroethane. These screening levels were prepared for the City Ventures Oakland Site, which is comprised of multiple parcels located between West Grand Avenue, 24th Street, Filbert Street, and Market Street in the City of Oakland, California (the Site).

Development of Site-specific soil gas screening levels was consistent with the methods and procedures presented in the *Human Health Risk Assessment Report* (HHRA) prepared by Stantec Consulting Services Inc. (Stantec), dated March 2, 2017. The Site-specific soil gas screening levels were developed using the following equation:

$$\text{Site-Specific Screening Level}_{\text{soil gas}} = \text{ESL}_{\text{indoor air}} \div \text{attenuation factor (AF)}$$

This equation uses the Regional Water Quality Control Board, San Francisco Bay (RWQCBSFB) Environmental Screening Levels (ESLs)[1] for indoor air and Site-specific attenuation factors (AFs) estimated by the Department of Toxic Substances Control (DTSC)-modified Johnson & Ettinger (J&E) soil gas screening model[2]. In the model, the chemical-specific attenuation factors are derived based on Site-specific soil properties, chemical properties, and building properties. According to the HHRA, loam is the predominant soil type across the Site. The DTSC default values for "loam" (L) were 1.59 grams per cubic meter (g/cm^3) for dry bulk density, 0.399 for total porosity, 0.148 for water-filled porosity, 0.251 for air-filled porosity were used in the model. The J&E soil gas

[1] RWQCBSFB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Region. Revision 3. February.
[2] DTSC. 2014. Screening Level Model for Soil Gas Contamination. California Environmental Protection Agency (CalEPA), Human Health Risk Office (HERO). March. http://www.dtsc.ca.gov/SiteCleanup/Vapor_Intrusion.cfm

screening model worksheets and estimated attenuation factors for vinyl chloride and 1,1,2-trichloroethane are provided in Attachment A.

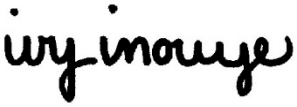
The following table presents the Site-specific soil gas screening levels for vinyl chloride and 1,1,2-trichloroethane. RWQCBSFB soil gas ESLs are provided for comparison.

Chemical	RWQCBSFB $ESL_{Indoor\ Air}$ ($\mu g/m^3$)	Site-Specific Attenuation Factor-Loam	RWQCBSFB $ESL_{soil\ gas}$ ($\mu g/m^3$)	Site-Specific SL-Soil Gas ($\mu g/m^3$)
Vinyl Chloride	0.0095	9.1E-04	4.7	10
1,1,2-Trichloroethane	0.18	6.6E-04	88	270

The Site-specific soil gas screening levels for vinyl chloride and 1,1,2-trichloroethane were developed in accordance with the methods and procedures presented in the HHRA, dated March 2, 2017. Therefore, these screening levels are appropriate for use at the Site in evaluating analytical results from any additional soil gas sampling at the Site.

Please contact me at ivy.inouye@apexcos.com or 925-951-6379 with any further questions.

Sincerely,
The Source Group, Inc.
A Division of Apex Companies LLC



Ivy Inouye
Senior Toxicologist

cc: Mr. Andrew Warner, City Ventures
Mr. Tom Graf, GrafCon

Attachment A J&E Soil Gas Screening Model Worksheets

APEX

ATTACHMENT A

J&E SOIL GAS SCREENING MODEL WORKSHEETS

USEPA SG-SCREEN
Version 2.0, 04/2003

DTSC Modification
December 2014

Department of Toxic Substances Control
Vapor Intrusion Screening Model - Soil Gas

DATA ENTRY SHEET

Reset to Defaults

Soil Gas Concentration Data

	ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Soil gas conc., C_g ($\mu g/m^3$)	OR	ENTER Soil gas conc., C_g (ppmv)	Chemical
1	75014	0.00E+00			Vinyl chloride (chloroethene)
2	79005	0.00E+00			1,1,2-Trichloroethane

MESSAGE: See VLOOKUP table comments on chemical properties and/or toxicity criteria for this chemical.

Enter soil gas concentration above.

Scenario: Residential

Results Summary

Soil Gas Conc. ($\mu g/m^3$)	Attenuation Factor (unitless)	Indoor Air Conc. ($\mu g/m^3$)	Cancer Risk	Noncancer Hazard
0.00E+00	9.1E-04	0.0E+00	0.0E+00	0.0E+00
0.00E+00	6.6E-04	0.0E+00	0.0E+00	0.0E+00

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (15 or 200 cm)	ENTER Soil gas sampling depth below grade, L_s (cm)	ENTER Average soil temperature, T_S (°C)	ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	ENTER User-defined vadose zone soil vapor permeability, k_v (cm^2)
15	152	16.7	L		

MORE ↓

Lookup Soil Parameters

ENTER Vandose zone SCS soil type	ENTER Vadose zone soil dry bulk density, ρ_b^A (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
L	1.59	0.399	0.148	5

MORE ↓

Lookup Receptor Parameters

	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)	ENTER Exposure Time ET (hrs/day)	ENTER Air Exchange Rate ACH $(hour)^{-1}$
NEW=> Residential	70	26	26	350	24 (NEW)	0.5 (NEW)

END

Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Enthalpy of vaporization at the normal boiling point, $\Delta H_{v,b}$ (cal/mol)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)	Molecular weight, MW (g/mol)
1.07E-01	1.20E-05	2.78E-02	25	5,250	259.25	432.00	7.8E-05	1.0E-01	62.50
6.69E-02	1.00E-05	8.24E-04	25	8,322	386.15	602.00	1.6E-05	2.0E-04	133.41

END

INTERMEDIATE CALCULATIONS SHEET

Scenario: Residential

Source-building separation, L_T (cm)	Vadose zone soil air-filled porosity, θ_a^V (cm^3/cm^3)	Vadose zone effective total fluid saturation, S_{te} (cm^3/cm^3)	Vadose zone soil intrinsic permeability, k_i (cm^2)	Vadose zone soil relative air permeability, k_{rg} (cm^2)	Vadose zone soil effective vapor permeability, k_v (cm^2)	Floor-wall seam perimeter, X_{crack} (cm)	Soil gas conc. ($\mu g/m^3$)	Bldg. ventilation rate, $Q_{building}$ (cm^3/s)
137	0.251	0.257	1.87E-09	0.854	1.60E-09	4,000	0.00E+00	3.39E+04
137	0.251	0.257	1.87E-09	0.854	1.60E-09	4,000	0.00E+00	3.39E+04

Area of enclosed space below grade, A_B (cm^2)	Crack-to-total area ratio, η (unitless)	Crack depth below grade, Z_{crack} (cm)	Enthalpy of vaporization at ave. soil temperature, $\Delta H_{v,TS}$ (cal/mol)	Henry's law constant at ave. soil temperature, H_{TS} (atm-m^3/mol)	Henry's law constant at ave. soil temperature, H'_{TS} (unitless)	Vapor viscosity at ave. soil temperature, μ_{TS} (g/cm-s)	Vadose zone effective diffusion coefficient, D^{eff}_V (cm^2/s)	Diffusion path length, L_d (cm)
1.00E+06	5.00E-03	15	4,925	2.19E-02	9.21E-01	1.77E-04	6.74E-03	137
1.00E+06	5.00E-03	15	9,499	5.21E-04	2.19E-02	1.77E-04	4.22E-03	137

Convection path length, L_p (cm)	Source vapor conc., C_{source} ($\mu g/m^3$)	Crack radius, r_{crack} (cm)	Average vapor flow rate into bldg., Q_{soil} (cm^3/s)	Crack effective diffusion coefficient, D^{crack} (cm^2/s)	Area of crack, A_{crack} (cm^2)	Exponent of equivalent foundation Peclet number, $\exp(Pe^f)$ (unitless)	Infinite source indoor attenuation coefficient, α (unitless)	Infinite source bldg. conc., $C_{building}$ ($\mu g/m^3$)
15	0.00E+00	1.25	8.33E+01	6.74E-03	5.00E+03	5.43E+10	**9.13E-04**	0.00E+00
15	0.00E+00	1.25	8.33E+01	4.22E-03	5.00E+03	1.48E+17	**6.63E-04**	0.00E+00

Unit risk factor, URF $(\mu g/m^3)^{-1}$	Reference conc., RfC (mg/m^3)
7.8E-05	1.0E-01
1.6E-05	2.0E-04

END