

**SOIL VAPOUR SAMPLING PROGRAM – APRIL 2024  
FORMER SEARS FUEL SITE AND ADJACENT HOUNSFIELD HEIGHTS AREA  
1620 – 14<sup>th</sup> AVENUE NW  
CALGARY, ALBERTA  
SUNCOR OUTLET NO. 9445  
ALBERTA ENVIRONMENT AND PROTECTED AREAS (AEPA) FILE NO. 00141934**

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**THIS REPORT CONTAINS PROVISIONS LIMITING LIABILITY, THE SCOPE OF THE REPORT AND THIRD-PARTY RELIANCE.**

## SUMMARY

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<b>Site</b>	1620 - 14th Avenue NW; the Mall Property; 14th Avenue NW; Lions Park; and the adjacent Hounsfield Heights community
<b>Type of Facility</b>	Former Sears Fuel Site
<b>Applicable Soil Vapour Guidelines</b>	Calculated soil vapour quality guidelines protective of indoor air quality; fine-grained and coarse-grained soils; residential and commercial land use; for various depths.
<b>Date(s) of Soil Vapour Sampling</b>	April 9 to 19, 2024
<b>Soil Vapour Wells with Soil Vapour Samples that Exceeded Guidelines:</b>	None of the wells sampled exceed the calculated guidelines or the 90% trigger threshold.
<b>Changes to Program and Future Work</b>	The next soil vapour sampling event is scheduled for September/October 2024.

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## 1.0 INTRODUCTION

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Parsons Inc. (Parsons) was retained by Suncor Energy Products Partnership (Suncor) to perform soil vapour sampling as a part of ongoing risk management related to the Former Sears Fuel Site located at 1620 - 14th Avenue NW; also including the Mall Property; 14th Avenue NW; Lions Park; and the adjacent Hounsfield Heights community (collectively referred to as “the site”).

### 1.1 PURPOSE

Soil vapour sampling was conducted between April 9 and April 19, 2024, in accordance with the semi-annual Soil Vapour Program, which was developed to assess risk related to the indoor vapour inhalation exposure pathway.

### 1.2 SCOPE OF WORK

The following site activities were conducted on behalf of Suncor in April 2024:

- Collect soil vapour samples from 24 soil vapour monitoring wells as a part of the semi-annual Soil Vapour Program;
- Repair selected wells which were previously damaged or inaccessible, where possible; and,
- Prepare a report that describes the field activities and the results of the assessment.

A site location map, also showing municipal zoning, is presented as Drawing No. 1. The grade elevations are shown on Drawing No. 2.

## 2.0 SITE ACTIVITIES

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Between April 9 and April 19, 2024, soil vapour samples were collected from 24 soil vapour monitoring wells, as presented in Table 1. It should be noted that some of the soil vapour monitoring wells could not be sampled as the wells were saturated with water at the time of the leak testing and/or sampling (SV28, SV501, and SV504), or the well was destroyed (SV503).

Soil Vapour Monitoring Well Locations:	Drawing No. 3. It should be noted that soil vapour wells located on private property within the residential areas are not shown on the drawings.
Sampling/Investigation Date(s):	April 9 to April 19, 2023.
Soil Vapour samples analyzed for:	<input checked="" type="checkbox"/> Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) <input checked="" type="checkbox"/> Aliphatic and Aromatic Fractions <input checked="" type="checkbox"/> 1,2-Dichloroethane (1,2-DCA) <input checked="" type="checkbox"/> Naphthalene <input checked="" type="checkbox"/> Matrix Gases (O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> , and CH <sub>4</sub> )
Laboratory:	AGAT Laboratories.
Field procedures shown in:	Appendix A: The field procedures were conducted in accordance with generally accepted industry practices.
Integrity and Leak Testing Results:	Presented in Appendix B.
Purging and Sampling Details:	Presented in Appendix B.

### 3.0 GUIDELINES REFERENCED

Soil vapour guidelines developed by Intrinsik have been referenced (Intrinsik, 2024) and are summarized in Appendix C. These guidelines were developed following the Canadian Council of Minister of the Environment (CCME) protocol (CCME, 2014) and Alberta Environment and Parks (AEP, 2022a,b) guidance. Soil vapour concentrations were also compared to 90% of the calculated soil vapour guidelines, which was used as a trigger threshold to increase the sample frequency as per the Risk Management and Contingency (RM&C) Plan.

## 4.0 RESULTS OF THE INVESTIGATION

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### 4.1 SOIL VAPOUR ANALYTICAL RESULTS

BTEX, Aliphatic and Aromatic Fractions, 1,2-DCA, and Naphthalene:	As presented in Table 1, none of the soil vapour samples collected and analyzed from the April 2024 sampling event exceeded the applicable guidelines, or the 90% trigger threshold.
Spatial Summary of Analytical Results:	Presented as Drawing No. 4.
Historical Analytical Results:	Presented in Appendix D.
Laboratory Certificates:	Presented in Appendix E.

### 4.2 QUALITY ASSURANCE AND QUALITY CONTROL (QAQC) RESULTS

Laboratory QAQC:	Appendix D	No laboratory QAQC issues were identified that call into question the reliability of the laboratory data reported.
Field QAQC:	Appendix D	No laboratory QAQC issues were identified that call into question the reliability of the field data reported.
QAQC Summary:	Appendix D	No QAQC issues were identified that would affect the overall conclusions of the assessment work presented in this report.

## 5.0 SUMMARY

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Between April 9, 2024 and April 19, 2024, soil vapour samples were collected from 24 soil vapour monitoring wells and compared to the soil vapour guidelines. The soil vapour guidelines developed by Intrinsik have been referenced (Intrinsik, 2024); soil vapour concentrations were also compared to 90% of the calculated guidelines, as per the RM&C Plan.

The results of the soil vapour sampling in April 2024 are summarized as follows:

- Soil vapour concentrations of BTEX, aliphatic and aromatic fractions, 1,2-DCA and naphthalene measured in the soil vapour samples collected (SV09, SV10, SV11, SV21, SV23, SV24, SV26A/B/C, SV29, SV30, SV31, SV32, SV37, SV39, SV40, SV41, SV101, SV324, SV401, SV403, SV404, SV502, and SV505) were less than the calculated guidelines, and the 90% trigger threshold.

The next soil vapour sampling event is anticipated to be conducted in September/October of 2024.

## **6.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD-PARTY RELIANCE**

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This report has been prepared and the work referred to in this report has been undertaken by Parsons for Suncor Energy Products Partnership (Suncor). It is intended for the sole and exclusive use of Suncor Energy Inc., its affiliated companies and partners and their respective insurers, agents, employees and advisors (collectively, "Suncor"). Any use, reliance on or decision made by any person other than Suncor based on this report is the sole responsibility of such other person. Suncor and Parsons make no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigations undertaken by Parsons with respect to this report and any conclusions or recommendations made in this report reflect Parsons' judgement based on the site conditions observed at the time of the site inspection on the date(s) set out in this report and on information examined at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths, and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed in the report. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by this investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

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## 7.0 CLOSURE

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We trust the foregoing information is satisfactory for your requirements. If there are any questions or concerns regarding this report, please do not hesitate to contact the undersigned.

Respectfully submitted,

PARSONS INC.



Rebecca Neufeld, G.I.T.



Michelle S. Patterson, P.Tech.(Eng.)

B. Hann, P.Geol.

## 8.0 REFERENCES

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AEP 2022a. *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*. Land Policy Branch, Policy and Planning Division, Alberta Environment and Parks. August 24, 2022.

AEP 2022b. *Alberta Tier 2 Soil and Groundwater Remediation Guidelines*. Land Policy Branch, Policy and Planning Division, Alberta Environment and Parks. August 24, 2022.

CCME, 2014. *A Protocol for the Derivation of Soil Vapour Quality Guidelines for Protection of Human Exposures via Inhalation of Vapours*. Canadian Council of Ministers of the Environment.

Intrinsic, 2024. *Development of Soil Vapour and Groundwater Quality Guidelines*. Prepared by Intrinsic Corp. for Suncor Energy Products Partnership. March 2024.

Parsons, 2024. Annual Summary Report – 2023, Former Sears Fuel Site and Adjacent Hounsfield Heights Area, 1620 – 14<sup>th</sup> Avenue NW, Calgary, Alberta, Suncor Outlet No. 9445. Prepared by Parsons Inc. (Parsons) for Suncor Energy Products Partnership. March 28, 2024.

**TABLE 1**  
**RESULTS OF SOIL VAPOUR ANALYSES**  
**PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE**  
**(µg/m<sup>3</sup>)**

CONSTITUENT			Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatics C6-C8	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloroethane	Naphthalene	F1 (C6-C10)	F2 (>C10-C16)	
Sample Location	Sample Date	Total Well Depth (mbgs)																	
<b>Guidelines<sup>a</sup>:</b>																			
		<b>Residential: fine or coarse-grained; &lt;1 m beneath foundation</b>	6.2E+01	1.1E+05	9.9E+04	4.9E+03	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	
		<b>Residential: fine-grained: 1 m beneath foundation</b>	3.0E+04	5.4E+07	4.9E+07	2.4E+06	<b>4.7E+08</b>	2.4E+07	<b>2.5E+07</b>	<b>2.5E+07</b>	NG	4.1E+06	<b>5.1E+06</b>	<b>5.1E+06</b>	1.8E+03	2.2E+04	NG	NG	
		<b>Residential: fine-grained: 1.5 m beneath foundation</b>	3.1E+04	5.6E+07	5.1E+07	2.5E+06	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	
		<b>Residential: fine-grained: 2 m beneath foundation</b>	3.2E+04	5.9E+07	5.3E+07	2.6E+06	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	
		<b>Residential: fine-grained: 2.5 m beneath foundation</b>	3.3E+04	6.1E+07	<b>5.5E+07</b>	2.7E+06	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	
		<b>Residential: fine-grained: 3 m beneath foundation</b>	3.5E+04	6.3E+07	<b>5.7E+07</b>	2.8E+06	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	
		<b>Residential: coarse-grained: 1 m beneath foundation</b>	4.0E+03	7.3E+06	6.8E+06	3.3E+05	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	
		<b>Residential: coarse-grained: 1.5 m beneath foundation</b>	4.7E+03	8.5E+06	8.0E+06	3.8E+05	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	
		<b>Residential: coarse-grained: 2 m beneath foundation</b>	5.3E+03	9.7E+06	9.2E+06	4.4E+05	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	
		<b>Residential: coarse-grained: 2.5 m beneath foundation</b>	5.9E+03	1.0E+07	1.0E+07	5.0E+05	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	
		<b>Residential: coarse-grained: 3 m beneath foundation</b>	6.6E+03	1.2E+07	1.1E+07	5.5E+05	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	
SV09	2024-04-18	4.0	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV10	2024-04-18	1.0	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV11	2024-04-19	1.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV21	2024-04-18	3.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV23	2024-04-18	4.5	9.46	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024.*

The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

Dup - Duplicate Sample.

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

mbgs - metres below ground surface (unless otherwise specified)

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>), unless otherwise specified.

**TABLE 1**  
**RESULTS OF SOIL VAPOUR ANALYSES**  
**PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE**  
**(µg/m<sup>3</sup>)**

Sample Location	Sample Date	Total Well Depth (mbgs)	CONSTITUENT															
			Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatics C6-C8	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloroethane	Naphthalene	F1 (C6-C10)	F2 (>C10-C16)
<b>Guidelines<sup>a</sup>:</b>																		
		Residential: fine or coarse-grained; <1 m beneath foundation	6.2E+01	1.1E+05	9.9E+04	4.9E+03	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG
		Residential: fine-grained: 1 m beneath foundation	3.0E+04	5.4E+07	4.9E+07	2.4E+06	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG
		Residential: fine-grained: 1.5 m beneath foundation	3.1E+04	5.6E+07	5.1E+07	2.5E+06	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG
		Residential: fine-grained: 2 m beneath foundation	3.2E+04	5.9E+07	5.3E+07	2.6E+06	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG
		Residential: fine-grained: 2.5 m beneath foundation	3.3E+04	6.1E+07	5.5E+07	2.7E+06	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG
		Residential: fine-grained: 3 m beneath foundation	3.5E+04	6.3E+07	5.7E+07	2.8E+06	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG
		Residential: coarse-grained: 1 m beneath foundation	4.0E+03	7.3E+06	6.8E+06	3.3E+05	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG
		Residential: coarse-grained: 1.5 m beneath foundation	4.7E+03	8.5E+06	8.0E+06	3.8E+05	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG
		Residential: coarse-grained: 2 m beneath foundation	5.3E+03	9.7E+06	9.2E+06	4.4E+05	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG
		Residential: coarse-grained: 2.5 m beneath foundation	5.9E+03	1.0E+07	1.0E+07	5.0E+05	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG
		Residential: coarse-grained: 3 m beneath foundation	6.6E+03	1.2E+07	1.1E+07	5.5E+05	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG
SV24	2024-04-18	5.0	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV26A	2024-04-18	5.0	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV26B	2024-04-18	3.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV26C	2024-04-18	2.0	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV29	2024-04-18	1.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15

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Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

mbgs - metres below ground surface (unless otherwise specified)

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>), unless otherwise specified.

**TABLE 1**  
**RESULTS OF SOIL VAPOUR ANALYSES**  
**PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE**  
**(µg/m<sup>3</sup>)**

CONSTITUENT			Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatics C6-C8	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloroethane	Naphthalene	F1 (C6-C10)	F2 (>C10-C16)
Sample Location	Sample Date	Total Well Depth (mbgs)																
<b>Guidelines<sup>a</sup>:</b>																		
		<b>Residential: fine or coarse-grained; &lt;1 m beneath foundation</b>	6.2E+01	1.1E+05	9.9E+04	4.9E+03	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG
		<b>Residential: fine-grained: 1 m beneath foundation</b>	3.0E+04	5.4E+07	4.9E+07	2.4E+06	<b>4.7E+08</b>	2.4E+07	<b>2.5E+07</b>	<b>2.5E+07</b>	NG	4.1E+06	<b>5.1E+06</b>	<b>5.1E+06</b>	1.8E+03	2.2E+04	NG	NG
		<b>Residential: fine-grained: 1.5 m beneath foundation</b>	3.1E+04	5.6E+07	5.1E+07	2.5E+06	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG
		<b>Residential: fine-grained: 2 m beneath foundation</b>	3.2E+04	5.9E+07	5.3E+07	2.6E+06	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG
		<b>Residential: fine-grained: 2.5 m beneath foundation</b>	3.3E+04	6.1E+07	<b>5.5E+07</b>	2.7E+06	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG
		<b>Residential: fine-grained: 3 m beneath foundation</b>	3.5E+04	6.3E+07	<b>5.7E+07</b>	2.8E+06	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG
		<b>Residential: coarse-grained: 1 m beneath foundation</b>	4.0E+03	7.3E+06	6.8E+06	3.3E+05	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG
		<b>Residential: coarse-grained: 1.5 m beneath foundation</b>	4.7E+03	8.5E+06	8.0E+06	3.8E+05	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG
		<b>Residential: coarse-grained: 2 m beneath foundation</b>	5.3E+03	9.7E+06	9.2E+06	4.4E+05	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG
		<b>Residential: coarse-grained: 2.5 m beneath foundation</b>	5.9E+03	1.0E+07	1.0E+07	5.0E+05	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG
		<b>Residential: coarse-grained: 3 m beneath foundation</b>	6.6E+03	1.2E+07	1.1E+07	5.5E+05	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG
SV30	2024-04-18	1.0	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV31	2024-04-19	1.0	0.99	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV32	2024-04-19	1.0	0.89	<0.75	<0.87	1.9	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV37	2024-04-19	2.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
	2024-04-19 Dup	2.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV39	2024-04-19	2.0	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024.*

The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

Dup - Duplicate Sample.

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

mbgs - metres below ground surface (unless otherwise specified)

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>), unless otherwise specified.

**TABLE 1**  
**RESULTS OF SOIL VAPOUR ANALYSES**  
**PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE**  
**(µg/m<sup>3</sup>)**

CONSTITUENT			Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatics C6-C8	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloroethane	Naphthalene	F1 (C6-C10)	F2 (>C10-C16)
Sample Location	Sample Date	Total Well Depth (mbgs)																
<b>Guidelines<sup>a</sup>:</b>																		
Residential: fine or coarse-grained; <1 m beneath foundation			6.2E+01	1.1E+05	9.9E+04	4.9E+03	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG
Residential: fine-grained: 1 m beneath foundation			3.0E+04	5.4E+07	4.9E+07	2.4E+06	<b>4.7E+08</b>	2.4E+07	<b>2.5E+07</b>	<b>2.5E+07</b>	NG	4.1E+06	<b>5.1E+06</b>	<b>5.1E+06</b>	1.8E+03	2.2E+04	NG	NG
Residential: fine-grained: 1.5 m beneath foundation			3.1E+04	5.6E+07	5.1E+07	2.5E+06	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG
Residential: fine-grained: 2 m beneath foundation			3.2E+04	5.9E+07	5.3E+07	2.6E+06	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG
Residential: fine-grained: 2.5 m beneath foundation			3.3E+04	6.1E+07	<b>5.5E+07</b>	2.7E+06	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG
Residential: fine-grained: 3 m beneath foundation			3.5E+04	6.3E+07	<b>5.7E+07</b>	2.8E+06	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG
Residential: coarse-grained: 1 m beneath foundation			4.0E+03	7.3E+06	6.8E+06	3.3E+05	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG
Residential: coarse-grained: 1.5 m beneath foundation			4.7E+03	8.5E+06	8.0E+06	3.8E+05	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG
Residential: coarse-grained: 2 m beneath foundation			5.3E+03	9.7E+06	9.2E+06	4.4E+05	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG
Residential: coarse-grained: 2.5 m beneath foundation			5.9E+03	1.0E+07	1.0E+07	5.0E+05	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG
Residential: coarse-grained: 3 m beneath foundation			6.6E+03	1.2E+07	1.1E+07	5.5E+05	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG
SV40	2024-04-19	1.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV41	2024-04-18	1.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
	2024-04-18 Dup	1.5	<0.5	1.62	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV101	2024-04-09	0.3 m below foundation	11.8	1.66	<0.87	<1.8	<15	<15	477	<15	20.0	<15	<15	<15	<0.41	<5.2	20.0	477
SV324	2024-04-09	1.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15
SV401	2024-04-19	1.5	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<0.41	<5.2	<15	<15

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024.*

The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

Dup - Duplicate Sample.

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

mbgs - metres below ground surface (unless otherwise specified)

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>), unless otherwise specified.

**TABLE 1**  
**RESULTS OF SOIL VAPOUR ANALYSES**  
**PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE**  
**(µg/m<sup>3</sup>)**

CONSTITUENT			Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatics C6-C8	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloroethane	Naphthalene	F1 (C6-C10)	F2 (>C10-C16)
Sample Location	Sample Date	Total Well Depth (mbgs)																
<b>Guidelines<sup>a</sup>:</b>																		
		<b>Residential: fine or coarse-grained; &lt;1 m beneath foundation</b>	6.2E+01	1.1E+05	9.9E+04	4.9E+03	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG
		<b>Residential: fine-grained: 1 m beneath foundation</b>	3.0E+04	5.4E+07	4.9E+07	2.4E+06	<b>4.7E+08</b>	2.4E+07	<b>2.5E+07</b>	<b>2.5E+07</b>	NG	4.1E+06	<b>5.1E+06</b>	<b>5.1E+06</b>	1.8E+03	2.2E+04	NG	NG
		<b>Residential: fine-grained: 1.5 m beneath foundation</b>	3.1E+04	5.6E+07	5.1E+07	2.5E+06	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG
		<b>Residential: fine-grained: 2 m beneath foundation</b>	3.2E+04	5.9E+07	5.3E+07	2.6E+06	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG
		<b>Residential: fine-grained: 2.5 m beneath foundation</b>	3.3E+04	6.1E+07	<b>5.5E+07</b>	2.7E+06	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG
		<b>Residential: fine-grained: 3 m beneath foundation</b>	3.5E+04	6.3E+07	<b>5.7E+07</b>	2.8E+06	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG
		<b>Residential: coarse-grained: 1 m beneath foundation</b>	4.0E+03	7.3E+06	6.8E+06	3.3E+05	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG
		<b>Residential: coarse-grained: 1.5 m beneath foundation</b>	4.7E+03	8.5E+06	8.0E+06	3.8E+05	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG
		<b>Residential: coarse-grained: 2 m beneath foundation</b>	5.3E+03	9.7E+06	9.2E+06	4.4E+05	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG
		<b>Residential: coarse-grained: 2.5 m beneath foundation</b>	5.9E+03	1.0E+07	1.0E+07	5.0E+05	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG
		<b>Residential: coarse-grained: 3 m beneath foundation</b>	6.6E+03	1.2E+07	1.1E+07	5.5E+05	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG
SV403	2024-04-19	0.95	2.08	2.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
SV404	2024-04-19	1.0	1.44	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
SV502	2024-04-19	1.2	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
	2024-04-19 Dup	1.2	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
SV505	2024-04-18	1.2	<0.5	<0.75	<0.87	<1.8	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024.*

The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

Dup - Duplicate Sample.

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

mbgs - metres below ground surface (unless otherwise specified)

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>), unless otherwise specified.

**TABLE 2**  
**RESULTS OF SOIL VAPOUR ANALYSES**  
**MATRIX GASES**  
  
(%)

Sample Location	Sample Date	CONSTITUENT Total Well Depth (mbgs)	Helium	Hydrogen	Oxygen	Nitrogen	Carbon Dioxide	Hydrogen Sulphide	Methane	Ethane	Propane	I-Butane	N-Butane	I-Pentane	N-Pentane	Hexanes	Heptanes	Octanes	Nonanes	Decanes	
			NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
SV23	2024-04-18	4.5	0.10	<0.01	20.81	78.2	0.89	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV24	2024-04-18	5.0	0.10	<0.01	19.25	78.0	2.63	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV41	2024-04-18	1.5	0.12	<0.01	20.84	78.0	1.00	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	2024-04-18 Dup	1.5	0.01	<0.01	20.86	78.2	0.90	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

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The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

Dup - Duplicate Sample.

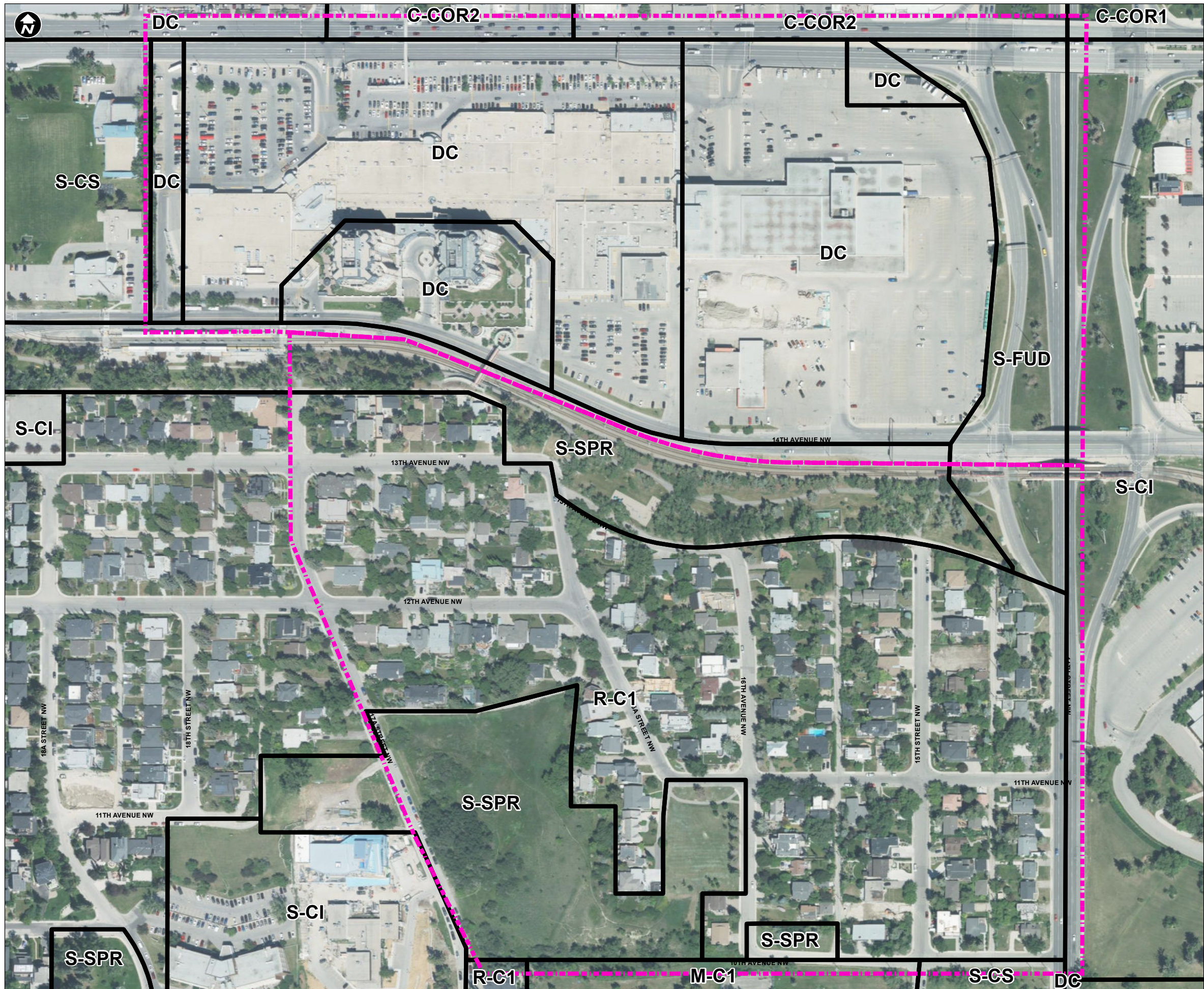
Underline - Detection limit exceeds guideline.

mbgs - metres below ground surface (unless otherwise specified)



**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in percentages (%).



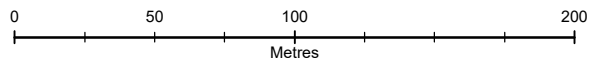
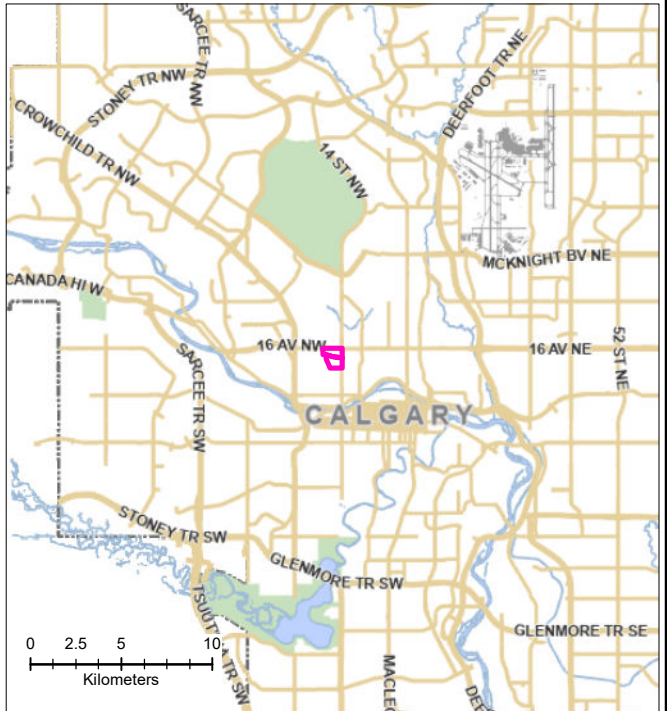


**LEGEND**

-  Site Boundary
-  City Of Calgary Zoning

**Land Use Districts:**

- R-C1 (Residential - Contextual One Dwelling)
- M-C1 (Multi-Residential - Contextual Low Profile)
- M-CG (Multi-Residential - Contextual Ground Oriented)
- C-COR1 (Commercial - Corridor 1)
- C-COR2 (Commercial - Corridor 2)
- S-SPR (Special Purpose - School, Park and Community Reserve)
- S-CI (Special Purpose - Community Institution)
- S-CS (Special Purpose - Community Service)
- S-FUD (Special Purpose - Future Urban Development)
- DC (Direct Control District)



- Notes:..
- The ArcGIS Map Service based on City of Calgary Basemap (WMASP).
  - The orthophoto based on City of Calgary Basemap (WMASP), July-August 2022.
  - Land Use District data based on City of Calgary's Open Data Portal, City Online, Base Map Data service. Downloaded March 2023.

**Site Location Map**

Hounsfield Heights And Lion's Park  
1620-14th Ave NW, Calgary, Alberta

Drawn By: JDC	Ref. No.: 10-12832
Reviewed By: MP	Date: 26-Mar-2023

**PARSONS**

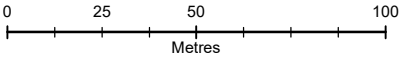
Drawing No.:  
**1**





**LEGEND**

- Grade Elevation Contour (masl) (1m)
- - - Site Boundary



Notes:  
 - The orthophoto based on City of Calgary Basemap (WMASP), July-August 2022.  
 - Elevation data based on City of Calgary's Open Data Portal, City Online, Base Map Data service. Downloaded January 2023.

**Site Topography**

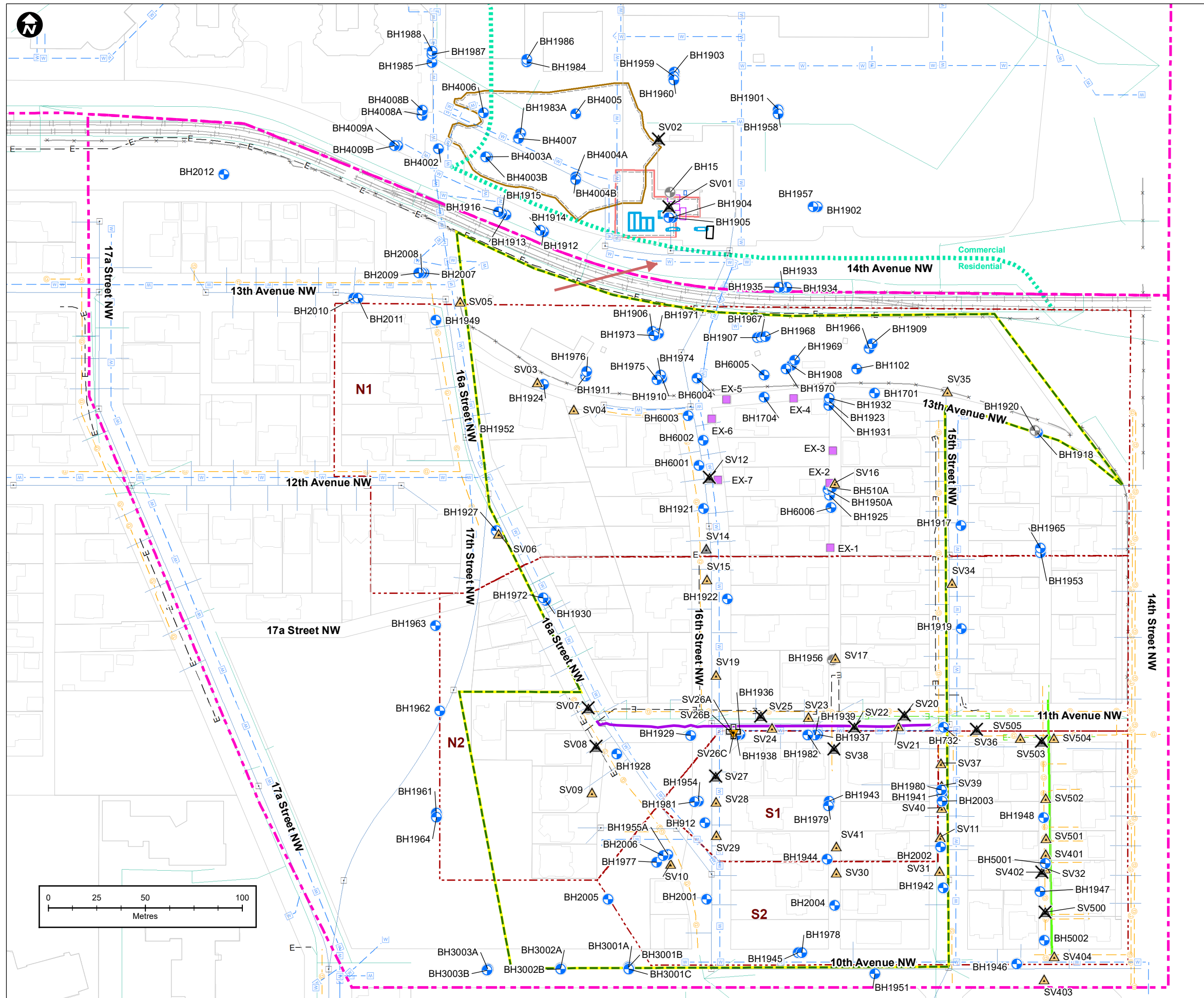
Hounsfield Heights And Lion's Park  
 1620-14th Ave NW, Calgary, Alberta

Drawn By: JDC	Ref. No.: 10-12832
Reviewed By: MP	Date: 29-Mar-2023

**PARSONS**

Drawing No.:  
**2**





**LEGEND**

- Extraction Well
- Monitoring Well
- Monitoring Well-Damaged
- ▲ Soil Vapour Probe
- ⊕ Soil Vapour Probe (Nested)
- ▲ Soil Vapour Probe-Damaged
- ✕ Soil Vapour Probe-Destroyed
- Waste Oil UST
- UST as indicated on 1963 Fire Insurance Plan
- USTs noted on a 1985 Simons-Sears Contract Drawing
- Former Facilities (Kiosk, Pump Islands, USTs) Decommissioned
- LRT Tracks
- Water
- Storm Sewer
- Sanitary Sewer
- Gas Line
- Overhead Electrical
- Underground Electrical
- Unconfirmed Electrical (Overhead or Underground)
- Tier 2 vapour inhalation pathway groundwater guideline area (N1, N2, S1, S2)
- Residential/parkland 30 m buffer
- Proposed Site Management Area (Lions Park and Hounsfield)
- Permeable Reactive Barrier (Dec. 2019)
- Former Tank Nest Excavation Area (2003)
- Former Remedial Excavation Extent (2006/2007)
- Approximate Area of Utility Trench Excavation (September)
- Site Boundary

**Notes:**

- Soil vapour wells on private property are not shown.
- The remedial excavation that took place in 1989 is not reflected on the drawing as the exact excavation limits are unknown. This area appears to be included within the subsequent 2003 excavation.
- Remedial excavations that took place in 2004 are not reflected on the drawing as the exact excavation limits are unknown. These areas appear to be included within the subsequent 2006/2007 excavation.

**References:**

- Well locations, on-site features provided as AutoCAD file by Clifton Engineering Group Inc..
- Property parcel data based on City of Calgary's Open Data Portal, City Online, Geospatial Data service. Downloaded March 2023.
- Building based on City of Calgary's Open Data Portal, City Online, Base Map Data service. Downloaded January 2023.
- Utility data based on City of Calgary's Open Data Portal (City Online, Geospatial Data service, 2023), City of Calgary Block Profiles (City Online, 2024), and private utility locate sweeps near the SV500 series conducted in December 2022.

**Site Plan**  
**Groundwater Monitoring and**  
**Soil Vapour Well Locations**

Hounsfield Heights And Lion's Park  
 1620-14th Ave NW, Calgary, Alberta

Drawn By: MR	Ref. No.: 10-12832
Reviewed By: SLD	Date: 16-May-2024
Drawing No.:	

PARSONS

3



**LEGEND**

- - - Site Boundary
- - - Proposed Site Management Area (Lions Park and Hounsfield Heights)
- Permeable Reactive Barrier (Dec. 2019)
- ▲ VAPOUR sample(s) less than applicable guideline for all analytes
- ▲ VAPOUR sample(s) exceeds guideline for any analyte (2024 sampling events)
- ▲ VAPOUR sample(s) exceeds 90% threshold for any analyte (2024 sampling events) but does not exceed the guideline

[3 mbgs] Vapour: Total depth of vapour well (mbg)

**Notes:**

- Soil vapour wells on private property are not shown.
- Nested soil vapour sample results have been adjusted for display purposes.

### Summary of Soil Vapour Analytical Results (April 2024 Sampling Event)

Hounsfield Heights And Lion's Park  
1620-14th Ave NW, Calgary, Alberta

Drawn By: MR	Ref. No.: 10-12832
Reviewed By: SLD	Date: 17-May-2024
Drawing No.:	

4

**APPENDIX A**

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**SOIL VAPOUR SAMPLING PROCEDURES**

## **APPENDIX A LEAK TESTING AND SAMPLING PROCEDURES**

### **HEALTH AND SAFETY**

Consistent with Parsons' policy and its client's policy, the completed work was carried out consistent with a site-specific health and safety plan. This plan, as a minimum, complied with provincial requirements as well as Parsons and its client's guidelines, whichever were more stringent.

### **APPROVALS**

Prior to doing any site work, approval to proceed was obtained from the client. When monitoring or investigative work was required on public or third-party lands, the necessary approvals were obtained from the municipality or the property owner, respectively, prior to commencing any work.

### **LEAK TESTING PROCEDURE**

Prior to sampling, leak testing is conducted to evaluate the integrity of the monitoring well seal and sampling equipment. The leak testing is conducted a minimum of once per calendar year, and in addition, 10% of soil vapour wells sampled are leak tested during each soil vapour sampling event.

Soil vapour wells are leak tested immediately before sample collection. Leak testing consisted of placing a shroud with two valves (one with a connector that can be attached to the well and the other to the empty space within the shroud) over each well and flooding it with 99.999% Helium via the valve to the open space. The helium canister was connected to the shroud and the valve was opened fully for three seconds allowing the helium to saturate the space.

Using an SKC pump and lung sampler, the pump was connected to the well via tubing connected inside the shroud and run for five minutes at a rate of 70 millilitres (mL) per minute to fill one clean new tedlar bag connected inside the lung sampler. A separate clean new tedlar bag was used for each well.

The pump was turned off and the well was closed. The tedlar bag was then removed from the lung sampler, and the end of the helium detector was inserted inside to take a reading to ensure that less than 5,000 parts per million (ppm) of helium had entered the bag through a leak in the well.

As a check that the helium detector was working, the helium detector end was placed in the shroud containing helium to ensure helium remained in the casing during the test. This was always confirmed; however, no numbers from this were recorded.

## **APPENDIX A**

### **LEAK TESTING AND SAMPLING PROCEDURES**

The shroud was then removed from the casing to release the helium to the atmosphere, and it was unscrewed/detached from the closed well.

As required, the bentonite seals were re-hydrated if leak testing was outside the acceptable range. Soil vapour samples were collected once the pre-sampling leak test indicated that the integrity of the soil vapour monitoring wells was adequate.

#### **SOIL VAPOUR SAMPLING PROCEDURE**

Soil vapour sampling and leak testing were completed in accordance with the guidelines outlined in the CCME Guidance Manual for Environmental Site Characterization in Support of Environmental and Human Health Risk Assessment, Volume 3 (2016).

Soil vapour samples are collected using stainless steel vacuum canisters (1.4 L Summa canisters) provided by Bureau Veritas. The vacuum within each canister is checked prior to mobilization to the field. A shut-in leak test is performed to verify that leakage within the sampling train is within acceptable limits. The sampling train is then only used if the shut-in leak testing is found to be within the acceptable limits. The soil vapour wells were purged for 5 minutes using an air sampling pump prior to sampling. Following purging, the well shut-off valve is closed prior to sampling to allow any vacuum to dissipate. For sampling, the canisters are connected to the soil vapour monitoring well with a flow controller wherein the sample is collected directly into the canister over a pre-determined time interval by opening the valve at the wellhead. The sample is collected until the vacuum within the canister is depleted. Collected samples are then shipped to the laboratory utilizing the appropriate chain of custody documentation. A duplicate sample was collected subsequently once every 10 samples.

**APPENDIX B**

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**SOIL VAPOUR WELL INTEGRITY INSPECTION, LEAK TESTING, AND  
SAMPLING RECORD**



TABLE B-1

## SOIL VAPOUR WELL INTEGRITY INSPECTION AND LEAK TESTING

BH ID	Date of Visual Inspection (yyyy-mm-dd)	Well Condition	Date of Leak Test (yyyy-mm-dd)	Test Results (Helium in % or ppm) <sup>a</sup>	Date of Re-Test (yyyy-mm-dd)	Re-Test Results (Helium in % or ppm) <sup>a</sup>	Leak Test Results
SV09	2024-04-10	Good	2024-04-10	600	-	-	Pass
SV10	2024-04-10	Repaired	2024-04-10	4.6%	2024-04-10	600	Pass
SV11	2024-04-12	Good	2024-04-12	0	-	-	Pass
SV21	2024-04-10	Good	2024-04-10	25	-	-	Pass
SV23	2024-04-10	Good	2024-04-10	350	-	-	Pass
SV24	2024-04-10	Good	2024-04-10	0	-	-	Pass
SV26A	2024-04-10	Good	2024-04-10	0	-	-	Pass
SV26B	2024-04-10	Good	2024-04-10	225	-	-	Pass
SV26C	2024-04-10	Good	2024-04-10	1300	-	-	Pass
SV28	2024-04-15	Repaired	2024-04-15	0	-	-	Pass
SV29	2024-04-10	Good	2024-04-10	0	-	-	Pass
SV30	2024-04-15	Good	2024-04-15	200	-	-	Pass
SV31	2024-04-12	Good	2024-04-12	250	-	-	Pass
SV32	2024-04-15	Good	2024-04-15	0	-	-	Pass
SV37	2024-04-12	Good	2024-04-12	0	-	-	Pass
SV39	2024-04-12	Good	2024-04-12	825	-	-	Pass
SV40	2024-04-12	Good	2024-04-12	0	-	-	Pass
SV41	2024-04-15	Good	2024-04-15	0	-	-	Pass
SV101	2024-04-09	Good	2024-04-09	2500	-	-	Pass
SV324	2024-04-09	Good	2024-04-09	2.5%	2024-04-09	2500	Pass
SV401	2024-04-15	Good	2024-04-15	0	-	-	Pass
SV403	2024-04-15	Good	2024-04-15	0	-	-	Pass
SV404	2024-04-15	Good	2024-04-15	50	-	-	Pass
SV501	2024-04-15	Saturated with Water	-	-	-	-	-
SV502	2024-04-15	Good	2024-04-15	0	-	-	Pass
SV503	2024-04-12	Destroyed	-	-	-	-	-
SV504	2024-04-12	Good	2024-04-12	0	-	-	Pass
SV505	2024-04-15	Good	2024-04-15	0	-	-	Pass

a - &gt;1% or &gt; 10,000 ppm = fail.

ND - Not detected.

\*.- Not applicable.

Note: Each soil vapour monitoring well sampled must pass a leak test a minimum of once per calendar year.

A minimum of 10% of soil vapour monitoring wells sampled are leak tested during each sampling event.

**TABLE B-2**  
**SAMPLING FIELD RECORDS**

BH ID	Sampled (Yes/No)	Date (yyyy-mm-dd)	Canister ID	Flow Regulator ID	Time Well Purged Before Sampling (min)	Purging Flow Rate (mL/min)	Start Time (hh:mm)	End Time (hh:mm)	Duration (min)
SV09	Yes	2024-04-18	12000	F100045	5	250	10:50	11:10	20
SV10	Yes	2024-04-18	10058	F200074	5	250	10:12	10:33	21
SV11	Yes	2024-04-19	00195	F200061	5	250	14:17	14:39	22
SV21	Yes	2024-04-18	12123	F200094	5	250	14:10	14:30	20
SV23	Yes	2024-04-18	12124	1	5	250	12:40	13:00	20
SV24	Yes	2024-04-18	6532	F100129	5	250	12:30	12:49	19
SV26A	Yes	2024-04-18	12004	F0020	5	250	11:30	11:47	17
SV26B	Yes	2024-04-18	9441	F200034	5	250	11:47	12:04	17
SV26C	Yes	2024-04-18	6823	F100043	5	250	11:55	12:14	19
SV28	No	-	-	-	-	-	-	-	-
SV29	Yes	2024-04-18	11894	F200056	5	250	10:30	10:48	18
SV30	Yes	2024-04-18	12126	No ID Number	5	250	13:20	13:40	20
SV31	Yes	2024-04-19	00121	G00014	5	250	14:29	14:56	27
SV32	Yes	2024-04-19	9209	F100122	5	250	10:01	10:25	24
SV37	Yes	2024-04-19	9438	F100035	5	250	13:31	13:48	17
Dup-04 (SV37)	Yes	2024-04-19	11993	F200067	-	-	13:31	13:49	18
SV39	Yes	2024-04-19	12127	G00017	5	250	12:47	13:11	24
SV40	Yes	2024-04-19	6441	F200105	5	250	12:39	13:02	23
SV41	Yes	2024-04-18	9050	FC10026	6	250	13:15	13:35	20
Dup-02 (SV41)	Yes	2024-04-18	12006	F100046	-	-	13:15	13:35	20
SV101	Yes	2024-04-09	00133	5200021	5	250	16:29	16:49	20
SV324	Yes	2024-04-09	6448	F100022	5	250	17:34	17:52	18
SV401	Yes	2024-04-19	12011	G00015	5	250	9:51	10:13	22
SV403	Yes	2024-04-19	12070	F000012	5	250	10:47	11:02	15
SV404	Yes	2024-04-19	00136	F20002	5	250	10:58	11:23	25
SV501	No	-	-	-	-	-	-	-	-
SV502	Yes	2024-04-19	12038	F200022	5	250	9:15	9:34	19
Dup-03 (SV502)	Yes	2024-04-19	12134	0006	-	-	9:15	9:35	20
SV503	No	-	-	-	-	-	-	-	-
SV504	No	-	-	-	-	-	-	-	-
SV505	Yes	2024-04-18	0:00	F100042	5	250	14:50	15:11	21

"-" - Not applicable.

NR - Not recorded.

Note: Sampling flow rate set to 20 mL/min.

**APPENDIX C**

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**GUIDELINE SUMMARY**

**TABLE C-1**  
**SUMMARY OF SOIL VAPOUR GUIDELINES**

Reference	Land Use	Grain Size	Depth (cm)	Benzene	Toluene	Ethylbenzene	Xylenes	1,2-DCA	Naphthalene	F1 Aliphatic C6-C8	F1 Aliphatic >C8-C10	F1 Aromatic >C8-C10	F2 Aliphatic >C10-C12	F2 Aromatic >C10-C12	F2 Aliphatic >C12-C16	F2 Aromatic >C12-C16
Intrinsic, 2024, Table 6.1	Residential	Fine	<100(1)	6.25E+01	1.13E+05	9.96E+04	4.91E+03	3.85E+01	4.53E+02	9.15E+05	4.81E+04	8.13E+03	5.00E+04	1.00E+04	5.00E+04	1.00E+04
			100	3.03E+04	5.48E+07	4.91E+07	2.41E+06	1.80E+03	2.28E+04	4.71E+08	2.47E+07	4.19E+06	2.57E+07	5.15E+06	2.57E+07	5.15E+06
			150	3.15E+04	5.69E+07	5.13E+07	2.51E+06	1.86E+03	2.41E+04	5.02E+08	2.63E+07	4.45E+06	2.74E+07	5.48E+06	2.74E+07	5.48E+06
			200	3.27E+04	5.91E+07	5.34E+07	2.62E+06	1.92E+03	2.54E+04	5.32E+08	2.79E+07	4.72E+06	2.90E+07	5.81E+06	2.90E+07	5.81E+06
			250	3.38E+04	6.12E+07	5.56E+07	2.72E+06	1.98E+03	2.66E+04	5.62E+08	2.95E+07	4.99E+06	3.07E+07	6.14E+06	3.07E+07	6.14E+06
			300	3.50E+04	6.33E+07	5.78E+07	2.82E+06	2.04E+03	2.79E+04	5.92E+08	3.11E+07	5.25E+06	3.23E+07	6.46E+06	3.23E+07	6.46E+06
			350	3.62E+04	6.55E+07	6.00E+07	2.93E+06	2.10E+03	2.91E+04	6.22E+08	3.26E+07	5.52E+06	3.40E+07	6.79E+06	3.40E+07	6.79E+06
			400	3.73E+04	6.76E+07	6.22E+07	3.03E+06	2.16E+03	3.04E+04	6.52E+08	3.42E+07	5.79E+06	3.56E+07	7.12E+06	3.56E+07	7.12E+06
			450	3.85E+04	6.97E+07	6.44E+07	3.13E+06	2.22E+03	3.17E+04	6.82E+08	3.58E+07	6.05E+06	3.72E+07	7.45E+06	3.72E+07	7.45E+06
			500	3.97E+04	7.18E+07	6.65E+07	3.24E+06	2.28E+03	3.29E+04	7.12E+08	3.74E+07	6.32E+06	3.89E+07	7.78E+06	3.89E+07	7.78E+06
			550	4.08E+04	7.40E+07	6.87E+07	3.34E+06	2.34E+03	3.42E+04	7.42E+08	3.90E+07	6.59E+06	4.05E+07	8.11E+06	4.05E+07	8.11E+06
600	4.20E+04	7.61E+07	7.09E+07	3.44E+06	2.40E+03	3.54E+04	7.72E+08	4.05E+07	6.86E+06	4.22E+07	8.44E+06	4.22E+07	8.44E+06			
Intrinsic, 2024, Table 6.2	Residential	Coarse	<100(1)	6.25E+01	1.13E+05	9.96E+04	4.91E+03	3.85E+01	4.53E+02	9.15E+05	4.81E+04	8.13E+03	5.00E+04	1.00E+04	5.00E+04	1.00E+04
			100	4.08E+03	7.38E+06	6.85E+06	3.33E+05	2.34E+02	3.40E+03	7.38E+07	3.88E+06	6.56E+05	4.03E+06	8.07E+05	4.03E+06	8.07E+05
			150	4.71E+03	8.54E+06	8.04E+06	3.89E+05	2.67E+02	4.09E+03	9.02E+07	4.73E+06	8.01E+05	4.93E+06	9.85E+05	4.93E+06	9.85E+05
			200	5.35E+03	9.70E+06	9.22E+06	4.45E+05	2.99E+02	4.77E+03	1.07E+08	5.59E+06	9.46E+05	5.82E+06	1.16E+06	5.82E+06	1.16E+06
			250	5.98E+03	1.09E+07	1.04E+07	5.02E+05	3.32E+02	5.46E+03	1.23E+08	6.45E+06	1.09E+06	6.71E+06	1.34E+06	6.71E+06	1.34E+06
			300	6.61E+03	1.20E+07	1.16E+07	5.58E+05	3.64E+02	6.14E+03	1.39E+08	7.31E+06	1.24E+06	7.61E+06	1.52E+06	7.61E+06	1.52E+06
			350	7.25E+03	1.32E+07	1.28E+07	6.14E+05	3.96E+02	6.83E+03	1.56E+08	8.17E+06	1.38E+06	8.50E+06	1.70E+06	8.50E+06	1.70E+06
			400	7.88E+03	1.43E+07	1.40E+07	6.70E+05	4.29E+02	7.51E+03	1.72E+08	9.03E+06	1.53E+06	9.39E+06	1.88E+06	9.39E+06	1.88E+06
			450	8.52E+03	1.55E+07	1.52E+07	7.26E+05	4.61E+02	8.20E+03	1.88E+08	9.89E+06	1.67E+06	1.03E+07	2.06E+06	1.03E+07	2.06E+06
			500	9.15E+03	1.66E+07	1.63E+07	7.83E+05	4.94E+02	8.88E+03	2.05E+08	1.07E+07	1.82E+06	1.12E+07	2.24E+06	1.12E+07	2.24E+06
			550	9.79E+03	1.75E+07	1.75E+07	8.39E+05	5.26E+02	9.57E+03	2.21E+08	1.16E+07	1.96E+06	1.21E+07	2.41E+06	1.21E+07	2.41E+06
600	1.04E+04	1.87E+07	1.87E+07	8.95E+05	5.58E+02	1.03E+04	2.37E+08	1.25E+07	2.11E+06	1.30E+07	2.59E+06	1.30E+07	2.59E+06			

1234 - Highlighted value indicates calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

(1) - Based on default attenuation coefficient of 0.01 (AEP 2022b).

**TABLE C-1**  
**SUMMARY OF SOIL VAPOUR GUIDELINES**

Reference	Land Use	Grain Size	Depth (cm)	Benzene	Toluene	Ethylbenzene	Xylenes	1,2-DCA	Naphthalene	F1 Aliphatic C6-C8	F1 Aliphatic >C8-C10	F1 Aromatic >C8-C10	F2 Aliphatic >C10-C12	F2 Aromatic >C10-C12	F2 Aliphatic >C12-C16	F2 Aromatic >C12-C16
Intrinsic, 2024, Table 6.3	Commercial	Fine	<100(1)	2.28E+02	4.11E+05	3.63E+05	1.79E+04	1.40E+02	1.65E+03	3.33E+06	1.75E+05	2.96E+04	1.82E+05	3.64E+04	1.82E+05	3.64E+04
			100	3.16E+05	5.72E+08	5.20E+08	2.54E+07	1.84E+04	2.45E+05	5.06E+09	2.66E+08	4.50E+07	2.77E+08	5.53E+07	2.77E+08	5.53E+07
			150	3.28E+05	5.93E+08	5.41E+08	2.64E+07	1.90E+04	2.57E+05	5.36E+09	2.81E+08	4.76E+07	2.93E+08	5.85E+07	2.93E+08	5.85E+07
			200	3.39E+05	6.14E+08	5.62E+08	2.75E+07	1.96E+04	2.69E+05	5.65E+09	2.97E+08	5.02E+07	3.09E+08	6.18E+07	3.09E+08	6.18E+07
			250	3.51E+05	6.35E+08	5.84E+08	2.85E+07	2.02E+04	2.82E+05	5.95E+09	3.12E+08	5.28E+07	3.25E+08	6.50E+07	3.25E+08	6.50E+07
			300	3.62E+05	6.56E+08	6.05E+08	2.95E+07	2.07E+04	2.94E+05	6.25E+09	3.28E+08	5.54E+07	3.41E+08	6.82E+07	3.41E+08	6.82E+07
			350	3.74E+05	6.77E+08	6.27E+08	3.05E+07	2.13E+04	3.07E+05	6.54E+09	3.43E+08	5.81E+07	3.57E+08	7.14E+07	3.57E+08	7.14E+07
			400	3.85E+05	6.98E+08	6.48E+08	3.15E+07	2.19E+04	3.19E+05	6.84E+09	3.59E+08	6.07E+07	3.73E+08	7.47E+07	3.73E+08	7.47E+07
			450	3.97E+05	7.19E+08	6.70E+08	3.25E+07	2.25E+04	3.31E+05	7.13E+09	3.74E+08	6.33E+07	3.90E+08	7.79E+07	3.90E+08	7.79E+07
			500	4.08E+05	7.40E+08	6.91E+08	3.36E+07	2.31E+04	3.44E+05	7.43E+09	3.90E+08	6.59E+07	4.06E+08	8.11E+07	4.06E+08	8.11E+07
			600	4.20E+05	7.61E+08	7.12E+08	3.46E+07	2.37E+04	3.56E+05	7.72E+09	4.05E+08	6.86E+07	4.22E+08	8.44E+07	4.22E+08	8.44E+07
Intrinsic, 2024, Table 6.4	Commercial	Coarse	<100(1)	2.28E+02	4.11E+05	3.63E+05	1.79E+04	1.40E+02	1.65E+02	3.33E+06	1.75E+05	2.96E+04	1.82E+05	3.64E+04	1.82E+05	3.64E+04
			100	4.31E+04	7.81E+07	7.22E+07	3.51E+06	2.49E+03	3.56E+04	7.70E+08	4.04E+07	6.84E+06	4.21E+07	8.41E+06	4.21E+07	8.41E+06
			150	4.93E+04	8.94E+07	8.38E+07	4.06E+06	2.81E+03	4.24E+04	9.31E+08	4.89E+07	8.26E+06	5.08E+07	1.02E+07	5.08E+07	1.02E+07
			200	5.56E+04	1.01E+08	9.55E+07	4.62E+06	3.12E+03	4.91E+04	1.09E+09	5.73E+07	9.69E+06	5.96E+07	1.19E+07	5.96E+07	1.19E+07
			250	6.18E+04	1.12E+08	1.07E+08	5.17E+06	3.44E+03	5.58E+04	1.25E+09	6.57E+07	1.11E+07	6.84E+07	1.37E+07	6.84E+07	1.37E+07
			300	6.80E+04	1.24E+08	1.19E+08	5.72E+06	3.76E+03	6.26E+04	1.41E+09	7.42E+07	1.25E+07	7.72E+07	1.54E+07	7.72E+07	1.54E+07
			350	7.43E+04	1.35E+08	1.30E+08	6.27E+06	4.08E+03	6.93E+04	1.57E+09	8.26E+07	1.40E+07	8.59E+07	1.72E+07	8.59E+07	1.72E+07
			400	8.05E+04	1.46E+08	1.42E+08	6.83E+06	4.40E+03	7.60E+04	1.73E+09	9.10E+07	1.54E+07	9.47E+07	1.89E+07	9.47E+07	1.89E+07
			450	8.67E+04	1.58E+08	1.54E+08	7.38E+06	4.72E+03	8.28E+04	1.89E+09	9.95E+07	1.68E+07	1.03E+08	2.07E+07	1.03E+08	2.07E+07
			500	9.30E+04	1.69E+08	1.65E+08	7.93E+06	5.03E+03	8.95E+04	2.06E+09	1.08E+08	1.82E+07	1.12E+08	2.25E+07	1.12E+08	2.25E+07
			600	9.92E+04	1.80E+08	1.77E+08	8.48E+06	5.35E+03	9.62E+04	2.22E+09	1.16E+08	1.97E+07	1.21E+08	2.42E+07	1.21E+08	2.42E+07

1234 - Highlighted value indicates calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

(1) - Based on default attenuation coefficient of 0.01 (AEP 2022b).

**APPENDIX D**

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**HISTORICAL SOIL VAPOUR TABLES**

TABLE D-1  
SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA  
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE  
(µg/m<sup>3</sup>)

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloro-ethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	
<b>Guidelines<sup>a</sup>:</b>																								
Residential: fine or coarse-grained; <1 m beneath foundation					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG	
Residential: fine-grained: 1 m beneath foundation					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG	
Residential: fine-grained: 1.5 m beneath foundation					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG	
Residential: fine-grained: 2 m beneath foundation					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG	
Residential: fine-grained: 2.5 m beneath foundation					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG	
Residential: fine-grained: 3 m beneath foundation					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG	
Residential: coarse-grained: 1 m beneath foundation					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG	
Residential: coarse-grained: 1.5 m beneath foundation					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG	
Residential: coarse-grained: 2 m beneath foundation					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG	
Residential: coarse-grained: 2.5 m beneath foundation					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG	
Residential: coarse-grained: 3 m beneath foundation					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG	
SV01	4.5	2022-06-27		Commercial	<0.50	6.56	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
SV07	5.0	2022-10-01		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
SV08	4.0	2022-02-14		Residential	1.09	<0.75	<0.87	<2.2	-	24	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	24	23	<15	
		2022-02-14	Dup		1.05	<0.75	<0.87	<2.2	-	23	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	23	22	<15	
		2022-09-30		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-09-30	Dup		<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
SV09	4.0	2022-02-14		Residential	0.93	<0.75	<0.87	<2.2	-	18	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	18	17	<15	
		2022-09-30		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-05-10		Residential	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	7.6	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-05-10	Dup		<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-08-28		Residential	0.41	0.54	<0.43	<1.3	<5.0	<5.0	<5.0	14.7	5.9	-	<5.0	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
2024-04-18		Residential	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15		
SV10	1.0	2022-02-10		Residential	1.02	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-09-26		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-01-25		Residential	<0.64	1.21	<0.87	<2.2	-	35	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-08-30		Residential	0.51	0.62	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2023-08-30	Dup		<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
2024-04-18		Residential	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15		
SV11	1.5	2022-02-17		Residential	1.66	<0.75	<0.87	<2.2	-	27	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	27	25	<15	
		2022-10-06		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-01-23		Residential	<0.64	<0.75	<0.87	<2.2	-	25	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-08-30		Residential	1.38	0.83	<0.43	<1.3	<5.0	5.3	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-19		Residential	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024*. The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.

**TABLE D-1**  
**SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA**  
**PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE**  
**(µg/m<sup>3</sup>)**

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloroethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16		
<b>Guidelines<sup>a</sup>:</b>																									
<b>Residential: fine or coarse-grained; &lt;1 m beneath foundation</b>					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG		
<b>Residential: fine-grained: 1 m beneath foundation</b>					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG		
<b>Residential: fine-grained: 1.5 m beneath foundation</b>					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG		
<b>Residential: fine-grained: 2 m beneath foundation</b>					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG		
<b>Residential: fine-grained: 2.5 m beneath foundation</b>					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG		
<b>Residential: fine-grained: 3 m beneath foundation</b>					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG		
<b>Residential: coarse-grained: 1 m beneath foundation</b>					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG		
<b>Residential: coarse-grained: 1.5 m beneath foundation</b>					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG		
<b>Residential: coarse-grained: 2 m beneath foundation</b>					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG		
<b>Residential: coarse-grained: 2.5 m beneath foundation</b>					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG		
<b>Residential: coarse-grained: 3 m beneath foundation</b>					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG		
SV20	3.5	2022-02-15		Residential	54.9	1.66	5.21	10.7	-	3001	33	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	3030	2960	<15		
		2022-09-28			0.80	1.92	<0.87	<1.8	-	29	404	1138	<15	<15	-	<15	<15	<15	<15	<0.41	<5.2	433	430	1140	
SV21	3.5	2022-02-15		Residential	15.2	0.75	1.43	3.0	-	44	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	44	24	<15		
		2022-09-28			<0.50	<0.75	<0.87	<1.8	-	21	<15	<15	<15	<15	-	<15	<15	<15	<15	<0.41	<5.2	21	21	<15	
		2023-01-24			<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-09-05			0.82	1.15	<0.43	<1.3	<5.0	<5.0	<5.0	9.1	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-18			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV22	4.0	2022-02-15		Residential	1.15	<0.75	<0.87	<2.2	-	25	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	25	24	<15		
		2022-09-28			1.63	4.97	<0.87	2.1	-	40	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	40	31	<15		
SV23	4.5	2022-02-15		Residential	1.12	<0.75	<0.87	<2.2	-	22	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	22	21	<15		
		2022-09-28			<0.50	<0.75	<0.87	<1.8	-	16	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	16	16	<15		
		2023-01-25			<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-		
		2023-09-08			0.43	0.49	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2024-04-18			9.46	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV24	5.0	2022-02-10		Residential	0.86	1.02	<0.87	<2.2	-	<15	17	68	<15	<15	-	<15	<15	<15	<0.41	<5.2	17	15	68		
		2022-09-28			<0.50	<0.75	<0.87	<1.8	-	19	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	19	19	<15		
		2023-01-25			<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-		
		2023-08-29			<0.32	0.40	<0.43	<1.3	<5.0	<5.0	<5.0	6.2	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2024-04-18			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV25	5.0	2022-02-10		Residential	1.12	2.00	<0.87	<2.2	-	100	768	291	<15	<15	-	<15	<15	<15	<0.41	<5.2	868	864	291		
		2022-09-28			0.70	1.47	<0.87	<1.8	-	2781	429	241	<15	<15	-	<15	<15	<15	<0.41	<5.2	3210	3210	241		

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024*. The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.



TABLE D-1  
SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA  
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE  
(µg/m<sup>3</sup>)

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloro-ethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	
<b>Guidelines<sup>a</sup>:</b>																								
Residential: fine or coarse-grained; <1 m beneath foundation					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG	
Residential: fine-grained: 1 m beneath foundation					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG	
Residential: fine-grained: 1.5 m beneath foundation					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG	
Residential: fine-grained: 2 m beneath foundation					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG	
Residential: fine-grained: 2.5 m beneath foundation					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG	
Residential: fine-grained: 3 m beneath foundation					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG	
Residential: coarse-grained: 1 m beneath foundation					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG	
Residential: coarse-grained: 1.5 m beneath foundation					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG	
Residential: coarse-grained: 2 m beneath foundation					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG	
Residential: coarse-grained: 2.5 m beneath foundation					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG	
Residential: coarse-grained: 3 m beneath foundation					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG	
SV26A	5.0	2022-02-11		Residential	1.34	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-10-01			<0.50	<0.75	<0.87	<1.8	-	31	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	31	31	<15	
		2023-01-25			<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-05-05			<0.32	0.76	<0.43	<1.3	<5.0	<5.0	7.5	42.8	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-08-29			0.36	0.87	<0.43	<1.3	<5.0	10.7	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-18			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV26B	3.5	2022-02-11		Residential	319	7.61	33.9	69.0	-	27350	360	<15	<15	102	-	<15	<15	<15	<0.41	<5.2	27800	27400	<15	
		2022-10-01			<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-01-25			<0.64	<0.75	<0.87	<2.2	-	26	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-01-25	Dup		<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-05-05			0.50	1.22	<0.43	<1.3	<5.0	5.0	11.1	57.3	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-08-29			0.70	2.11	0.67	2.9	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
SV26C	2.0	2022-02-11		Residential	0.93	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-10-01			<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-01-25			<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-05-05			<0.32	0.74	<0.43	<1.3	<5.0	<5.0	5.4	29.6	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
SV26C	2.0	2023-08-29			0.63	1.67	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2024-04-18			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15	

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mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1  
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PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE  
(µg/m<sup>3</sup>)

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloro-ethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	
<b>Guidelines<sup>a</sup>:</b>																								
Residential: fine or coarse-grained; <1 m beneath foundation					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG	
Residential: fine-grained: 1 m beneath foundation					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG	
Residential: fine-grained: 1.5 m beneath foundation					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG	
Residential: fine-grained: 2 m beneath foundation					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG	
Residential: fine-grained: 2.5 m beneath foundation					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG	
Residential: fine-grained: 3 m beneath foundation					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG	
Residential: coarse-grained: 1 m beneath foundation					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG	
Residential: coarse-grained: 1.5 m beneath foundation					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG	
Residential: coarse-grained: 2 m beneath foundation					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG	
Residential: coarse-grained: 2.5 m beneath foundation					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG	
Residential: coarse-grained: 3 m beneath foundation					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG	
SV27	3.0	2022-02-10		Residential	13.6	1.17	1.17	2.3	-	933	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	933	915	<15	
		2022-09-26		Residential	1.66	3.2	<0.87	<1.8	-	69	22	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	91	86	<15
SV28	2.5	2022-02-10		Residential	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-09-26		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-01-25		Residential	<0.64	<0.75	<0.87	<2.2	-	22	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-08-30		Residential	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
SV29	1.5	2022-02-10		Residential	<0.64	1.06	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-09-26		Residential	<0.50	<0.75	<0.87	<1.8	-	27	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	27	27	<15	
		2023-01-25		Residential	<0.64	<0.75	<0.87	<2.2	-	19	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-08-30		Residential	0.59	0.74	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-18		Residential	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV30	1.0	2022-02-16		Residential	2.49	<0.75	<0.87	<2.2	-	49	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	49	47	<15	
		2022-10-02		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-08-28		Residential	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2024-04-18		Residential	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV31	1.0	2022-02-17		Residential	1.34	<0.75	<0.87	<2.2	-	21	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	21	20	<15	
		2022-10-03		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-10-03	Dup	Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-01-23		Residential	<0.64	<0.75	<0.87	<2.2	-	<15	149	556	26	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-09-06		Residential	1.21	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2024-04-18		Residential	0.99	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15

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NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1  
SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA  
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE  
(µg/m<sup>3</sup>)

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloro-ethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	
<b>Guidelines<sup>a</sup>:</b>																								
Residential: fine or coarse-grained; <1 m beneath foundation					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG	
Residential: fine-grained: 1 m beneath foundation					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG	
Residential: fine-grained: 1.5 m beneath foundation					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG	
Residential: fine-grained: 2 m beneath foundation					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG	
Residential: fine-grained: 2.5 m beneath foundation					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG	
Residential: fine-grained: 3 m beneath foundation					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG	
Residential: coarse-grained: 1 m beneath foundation					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG	
Residential: coarse-grained: 1.5 m beneath foundation					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG	
Residential: coarse-grained: 2 m beneath foundation					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG	
Residential: coarse-grained: 2.5 m beneath foundation					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG	
Residential: coarse-grained: 3 m beneath foundation					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG	
SV32	1.0	2022-02-12		Residential	2.84	<0.75	<0.87	<2.2	-	43	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	43	40	<15	
		2022-05-25			<b>1790</b>	1910	749	835	-	<b>3750000</b>	14200	<15	<15	<15	326000	-	12200	1540	<15	<0.41	100	4100000	4090000	3080
		2022-06-27			<b>1890</b>	3540	392	2000	-	55219	816	<15	<15	<15	7259	-	197.86	<15	<15	<0.41	10	63500	55700	<15
		2022-10-05		Dup	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2023-01-24			<0.64	<0.75	<0.87	<2.2	-	173	<15	<15	<15	<15	-	<15	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-05-05			<0.32	0.50	<0.43	<1.3	<5.0	<5.0	<5.0	6.9	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-09-07			0.34	0.48	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2023-12-06			1.15	0.64	6.88	33.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	16.9	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-19			0.89	<0.75	<0.87	1.9	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
		SV36	3.0	2022-02-15		Residential	0.89	<0.75	<0.87	<2.2	-	22	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	22	21
2022-09-30					<0.50	<0.75	<0.87	<1.8	-	68	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	68	68	<15	
2023-01-24					<0.64	<0.75	<0.87	<2.2	-	46	4276	16119	1012	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
2023-01-30					<0.64	1.7	2.69	3	-	212	2018	1524	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
SV37	2.5	2022-02-17		Residential	3.10	0.87	<0.87	<2.2	-	33	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	33	29	<15	
		2022-09-30			<0.50	<0.75	<0.87	<1.8	-	286	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	286	286	<15	
		2023-01-24			<0.64	<0.75	<0.87	<2.2	-	95	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-08-30			0.55	0.41	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2024-04-19			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15	
2024-04-19		Dup	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15		

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024*. The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1  
SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA  
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE  
(µg/m<sup>3</sup>)

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloroethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16
<b>Guidelines<sup>a</sup>:</b>																							
Residential: fine or coarse-grained; <1 m beneath foundation					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG
Residential: fine-grained: 1 m beneath foundation					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG
Residential: fine-grained: 1.5 m beneath foundation					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG
Residential: fine-grained: 2 m beneath foundation					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG
Residential: fine-grained: 2.5 m beneath foundation					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG
Residential: fine-grained: 3 m beneath foundation					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG
Residential: coarse-grained: 1 m beneath foundation					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG
Residential: coarse-grained: 1.5 m beneath foundation					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG
Residential: coarse-grained: 2 m beneath foundation					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG
Residential: coarse-grained: 2.5 m beneath foundation					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG
Residential: coarse-grained: 3 m beneath foundation					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG
SV38	4.0	2022-02-16		Residential	10.2	0.90	<0.87	<2.2	-	205	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	205	194	<15
		2022-10-02		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
SV39	2.0	2022-02-17		Residential	2.75	<0.75	<0.87	<2.2	-	30	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	30	27	<15
		2022-02-17	Dup	Residential	2.75	<0.75	<0.87	<2.2	-	28	<15	59	<15	<15	-	<15	<15	<15	<0.41	<5.2	28	25	59
		2022-09-30		Residential	<0.50	<0.75	<0.87	<1.8	-	513	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	513	513	<15
		2023-01-23		Residential	<0.64	<0.75	<0.87	<2.2	-	77	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-08-30		Residential	17.4	4.10	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-19		Residential	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV40	1.5	2022-02-17		Residential	0.96	<0.75	<0.87	<2.2	-	21	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	21	20	<15
		2022-10-06		Residential	0.51	<0.75	<0.87	<1.8	-	21	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	21	20	<15
		2023-01-23		Residential	<0.64	<0.75	<0.87	<2.2	-	36	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-08-30		Residential	0.33	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	7.5	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-19		Residential	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV41	1.5	2022-02-16		Residential	5.65	<0.75	<0.87	<2.2	-	138	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	138	132	<15
		2022-10-02		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2023-05-10		Residential	0.33	0.68	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-08-28		Residential	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-18		Residential	<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
		2024-04-18	Dup	Residential	<0.5	1.62	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV101	0.3 m below foundation	2022-10-03		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2023-01-31		Residential	6.77	6.52	1.52	10.2	-	160	30	71	22	21	-	50.01	<15	<15	<0.40	<5.2	-	-	-
		2023-05-08		Residential	6.56	2.38	0.69	6.2	<5.0	<5.0	<5.0	76.8	180	-	<5.0	41.8	12.4	24.5	<0.4	<1.0	-	-	-
		2024-04-09		Residential	11.8	1.66	<0.87	<1.8	-	<15	<15	477	<15	20.0	-	<15	<15	<15	<0.41	<5.2	20.0	-	477

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024*. The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

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**TABLE D-1**  
**SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA**  
**PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE**  
**(µg/m<sup>3</sup>)**

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloro-ethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16
<b>Guidelines<sup>a</sup>:</b>																							
				Residential	6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG
				Residential	3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG
				Residential	3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG
				Residential	3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG
				Residential	3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG
				Residential	3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG
				Residential	4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG
				Residential	4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG
				Residential	5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG
				Residential	5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG
				Residential	6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG
SV321B	1.09	2022-02-11		Residential	<0.64	1.02	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2022-05-24		Residential	<0.50	1.92	<0.87	<1.8	-	30	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	30	27	<15
		2022-10-04		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2023-07-27		Residential	<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2023-12-06		Residential	5.45	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	16.6	<5.0	<5.0	<0.4	<1.0	-	-	-
SV322	1.0	2022-02-11		Residential	4.03	0.79	<0.87	<2.2	-	107	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	107	102	<15
		2022-05-24		Residential	42.9	50.0	13.8	78.8	-	518	<15	<15	<15	120	-	<15	<15	<15	<0.41	<5.2	638	453	<15
		2022-05-24	Dup	Residential	44.4	53.6	15.0	83.8	-	537	<15	<15	<15	127	-	<15	<15	<15	<0.41	<5.2	664	467	<15
		2022-10-04		Residential	1.0	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2022-10-04	Dup	Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2023-01-30		Residential	<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-07-27		Residential	0.44	1.07	1.20	5.6	<5.0	6.4	10.2	70.0	9.2	-	<5.0	6.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2023-12-06		Residential	0.51	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
SV323	1.0	2022-02-11		Residential	0.83	0.94	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2022-05-24		Residential	<0.50	1.06	1.43	2.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2022-10-03		Residential	1.47	4.90	3.34	65.7	-	42	18	33	<15	107	-	21.45	<15	<15	<0.41	<5.2	188	113	33
		2023-01-31		Residential	<0.64	<0.75	<0.87	<2.2	-	130	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-05-11		Residential	0.53	0.95	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-09-06		Residential	0.36	0.55	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2023-12-18		Residential	1.55	0.44	<0.43	<1.3	<5.0	<5.0	<5.0	13.9	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-

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NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1  
SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA  
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE  
(µg/m<sup>3</sup>)

Well ID	Total Well Depth (mbsgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloro-ethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	
<b>Guidelines<sup>a</sup>:</b>																								
Residential: fine or coarse-grained; <1 m beneath foundation					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG	
Residential: fine-grained: 1 m beneath foundation					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG	
Residential: fine-grained: 1.5 m beneath foundation					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG	
Residential: fine-grained: 2 m beneath foundation					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG	
Residential: fine-grained: 2.5 m beneath foundation					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG	
Residential: fine-grained: 3 m beneath foundation					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG	
Residential: coarse-grained: 1 m beneath foundation					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG	
Residential: coarse-grained: 1.5 m beneath foundation					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG	
Residential: coarse-grained: 2 m beneath foundation					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG	
Residential: coarse-grained: 2.5 m beneath foundation					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG	
Residential: coarse-grained: 3 m beneath foundation					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG	
SV324	1.5	2022-10-03		Residential	<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-01-26			<0.64	<0.75	<0.87	<2.2	-	20	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-01-26	Dup		0.67	1.81	<0.87	<2.2	-	91	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-05-10			<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2024-04-09			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV325	1.5	2022-10-04		Residential	<0.50	<0.75	<0.87	<1.8	-	71	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	71	71	<15	
		2023-01-26			<0.64	<0.75	<0.87	<2.2	-	28	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-05-05			<0.32	2.06	0.48	2.3	<5.0	<5.0	8.7	52.7	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-	
SV326	1.5	2022-10-04		Residential	<0.50	<0.75	<0.87	<1.8	-	21	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	21	21	<15	
		2023-01-26			<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-	
		2023-05-05			<0.32	1.36	<0.43	1.8	<5.0	<5.0	10.5	31.7	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-	
SV401	1.5	2022-02-12		Residential	1.21	2.41	<0.87	<2.2	-	17	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	17	<15	<15	
		2022-05-24			<0.50	1.09	2.00	4.9	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-10-05			<0.50	<0.75	<0.87	<1.8	-	19	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	19	19	<15	
		2023-05-11			0.37	1.03	<0.43	<1.3	<5.0	<5.0	<5.0	7.7	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-	
		2023-09-06			<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2023-12-06			0.56	1.01	0.86	3.4	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-	
		2024-04-19			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15

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Underline - Detection limit exceeds guideline.

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**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

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PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE  
(µg/m<sup>3</sup>)

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloro-ethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16	
<b>Guidelines<sup>a</sup>:</b>																								
Residential: fine or coarse-grained; <1 m beneath foundation					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG	
Residential: fine-grained: 1 m beneath foundation					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG	
Residential: fine-grained: 1.5 m beneath foundation					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG	
Residential: fine-grained: 2 m beneath foundation					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG	
Residential: fine-grained: 2.5 m beneath foundation					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG	
Residential: fine-grained: 3 m beneath foundation					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG	
Residential: coarse-grained: 1 m beneath foundation					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG	
Residential: coarse-grained: 1.5 m beneath foundation					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG	
Residential: coarse-grained: 2 m beneath foundation					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG	
Residential: coarse-grained: 2.5 m beneath foundation					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG	
Residential: coarse-grained: 3 m beneath foundation					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG	
SV402	1.5	2022-02-12		Residential	0.83	<0.75	<0.87	<2.2	-	<15	<15	67	634	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	701	
		2022-02-12	Dup		0.86	<0.75	<0.87	<2.2	-	<15	<15	74	599	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	673	
		2022-05-25			<u>264000</u>	<u>182000</u>	35300	<u>178000</u>	-	28500	600	<15	<15	4170	-	219	36	<15	<0.41	<u>1160</u>	33500	<15	72	
		2022-06-27			<u>1410</u>	2950	452	2510	-	35896	650	<15	<15	<15	6434	-	188.75	<15	<15	<0.41	27.4	43200	35900	<15
		2022-10-05			<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15
		2023-01-24			<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-01-24	Dup		<0.64	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-05-05			<0.32	0.94	<0.43	<1.3	<5.0	<5.0	<5.0	26.8	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-09-07			1.54	1.19	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
SV403	0.95	2022-02-11		Residential	2.46	<0.75	<0.87	<2.2	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-05-24			<0.50	0.83	<0.87	<1.8	-	20	<15	18	<15	<15	-	<15	<15	<15	<0.41	<5.2	20	19	18	
		2022-10-05			1.50	0.79	<0.87	<1.8	-	34	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	34	32	<15	
		2023-05-10			0.41	0.39	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-	
		2023-08-28			0.81	1.69	<0.43	1.5	<5.0	<5.0	<5.0	13.5	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2023-08-28	Dup		0.57	0.62	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2023-12-06			<0.32	<0.38	<0.43	<1.3	<5.0	10.5	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-	
2024-04-19			2.08	2.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15		
SV404	1.0	2022-02-11		Residential	5.08	<0.75	<0.87	<2.2	-	35	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	35	30	<15	
		2022-05-25			0.61	2.00	1.56	2.6	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2022-10-05			<0.50	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	<15	<15	
		2023-01-24			<0.64	<0.75	<0.87	<2.2	-	17	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-05-05			<0.32	0.61	<0.43	<1.3	<5.0	<5.0	<5.0	19.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-	
		2023-05-05	Dup		1.32	2.5	0.65	2.9	<5.0	9.6	9.7	48.8	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-	
		2023-08-28			<0.32	0.46	<0.43	<1.3	<5.0	<5.0	<5.0	16.8	7.1	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-	
		2023-12-07			1.78	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	10.7	<5.0	<5.0	<0.4	<1.0	-	-	-	
2024-04-19			1.44	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15		

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024*. The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.

TABLE D-1  
SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA  
PETROLEUM HYDROCARBON PARAMETERS, 1,2-DICHLOROETHANE, AND NAPHTHALENE  
(µg/m<sup>3</sup>)

Well ID	Total Well Depth (mbgs)	Date Sampled (dd-mmm-yy)	Duplicate	Area	Benzene	Toluene	Ethylbenzene	Total Xylenes	Aliphatic >C5-C6	Aliphatic >C6-C8	Aliphatic >C8-C10	Aliphatic >C10-C12	Aliphatic >C12-C16	Aromatic C6-C8	Aromatic >C7-C8 (TEX Excl.)	Aromatic >C8-C10	Aromatic >C10-C12	Aromatic >C12-C16	1,2-Dichloro-ethane	Naphthalene	F1 C6-C10	F1 minus BTEX C6-C10	F2 >C10-C16
<b>Guidelines<sup>a</sup>:</b>																							
Residential: fine or coarse-grained; <1 m beneath foundation					6.2E+01	1.1E+05	9.9E+04	4.9E+03	NG	9.1E+05	4.8E+04	5.0E+04	5.0E+04	NG	NG	8.1E+03	1.0E+04	1.0E+04	3.8E+01	4.5E+02	NG	NG	NG
Residential: fine-grained: 1 m beneath foundation					3.0E+04	5.4E+07	4.9E+07	2.4E+06	NG	4.7E+08	2.4E+07	2.5E+07	2.5E+07	NG	NG	4.1E+06	5.1E+06	5.1E+06	1.8E+03	2.2E+04	NG	NG	NG
Residential: fine-grained: 1.5 m beneath foundation					3.1E+04	5.6E+07	5.1E+07	2.5E+06	NG	5.0E+08	2.6E+07	2.7E+07	2.7E+07	NG	NG	4.4E+06	5.4E+06	5.4E+06	1.8E+03	2.4E+04	NG	NG	NG
Residential: fine-grained: 2 m beneath foundation					3.2E+04	5.9E+07	5.3E+07	2.6E+06	NG	5.3E+08	2.7E+07	2.9E+07	2.9E+07	NG	NG	4.7E+06	5.8E+06	5.8E+06	1.9E+03	2.5E+04	NG	NG	NG
Residential: fine-grained: 2.5 m beneath foundation					3.3E+04	6.1E+07	5.5E+07	2.7E+06	NG	5.6E+08	2.9E+07	3.0E+07	3.0E+07	NG	NG	4.9E+06	6.1E+06	6.1E+06	1.9E+03	2.6E+04	NG	NG	NG
Residential: fine-grained: 3 m beneath foundation					3.5E+04	6.3E+07	5.7E+07	2.8E+06	NG	5.9E+08	3.1E+07	3.2E+07	3.2E+07	NG	NG	5.2E+06	6.4E+06	6.4E+06	2.0E+03	2.7E+04	NG	NG	NG
Residential: coarse-grained: 1 m beneath foundation					4.0E+03	7.3E+06	6.8E+06	3.3E+05	NG	7.3E+07	3.8E+06	4.0E+06	4.0E+06	NG	NG	6.5E+05	8.0E+05	8.0E+05	2.3E+02	3.4E+03	NG	NG	NG
Residential: coarse-grained: 1.5 m beneath foundation					4.7E+03	8.5E+06	8.0E+06	3.8E+05	NG	9.0E+07	4.7E+06	4.9E+06	4.9E+06	NG	NG	8.0E+05	9.8E+05	9.8E+05	2.6E+02	4.0E+03	NG	NG	NG
Residential: coarse-grained: 2 m beneath foundation					5.3E+03	9.7E+06	9.2E+06	4.4E+05	NG	1.0E+08	5.5E+06	5.8E+06	5.8E+06	NG	NG	9.4E+05	1.1E+06	1.1E+06	2.9E+02	4.7E+03	NG	NG	NG
Residential: coarse-grained: 2.5 m beneath foundation					5.9E+03	1.0E+07	1.0E+07	5.0E+05	NG	1.2E+08	6.4E+06	6.7E+06	6.7E+06	NG	NG	1.0E+06	1.3E+06	1.3E+06	3.3E+02	5.4E+03	NG	NG	NG
Residential: coarse-grained: 3 m beneath foundation					6.6E+03	1.2E+07	1.1E+07	5.5E+05	NG	1.3E+08	7.3E+06	7.6E+06	7.6E+06	NG	NG	1.2E+06	1.5E+06	1.5E+06	3.6E+02	6.1E+03	NG	NG	NG
SV500	1.2	2023-01-27		Residential	<0.64	1.85	3	11.4	-	22	71	189	<15	16	-	<15	<15	<15	<0.40	<5.2	-	-	-
SV501	1.2	2023-01-30		Residential	0.89	6.33	5.43	15.6	-	53	130	40	<15	21	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-05-11			0.51	2.01	1.58	4.1	<5.0	<5.0	<5.0	10.6	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-09-07			1.28	0.60	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2023-12-06			<0.32	<0.38	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
SV502	1.2	2023-05-11		Residential	<0.32	0.62	0.55	<1.3	<5.0	20.4	5.8	23.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-09-07			2.77	3.60	<0.43	<1.3	<5.0	<5.0	<5.0	10.2	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-19			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
		2024-04-19	Dup		<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15
SV503	1.2	2023-05-11		Residential	0.36	0.49	<0.43	<1.3	<5.0	<5.0	<5.0	14.1	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-05-11	Dup		<0.32	0.65	<0.43	<1.3	<5.0	<5.0	<5.0	13.9	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.4	<1.0	-	-	-
		2023-09-06			5.43	2.90	1.31	4.50	<5.0	<5.0	<5.0	6.7	<5.0	-	<5.0	11.2	5.5	<5.0	<0.61	<1.0	-	-	-
SV504	1.2	2023-05-11		Residential	<0.32	<0.38	<0.43	<1.3	<5.0	13.5	131	360	10.7	-	<5.0	5.3	9.1	<5.0	<0.4	<1.0	-	-	-
		2023-09-06			<0.32	0.51	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
SV505	1.2	2023-01-23		Residential	0.73	9.8	7.08	25.5	-	269	151	188	<15	42	-	<15	<15	<15	<0.40	<5.2	-	-	-
		2023-09-06			0.93	0.57	<0.43	<1.3	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<0.40	<1.0	-	-	-
		2024-04-18			<0.5	<0.75	<0.87	<1.8	-	<15	<15	<15	<15	<15	-	<15	<15	<15	<0.41	<5.2	<15	-	<15

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024*. The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

*Italics* - Greater than 90% of referenced guidelines (screening threshold).

Underline - Detection limit exceeds guideline.

**Shaded** - Calculated guideline value results in a vapour concentration greater than the maximum possible vapour concentration for that chemical, assuming no NAPL is present. Maximum vapour concentration calculated according to Health Canada (2010) guidance.

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in micrograms per metre cubed (µg/m<sup>3</sup>).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.











**TABLE D-3**  
**SUMMARY OF 2022 TO 2024 SOIL VAPOUR ANALYTICAL DATA**  
**MATRIX GAS**

(%)

Well ID	Total Well Depth (mbgs)	Date Sampled (yyyy-mm-dd)	Dup	Area	Helium	Hydrogen	Oxygen	Nitrogen	Carbon Dioxide	Hydrogen Sulphide	Methane	Ethane	Propane	I-Butane	N-Butane	I-Pentane	N-Pentane	Hexanes	Heptanes	Octanes	Nonanes	Decanes	
<b>Guidelines<sup>a</sup>:</b>					NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG
SV21	3.5	2023-01-24		Residential	0.00230	<0.001	20.88710	78.3407	0.769	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV23	4.5	2024-04-18		Residential	0.10	<0.01	20.81	78.2	0.89	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV24	5.0	2023-01-25		Residential	0.00180	0.00350	18.40760	79.2816	2.306	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		2024-04-18			0.10	<0.01	19.25	78.0	2.63	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV26A	5.0	2022-02-11		Residential	<0.001	0.0128	20.6108	78.4465	0.9287	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		2022-10-01			0.03	<0.01	20.31	78.9	0.71	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		2023-01-25			0.02320	<0.001	20.39210	78.6349	0.949	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV26B	3.5	2022-02-11		Residential	0.0257	0.0352	20.9215	78.5524	0.4610	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014	0.0011	<0.001	<0.001	<0.001	<0.001
		2022-10-01			<0.01	<0.01	20.10	79.2	0.71	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		2023-01-25	Dup		0.00620	0.00530	20.93540	78.7687	0.285	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		2023-01-25			0.01480	<0.001	20.38980	78.6346	0.960	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV26C	2.0	2022-02-11		Residential	<0.001	0.0559	20.9268	78.4332	0.5745	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0030	0.0045	<0.001	<0.001	<0.001	
		2022-10-01			0.01	<0.01	19.09	80.1	0.76	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
		2023-01-25			0.03260	0.00670	20.34960	78.7573	0.854	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
SV36	3.0	2023-01-30		Residential	0.00320	0.00690	20.50470	79.0476	0.438	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
SV39	2.0	2023-01-23		Residential	0.00330	0.00540	20.67780	78.1758	1.138	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
SV41	1.5	2024-04-18		Residential	0.12	<0.01	20.84	78.0	1.00	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
		2024-04-18	Dup		0.01	<0.01	20.86	78.2	0.90	<0.0001	<0.01	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SV101	0.3 m below foundation	2023-01-31		Residential	0.00170	0.00870	20.32140	79.6162	0.052	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
SV322	1.0	2023-01-30		Residential	0.00400	<0.001	20.96910	78.7739	0.252	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
SV323	1.0	2023-01-31		Residential	<0.001	<0.001	20.95270	78.5999	0.45	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
SV501	1.2	2023-01-30		Residential	0.00190	0.00280	20.74210	78.3730	0.88	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	

a - For the full set of depth-specific guidelines, for commercial and residential land use, fine-grained and coarse-grained guidelines, refer to Appendix A, and/or the report entitled *Development of Soil Vapour and Groundwater Quality Guidelines, Prepared by Intrinsic Corp. for Suncor Energy Products Partnership, March 2024.*

The RM&C Plan screening threshold is 90% of the guidelines; see report text for additional details. Guidelines <1 m beneath foundation are based on default attenuation coefficient of 0.01 (AEP 2022b).

NG - No guideline.

"-" - Not analyzed.

Dup - Duplicate Sample.

mbgs - metres below ground surface (unless otherwise specified)

**BOLD** - Exceeds referenced guidelines.

Results for all parameters are reported in percentages (%).

Notes: All 2022 analytical data was collected by Clifton Engineering Group Inc.

## **APPENDIX E**

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# **QUALITY ASSURANCE AND QUALITY CONTROL**

TABLE E-1

RELATIVE PERCENT DIFFERENCE CALCULATIONS-AIR- ORGANIC HYDROCARBONS  
PETROLEUM HYDROCARBONS, 1,2-DICHLOROETHANE AND NAPHTHALENE

SAMPLE LOCATIONS	SV41		DUP02 FIELD DUPLICATE		RPD	SV502		DUP03 FIELD DUPLICATE		RPD	RPD ALERT LIMITS (%) <sup>a</sup>
	AGAT Certificate of Analysis No.	RDL	SV41	RDL		AGAT Certificate of Analysis No.	RDL	SV502	RDL		
AGAT Sample ID	24T141373		24T141373			24T141373		24T141373			
Date Sampled (yyyy/mm/dd)	5810286		5810287			5810299		5810300			
	2024/04/18		2024/04/18			2024/04/19		2024/04/19			
<b>PARAMETERS</b>											
Benzene	<0.00050	0.00050	<0.00050	0.00050	NC	<0.00050	0.00050	<0.00050	0.00050	NC	50
Toluene	<0.00075	0.00075	0.00162	0.00075	NC	<0.00075	0.00075	<0.00075	0.00075	NC	50
Ethylbenzene	<0.00087	0.00087	<0.00087	0.00087	NC	<0.00087	0.00087	<0.00087	0.00087	NC	50
Total Xylenes	<0.0018	0.0018	<0.0018	0.0018	NC	<0.0018	0.0018	<0.0018	0.0018	NC	50
<i>Aliphatics</i>											
Aliphatic >C6-C8	<0.015	0.015	<0.015	0.015	NC	<0.015	0.015	<0.015	0.015	NC	50
Aliphatic >C8-C10	<0.015	0.015	<0.015	0.015	NC	<0.015	0.015	<0.015	0.015	NC	50
Aliphatic >C10-C12	<0.015	0.015	<0.015	0.015	NC	<0.015	0.015	<0.015	0.015	NC	50
Aliphatic >C12-C16	<0.015	0.015	<0.015	0.015	NC	<0.015	0.015	<0.015	0.015	NC	50
<i>Aromatics</i>											
Aromatic >C8-C10	<0.015	0.015	<0.015	0.015	NC	<0.015	0.015	<0.015	0.015	NC	50
Aromatic >C10-C12	<0.015	0.015	<0.015	0.015	NC	<0.015	0.015	<0.015	0.015	NC	50
Aromatic >C12-C16	<0.015	0.015	<0.015	0.015	NC	<0.015	0.015	<0.015	0.015	NC	50
Aromatics C6-C8	<0.015	0.015	<0.015	0.015	NC	<0.015	0.015	<0.015	0.015	NC	50
1,2-Dichloroethane	<0.00041	0.00041	<0.00041	0.00041	NC	<0.00041	0.00041	<0.00041	0.00041	NC	50
Naphthalene	<0.0052	0.0052	<0.0052	0.0052	NC	<0.0052	0.0052	<0.0052	0.0052	NC	50

a - Alert limits used for field duplicate samples.

NC - Not Calculated.

RDL - Reportable detection limit.

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL).

**BOLD** - Exceeds RPD alert limit.

Results for all parameters are reported in milligrams per cubic metre (mg/m<sup>3</sup>).

TABLE E-1

RELATIVE PERCENT DIFFERENCE CALCULATIONS-AIR- ORGANIC HYDROCARBONS  
 PETROLEUM HYDROCARBONS, 1,2-DICHLOROETHANE AND NAPHTHALENE

SAMPLE LOCATIONS	SV37		DUP04 FIELD DUPLICATE		RPD	RPD ALERT LIMITS (%) <sup>a</sup>
	AGAT Certificate of Analysis No.	RDL	SV37	RDL		
AGAT Sample ID	24T141373		24T141373			
Screen Interval (mbgs)	5810292		5810293			
Date Sampled (yyyy/mm/dd)	Unknown		Unknown			
	2024/04/19		2024/04/19			
PARAMETERS						
Benzene	<0.00050	0.00050	<0.00050	0.00050	NC	50
Toluene	<0.00075	0.00075	<0.00075	0.00075	NC	50
Ethylbenzene	<0.00087	0.00087	<0.00087	0.00087	NC	50
Total Xylenes	<0.0018	0.0018	<0.0018	0.0018	NC	50
Aliphatic >C6-C8	<0.015	0.015	<0.015	0.015	NC	50
Aliphatic >C8-C10	<0.015	0.015	<0.015	0.015	NC	50
Aliphatic >C10-C12	<0.015	0.015	<0.015	0.015	NC	50
Aliphatic >C12-C16	<0.015	0.015	<0.015	0.015	NC	50
Aromatic >C8-C10	<0.015	0.015	<0.015	0.015	NC	50
Aromatic >C10-C12	<0.015	0.015	<0.015	0.015	NC	50
Aromatic >C12-C16	<0.015	0.015	<0.015	0.015	NC	50
Aromatics C6-C8	<0.015	0.015	<0.015	0.015	NC	50
1,2-Dichloroethane	<0.00041	0.00041	<0.00041	0.00041	NC	50
Naphthalene	<0.0052	0.0052	<0.0052	0.0052	NC	50

a - Alert limits used for field duplicate samples.

NC - Not Calculated.

RDL - Reportable detection limit.

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL).

**BOLD** - Exceeds RPD alert limit.

Results for all parameters are reported in milligrams per cubic metre (mg/m<sup>3</sup>).



**DATA QUALITY REVIEW CHECKLIST**

Consultant: <u>Parsons Inc.</u>	Sampling Date: <u>2024/04/18 and 2024/04/19</u>
Location: <u>1620 - 14th Avenue NW, Calgary, AB</u>	Laboratory : <u>AGAT Laboratories, Mississauga, ON</u>
Consultant Project Number: <u>10-12832</u>	Sample Submission Number: <u>24T141373</u>

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	<i>X</i>			<i>All lab QC met acceptance criteria.</i>
Method Blank Concentration	<i>X</i>			
Matrix Duplicate RPD	<i>X</i>			
Matrix Spike Recovery			<i>X</i>	
Other Quality Control Data	<i>X</i>			


Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Equipment Blank Concentration			<i>X</i>	<i>All field QC samples have met the acceptable RPD limits.</i>
Trip Blank Concentration			<i>X</i>	
Field Duplicate RPD	<i>X</i>			

Has CoA been signed off (Yes/No)?:	<u>Yes</u>
Were all samples analyzed within hold times (Yes/No)?:	<u>Yes</u>
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	<u>N/A</u>
Is Chain of Custody completed and signed (Yes/No)?:	<u>Yes</u>
Were sample temperatures acceptable when they reached lab (Yes/No)?:	<u>N/A</u>

Is data considered to be reliable (Yes/No)?: Yes  
 If answer is "No", describe and provide rationale:

Performed by (Print): Danielle Smith  
 Reviewed by (Print): Michelle Patterson  
 Reviewed date: 2024/05/13

Reviewed by (Signature): 



CLIENT NAME: PARSONS  
Unit 510, 214 -11 Avenue SW  
Calgary, AB T2R 0K1  
(403) 294-4200

ATTENTION TO: Michelle Patterson/Rebecca Neufeld

PROJECT: 10-12832

AGAT WORK ORDER: 24T141373

AIR QUALITY MONITORING REVIEWED BY: Theresa Stephenson, Manager of Technical Services

DATE REPORTED: May 09, 2024

PAGES (INCLUDING COVER): 10

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*Notes

**Disclaimer:**

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.



## Air Quality Summary

AGAT WORK ORDER: 24T141373

PROJECT: 10-12832

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: PARSONS

SAMPLING SITE:

ATTENTION TO: Michelle Patterson/Rebecca Neufeld

SAMPLED BY:

Parameter	Unit	Number of Samples	Peak Reading	Network Average
Benzene	µg/m3	25	9.46	0.59
Toluene	µg/m3	25	2.75	<0.75
Ethylbenzene	µg/m3	25	<0.87	<0.87
m&p-Xylene	µg/m3	25	1.9	<1.3
o-Xylene	µg/m3	25	<0.87	<0.87
Total Xylenes	µg/m3	25	1.9	<1.8
1,2-Dichloroethane	µg/m3	25	<0.41	<0.41
Naphthalene	µg/m3	25	<5.2	<5.2
C6-C8 Aliphatic	µg/m3	25	<15	<15
>C8-C10 Aliphatic	µg/m3	25	<15	<15
>C10-C12 Aliphatic	µg/m3	25	<15	<15
>C12-C16 Aliphatic	µg/m3	25	<15	<15
C6-C8 Aromatic	µg/m3	25	<15	<15
>C8-C10 Aromatic	µg/m3	25	<15	<15
>C10-C12 Aromatic	µg/m3	25	<15	<15
>C12-C16 Aromatic	µg/m3	25	<15	<15
C6-C10 (F1)	µg/m3	25	<15	<15
>C10-C16 (F2)	µg/m3	25	<15	<15
4-Bromofluorobenzene	%	25	90	79



## Certificate of Analysis

AGAT WORK ORDER: 24T141373

PROJECT: 10-12832

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MISSISSAUGA, ONTARIO  
CANADA L4Z 1Y2  
TEL (905)712-5100  
FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: PARSONS

ATTENTION TO: Michelle Patterson/Rebecca Neufeld

SAMPLING SITE:

SAMPLED BY:

### BTEX/F1/F2 Fractionation in Air + 1,2-DCA & Napthalene in Air (Canister) (µg/m3)

DATE RECEIVED: 2024-04-20

DATE REPORTED: 2024-05-09

Parameter	Unit	SAMPLE DESCRIPTION:		240418SV09	240418SV10	240418SV21	240418SV23	240418SV24	240418SV26A	240418SV26B	240418SV26C	
				(12000)	(10058)	(12123)	(12124)	(6532)	(12004)	(9441)	(6823)	
		SAMPLE TYPE:		Air	Air	Air	Air	Air	Air	Air	Air	Air
		DATE SAMPLED:		2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-18
		G / S	RDL	5810276	5810277	5810278	5810279	5810280	5810281	5810282	5810283	
pressure upon receipt	inHg			-5.0	-4.0	-5.0	-5.0	-4.0	-5.0	-5.0	-4.0	
Benzene	µg/m3	0.50	<0.50	<0.50	<0.50	<0.50	9.46	<0.50	<0.50	<0.50	<0.50	
Toluene	µg/m3	0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	
Ethylbenzene	µg/m3	0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	
m&p-Xylene	µg/m3	1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	
o-Xylene	µg/m3	0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	
Total Xylenes	µg/m3	1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	
1,2-Dichloroethane	µg/m3	0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	
Napthalene	µg/m3	5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	
C6-C8 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
>C8-C10 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
>C10-C12 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
>C12-C16 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
C6-C8 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
>C8-C10 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
>C10-C12 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
>C12-C16 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
C6-C10 (F1)	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
>C10-C16 (F2)	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
Surrogate	Unit	Acceptable Limits										
4-Bromofluorobenzene	%	70-130		72	71	79	77	80	72	78	82	

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 24T141373

PROJECT: 10-12832

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: PARSONS

ATTENTION TO: Michelle Patterson/Rebecca Neufeld

SAMPLING SITE:

SAMPLED BY:

### BTEX/F1/F2 Fractionation in Air + 1,2-DCA & Napthalene in Air (Canister) (µg/m3)

DATE RECEIVED: 2024-04-20

DATE REPORTED: 2024-05-09

Parameter	Unit	SAMPLE DESCRIPTION:		240418SV29	240418SV30	240418SV41	240418DUP02	240418SV505	240419SV11	240419SV31	240419SV32
		G / S		(11894)	(12126)	(9050)	(12005)	(9177)	(00195)	(00121)	(9209)
		RDL		Air	Air	Air	Air	Air	Air	Air	Air
		DATE SAMPLED:		2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-18	2024-04-19	2024-04-19	2024-04-19
pressure upon receipt	inHg			-5.0	-5.0	-6.0	-5.0	-4.0	-5.0	-4.0	-6.0
Benzene	µg/m3	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.99	0.89
Toluene	µg/m3	0.75	<0.75	<0.75	<0.75	1.62	<0.75	<0.75	<0.75	<0.75	<0.75
Ethylbenzene	µg/m3	0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87
m&p-Xylene	µg/m3	1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	1.9
o-Xylene	µg/m3	0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87
Total Xylenes	µg/m3	1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	1.9
1,2-Dichloroethane	µg/m3	0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
Napthalene	µg/m3	5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2
C6-C8 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C8-C10 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C10-C12 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C12-C16 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
C6-C8 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C8-C10 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C10-C12 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C12-C16 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
C6-C10 (F1)	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C10-C16 (F2)	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Surrogate	Unit	Acceptable Limits									
4-Bromofluorobenzene	%	70-130	80	84	75	84	76	75	76	90	

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 24T141373

PROJECT: 10-12832

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
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<http://www.agatlabs.com>

CLIENT NAME: PARSONS

SAMPLING SITE:

ATTENTION TO: Michelle Patterson/Rebecca Neufeld

SAMPLED BY:

### BTEX/F1/F2 Fractionation in Air + 1,2-DCA & Napthalene in Air (Canister) (µg/m3)

DATE RECEIVED: 2024-04-20

DATE REPORTED: 2024-05-09

Parameter	Unit	SAMPLE DESCRIPTION:		240419SV37	240419DUP04	240419SV39	240419SV40	240419SV401	240419SV403	240419SV404	240419SV502
		G / S		(9438)	(11993)	(12127)	(6441)	(12011)	(12070)	(00136)	(12038)
		RDL		Air	Air	Air	Air	Air	Air	Air	Air
		DATE SAMPLED:		2024-04-19	2024-04-19	2024-04-19	2024-04-19	2024-04-19	2024-04-19	2024-04-19	2024-04-19
pressure upon receipt	inHg			-5.0	-6.0	-4.0	-5.0	-6.0	-7.0	-6.0	-4.0
Benzene	µg/m3	0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.08	1.44	<0.50
Toluene	µg/m3	0.75	<0.75	<0.75	<0.75	<0.75	<0.75	<0.75	2.75	<0.75	<0.75
Ethylbenzene	µg/m3	0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87
m&p-Xylene	µg/m3	1.3	<1.3	<1.3	<1.3	<1.3	<1.3	<1.3	1.6	<1.3	<1.3
o-Xylene	µg/m3	0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87	<0.87
Total Xylenes	µg/m3	1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8
1,2-Dichloroethane	µg/m3	0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41	<0.41
Napthalene	µg/m3	5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2	<5.2
C6-C8 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C8-C10 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C10-C12 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C12-C16 Aliphatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
C6-C8 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C8-C10 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C10-C12 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C12-C16 Aromatic	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
C6-C10 (F1)	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
>C10-C16 (F2)	µg/m3	15	<15	<15	<15	<15	<15	<15	<15	<15	<15
Surrogate	Unit	Acceptable Limits									
4-Bromofluorobenzene	%	70-130		78	85	79	82	78	86	82	79

Certified By:



## Certificate of Analysis

AGAT WORK ORDER: 24T141373

PROJECT: 10-12832

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: PARSONS

ATTENTION TO: Michelle Patterson/Rebecca Neufeld

SAMPLING SITE:

SAMPLED BY:

### BTEX/F1/F2 Fractionation in Air + 1,2-DCA & Napthalene in Air (Canister) (µg/m3)

DATE RECEIVED: 2024-04-20

DATE REPORTED: 2024-05-09

		240419DUP03		
SAMPLE DESCRIPTION:		(12134)		
SAMPLE TYPE:		Air		
DATE SAMPLED:		2024-04-19		
Parameter	Unit	G / S	RDL	5810300
pressure upon receipt	inHg			-5.0
Benzene	µg/m3		0.50	<0.50
Toluene	µg/m3		0.75	<0.75
Ethylbenzene	µg/m3		0.87	<0.87
m&p-Xylene	µg/m3		1.3	<1.3
o-Xylene	µg/m3		0.87	<0.87
Total Xylenes	µg/m3		1.8	<1.8
1,2-Dichloroethane	µg/m3		0.41	<0.41
Napthalene	µg/m3		5.2	<5.2
C6-C8 Aliphatic	µg/m3		15	<15
>C8-C10 Aliphatic	µg/m3		15	<15
>C10-C12 Aliphatic	µg/m3		15	<15
>C12-C16 Aliphatic	µg/m3		15	<15
C6-C8 Aromatic	µg/m3		15	<15
>C8-C10 Aromatic	µg/m3		15	<15
>C10-C12 Aromatic	µg/m3		15	<15
>C12-C16 Aromatic	µg/m3		15	<15
C6-C10 (F1)	µg/m3		15	<15
>C10-C16 (F2)	µg/m3		15	<15
Surrogate	Unit	Acceptable Limits		
4-Bromofluorobenzene	%	70-130		78

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5810276-5810300 BTEX and fractionation analysis was performed from an air canister sample, using a Cold Vapor Trap preconcentrator and GC/MSD.

Analysis performed at AGAT Toronto (unless marked by \*)

Certified By:

## Quality Assurance

 CLIENT NAME: PARSONS  
 PROJECT: 10-12832  
 SAMPLING SITE:

 AGAT WORK ORDER: 24T141373  
 ATTENTION TO: Michelle Patterson/Rebecca  
 SAMPLED BY:

### Air Quality Monitoring

RPT Date: May 09, 2024			DUPLICATE				Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD	Measured Value		Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits	
								Lower	Upper		Lower	Upper		Lower	Upper

**BTEX/F1/F2 Fractionation in Air + 1,2-DCA & Napthalene in Air (Canister) (µg/m3)**

Benzene	5810283	5810283	<0.50	<0.50	NA	< 0.50	94%	60%	140%	93%	50%	140%	NA
Toluene	5810283	5810283	<0.75	<0.75	NA	< 0.75	88%	60%	140%	92%	50%	140%	NA
Ethylbenzene	5810283	5810283	<0.87	<0.87	NA	< 0.87	90%	60%	140%	94%	50%	140%	NA
m&p-Xylene	5810283	5810283	<1.3	<1.3	NA	< 1.3	97%	60%	140%	103%	50%	140%	NA
o-Xylene	5810283	5810283	<0.87	<0.87	NA	< 0.87	95%	60%	140%	104%	50%	140%	NA
1,2-Dichloroethane	5810283	5810283	<0.41	<0.41	NA	< 0.41	89%	60%	140%	91%	50%	140%	NA
Napthalene	5810283	5810283	<5.2	<5.2	NA	< 5.2	84%	60%	140%	87%	50%	140%	NA

**BTEX/F1/F2 Fractionation in Air + 1,2-DCA & Napthalene in Air (Canister) (µg/m3)**

Benzene	5810294	5810294	<0.50	<0.50	NA	< 0.50	105%	60%	140%	100%	50%	140%	NA
Toluene	5810294	5810294	<0.75	<0.75	NA	< 0.75	76%	60%	140%	96%	50%	140%	NA
Ethylbenzene	5810294	5810294	<0.87	<0.87	NA	< 0.87	68%	60%	140%	100%	50%	140%	NA
m&p-Xylene	5810294	5810294	<1.3	<1.3	NA	< 1.3	104%	60%	140%	109%	50%	140%	NA
o-Xylene	5810294	5810294	<0.87	<0.87	NA	< 0.87	86%	60%	140%	111%	50%	140%	NA
1,2-Dichloroethane	5810294	5810294	<0.41	<0.41	NA	< 0.41	79%	60%	140%	97%	50%	140%	NA
Napthalene	5810294	5810294	<5.2	<5.2	NA	< 5.2	102%	60%	140%	90%	50%	140%	NA

Certified By:





## Method Summary

CLIENT NAME: PARSONS

AGAT WORK ORDER: 24T141373

PROJECT: 10-12832

ATTENTION TO: Michelle Patterson/Rebecca

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Air Quality Monitoring			
pressure upon receipt			N/A
Benzene	AQM-248-16000	modified from EPA TO15	GC/MS
Toluene	AQM-248-16000	modified from EPA TO15	GC/MS
Ethylbenzene	AQM-248-16000	modified from EPA TO15	GC/MS
m&p-Xylene	AQM-248-16000	modified from EPA TO15	GC/MS
o-Xylene	AQM-248-16000	modified from EPA TO15	GC/MS
Total Xylenes	AQM-248-16000	modified from EPA TO15	CALCULATION
1,2-Dichloroethane	AQM-248-16000	modified from EPA TO15	GC/MS
Naphthalene	AQM-248-16000	modified from EPA TO15	GC/MS
C6-C8 Aliphatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C8-C10 Aliphatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C10-C12 Aliphatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C12-C16 Aliphatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
C6-C8 Aromatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C8-C10 Aromatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C10-C12 Aromatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C12-C16 Aromatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
C6-C10 (F1)	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C10-C16 (F2)	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
4-Bromofluorobenzene	AQM-248-16000	modified from EPA TO15	GC/MS



Have feedback?  
Scan here for a quick survey!



5835 Coopers Ave  
Mississauga, Ontario  
L4Z 1Y2  
P: 905.712.5100

24T141373

**Laboratory Use Only**  
AGAT WO#: 24T134519  
Notes: 8 boxes

**Air Analysis Chain of Custody Record**

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**Report Information**  
Company: PARSONS INC.  
Contact: Michelle Patterson / Rebecca Neufeld  
Address: 510,214-11th Ave SW  
Calgary, AB T2R 0K1  
Phone: 403-294-4215 Fax: 403-294-4240  
Client Project #: 10-12832 PO: 478903.17103  
AGAT Quote #:

**Invoice To** Same Yes  / No   
Parsons Inc A.P. Parsons@Parsons.com  
Company: SENSOR ENERGY Parsons Inc  
Contact: Stephen D. Woodin Accounts Payable  
Address: 1620-14 Ave NW (Outlet 0446) 2751 John St, Markham, Ontario, L3R 2Y8  
**Report Information**  
1. Name: Michelle Patterson  
Email: michelle.patterson@parsons.com  
2. Name: Rebecca Neufeld  
Email: rebecca.neufeld@parsons.com

**Turnaround Time Required (TAT)**  
**Regular TAT\***  10 working days  
**Rush TAT\***  3 working days  
 2 working days  
UPON FILLING OUT THIS SECTION, THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.  
\*TATS ARE EXCLUSIVE OF WEEKENDS AND STATUTORY HOLIDAYS  
FOR RUSH TAT, CONFIRM AVAILABILITY WITH LABORATORY.

**Regulatory Guidelines**  
153 CCME  
419 Other: AB Tier 1 Res

SAMPLE ID	CANISTER #	FLOW CONTROLLER #	DATE SAMPLED	INITIAL PRESSURE	FINAL PRESSURE	AMBIENT TEMPERATURE	SAMPLE TYPE					BTEX	Naaphthalene	1,2-Dichloroethane	Aliphatic Hydrocarbons	Aromatic Hydrocarbons	Meth. X Gases	REPORT UNITS mg/m <sup>3</sup>	REPORT UNIT ppmv	REPORT UNITS ug/m <sup>3</sup>
							AMBIENT	SOIL-VAPOUR	SUB-SLAB	INDOOR-RES	INDOOR-COMM									
2404185V09	12000	F100045	Apr, 18, 2024	-26	-5	0°C		✓	✓			✓	✓	✓	✓	✓				✓
2404185V10	10058	F200074		-25	-5	0°C		✓				✓	✓	✓	✓	✓				✓
2404185V21	12123	F200094		-26	-5	3°C		✓				✓	✓	✓	✓	✓				✓
2404185V23	12124	1		-26	-5	3°C		✓				✓	✓	✓	✓	✓				✓
2404185V24	6532	F100129		-25	-5	10°C		✓				✓	✓	✓	✓	✓				✓
2404185V26A	12004	F0020		-27	-5	0°C		✓				✓	✓	✓	✓	✓				✓
2404185V26B	9441	F200034		-27	-5	0°C		✓				✓	✓	✓	✓	✓				✓
2404185V26C	6823	F100043		-27	-5	0°C		✓				✓	✓	✓	✓	✓				✓
2404185V29	11894	F200056		-26	-5	10°C		✓				✓	✓	✓	✓	✓				✓
2404185V30	12126	VOSN#1		-27	-5	0°C		✓				✓	✓	✓	✓	✓				✓
2404185V41	9050	FC10026		-25	-5	2°C		✓				✓	✓	✓	✓	✓				✓
2404185V42	<del>12127</del>	<del>F100046</del>		-25	-5	20°C		✓				✓	✓	✓	✓	✓				✓
2404185V505	9177	F100042		-27	-5	3°C		✓				✓	✓	✓	✓	✓				✓
2404195V11	00195	F200061	Apr, 19, 2024	-27	-5	50°C		✓				✓	✓	✓	✓	✓				✓
2404195V31	00121	G100014		-26	-6	50°C		✓				✓	✓	✓	✓	✓				✓
2404195V32	9209	F100122		-26	-5	3°C		✓				✓	✓	✓	✓	✓				✓
2404195V37	9438	F100035		-26	-5	50°C		✓				✓	✓	✓	✓	✓				✓
2404195V44	11993	F200027		-27	-5			✓				✓	✓	✓	✓	✓				✓
2404195V39	12127	G100017		-27	-5	50°C		✓				✓	✓	✓	✓	✓				✓

Samples Relinquished By (Print Name and Sign): <u>Craig Sharp</u> <u>Kruz Sharp</u>	Date/Time: <u>Apr, 19, 24 14:00</u>	Samples Received By (Print Name and Sign): <u>AC Bly</u> <u>B/S</u>	Date/Time: <u>Apr 20/24</u>	Page <u>1</u> of <u>2</u>
Samples Relinquished By (Print Name and Sign):	Date/Time:	Samples Received By (Print Name and Sign): <u>Tracy</u>	Date/Time: <u>12:40 PM</u>	White Copy - AGAT
Samples Relinquished By (Print Name and Sign):	Date/Time:	Samples Received By (Print Name and Sign):	Date/Time:	Yellow Copy - AGAT
Samples Relinquished By (Print Name and Sign):	Date/Time:	Samples Received By (Print Name and Sign):	Date/Time:	Pink Copy - Client



**Laboratory Use Only**

AGAT WO#: 24T134519

Notes:

## Air Analysis Chain of Custody Record

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**Report Information**

Company: PARSONS INC.

Contact: Michelle Patterson / Rebecca Neufeld

Address: 510,214-11th Ave SW  
Calgary, AB T2R 0K1

Phone: 403-294-4215 Fax: 403-294-4240

Client Project #: 10-12832 PO: 478903.17103

AGAT Quote #:

**Invoice To** Same Yes  / No

Company: Parsons Inc. (Ap. Parsons) Parsons.com  
SHINCOR ENERGY Parsons Inc

Contact: Stephen [unclear] Accounts Payable

Address: 1000-14 Ave NW (Quad 1415)  
Markham, Ontario, L3R 2Y8

**Report Information**

1. Name: Michelle Patterson  
Email: michelle.patterson@parsons.com

2. Name: Rebecca Neufeld  
Email: rebecca.neufeld@parsons.com

**Turnaround Time Required (TAT)**

**Regular TAT\***  10 working days

**Rush TAT\***  3 working days  
 2 working days

UPON FILLING OUT THIS SECTION, THE CLIENT ACCEPTS THAT SURCHARGES WILL BE ATTACHED TO THIS ANALYSIS. IF NOT COMPLETED, REGULAR TAT WILL BE DEFAULT.

\*TATS ARE EXCLUSIVE OF WEEKENDS AND STATUTORY HOLIDAYS

FOR RUSH TAT, CONFIRM AVAILABILITY WITH LABORATORY.

**Regulatory Guidelines**

153 CCME  
419 Other: AB Tier 1 Res

SAMPLE ID	CANISTER #	FLOW CONTROLLER #	DATE SAMPLED	INITIAL PRESSURE	FINAL PRESSURE	AMBIENT TEMPERATURE	SAMPLE TYPE					BTEX	1,2-dichloroethane	Aliphatic Hydrocarbons	Aromatic Hydrocarbons	Matrix Gases	REPORT UNITS mg/m <sup>3</sup>	REPORT UNIT ppmv	REPORT UNITS ug/m <sup>3</sup>	
							AMBIENT	SOIL-VAPOUR	SUB-SLAB	INDOOR-RES	INDOOR-COMM									
240419SV40	6441	F200105	April 19 2024	-27	-5	40C		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>
240419SV401	12011	G00015		-25	-5	30C		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
240419SV402	12070	F000012		-24	-5	30C		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
240419SV404	00136	F200026		-25	-5	30C		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
240419SV507	12038	F200022		-26	-5	30C		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				
240419Duo03	12134	0006		-26	-5	30C		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				

Samples Relinquished By (Print Name and Sign): <u>Craig Shure</u>	Date/Time: <u>April 19, 24 14:00</u>	Samples Received By (Print Name and Sign): <u>Analy [unclear]</u>	Date/Time: <u>April 12/20/24</u>	Pink Copy - Client	Page <u>2</u> of <u>2</u>
Samples Relinquished By (Print Name and Sign):	Date/Time:	Samples Received By (Print Name and Sign):	Date/Time: <u>12:40pm</u>	Yellow Copy - AGAT	No:
Samples Relinquished By (Print Name and Sign):	Date/Time:	Samples Received By (Print Name and Sign):	Date/Time:	White Copy - AGAT	No:

**TABLE E-2**  
**RELATIVE PERCENT DIFFERENCE CALCULATIONS-AIR- ORGANIC HYDROCARBONS**  
**MATRIX GASES**

SAMPLE LOCATIONS	SV41		DUP02 FIELD DUPLICATE		RPD	RPD ALERT LIMITS (%) <sup>a</sup>
	AGAT Certificate of Analysis No.	RDL	SV41 AGAT Sample ID	RDL		
	24C146985		24C146985			
	5810286A		5810287A			
Date Sampled (yyyy/mm/dd)	2024/04/18		2024/04/18			
PARAMETERS						
Helium	0.12	0.01	0.01	0.01	NC	50
Hydrogen	<0.01	0.01	<0.01	0.01	NC	50
Oxygen	20.84	0.01	20.86	0.01	0.1%	50
Nitrogen	78.0	0.1	78.2	0.1	0.3%	50
Carbon Dioxide	1.00	0.01	0.90	0.01	11%	50
Hydrogen Sulphide	<0.0001	0.0001	<0.0001	0.0001	NC	50
Methane	<0.01	0.01	<0.01	0.01	NC	50
Ethane	<0.01	0.01	<0.01	0.01	NC	50
Propane	<0.001	0.001	<0.001	0.001	NC	50
I-Butane	<0.001	0.001	<0.001	0.001	NC	50
N-Butane	<0.001	0.001	<0.001	0.001	NC	50
I-Pentane	<0.001	0.001	<0.001	0.001	NC	50
N-Pentane	<0.001	0.001	<0.001	0.001	NC	50
Hexanes	<0.001	0.001	<0.001	0.000	NC	50
Heptanes	<0.001	0.001	<0.001	0.001	NC	50
Octanes	<0.001	0.001	<0.001	0.001	NC	50
Nonanes	<0.001	0.001	<0.001	0.001	NC	50
Decanes+	<0.001	0.001	<0.001	0.001	NC	50

a - Alert limits used for field duplicate samples.

NC - Not Calculated.

RDL - Reportable detection limit.

RPD - Relative Percent Difference (not calculated when one or both results are less than 5X RDL).

**BOLD** - Exceeds RPD alert limit.

Results for all parameters are reported in percent (%).

**DATA QUALITY REVIEW CHECKLIST**

Consultant: Parsons Inc.

Sampling Date: 2024/04/18

Location: 1620 - 14th Avenue NW, Calgary, AB

Laboratory : AGAT Laboratories, Calgary, AB

Consultant Project Number: 10-12832

Sample Submission Number: 24C146985

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery			X	
Method Blank Concentration			X	
Matrix Duplicate RPD			X	
Matrix Spike Recovery			X	
Other Quality Control Data			X	

Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Equipment Blank Concentration			X	All field QC samples have met the acceptable RPD limits.
Trip Blank Concentration			X	
Field Duplicate RPD	X			

Has CoA been signed off (Yes/No)?:

Yes

Were all samples analyzed within hold times (Yes/No)?:

Yes

All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:

N/A

Is Chain of Custody completed and signed (Yes/No)?:

Yes

Were sample temperatures acceptable when they reached lab (Yes/No)?:

N/A

Is data considered to be reliable (Yes/No)?:

Yes

If answer is "No", describe and provide rationale:

Performed by (Print): Danielle Smith

Reviewed by (Print): Michelle Patterson

Reviewed date: 2024/05/28

Reviewed by (Signature):



CLIENT NAME: PARSONS  
Unit 510, 214 -11 Avenue SW  
Calgary, AB T2R 0K1  
(403) 294-4200

ATTENTION TO: KRZYSTOF WOZNAK

PROJECT:

AGAT WORK ORDER: 24C146985

OCCUPATIONAL HYGIENE REVIEWED BY: Bernie Diep, Analyst

DATE REPORTED: May 27, 2024

PAGES (INCLUDING COVER): 6

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (403) 299-2000

\*Notes

Disclaimer:

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.

## Certificate of Analysis

CLIENT NAME: PARSONS  
PROJECT:  
SAMPLING SITE:

AGAT WORK ORDER: 24C146985  
ATTENTION TO: KRZYSTOF WOZNAK  
SAMPLED BY:

<b>Gas C10+ (Including O2) (%)</b>		
SAMPLE TYPE: Gas	SAMPLE ID: <b>240418DUP02</b>	DATE RECEIVED: May 03, 2024
DATE SAMPLED: Apr 18, 2024		DATE REPORTED:
SAMPLE DESCRIPTION: NOT AVAILABLE; SAMPLE ID#5810287A		

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Helium (He)	%	0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Hydrogen (H2)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Oxygen (O2)	%	20.86		0.01	May 08, 2024	BD	Apr 18, 2024
Nitrogen (N2)	%	78.2		0.1	May 08, 2024	BD	Apr 18, 2024
Carbon Dioxide (CO2)	%	0.90		0.01	May 08, 2024	BD	Apr 18, 2024
Hydrogen Sulphide (H2S)	%	<0.0001		0.0001	May 08, 2024	BD	Apr 18, 2024
Methane (C1)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Ethane (C2)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Propane (C3)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
I-Butane (IC4)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
N-Butane (NC4)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
I-Pentane (IC5)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
N-Pentane (NC5)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Hexanes (C6)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Heptanes (C7)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Octanes (C8)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Nonanes (C9)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Decanes+ (C10+)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024

**COMMENTS:**

RDL - Reported Detection Limit; G / S - Guideline / Standard  
Analysis Conducted Using GPA 2286-14 (Modified)

Certified By: \_\_\_\_\_





## Certificate of Analysis

CLIENT NAME: PARSONS  
PROJECT:  
SAMPLING SITE:

AGAT WORK ORDER: 24C146985  
ATTENTION TO: KRZYSTOF WOZNAK  
SAMPLED BY:

<b>Gas C10+ (Including O2) (%)</b>		
SAMPLE TYPE: Gas	SAMPLE ID: <b>240418SV23</b>	DATE RECEIVED: May 03, 2024
DATE SAMPLED: Apr 18, 2024		DATE REPORTED:
SAMPLE DESCRIPTION: NOT AVAILABLE; SAMPLE ID#5810279A		

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Helium (He)	%	0.10		0.01	May 08, 2024	BD	Apr 18, 2024
Hydrogen (H2)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Oxygen (O2)	%	20.81		0.01	May 08, 2024	BD	Apr 18, 2024
Nitrogen (N2)	%	78.2		0.1	May 08, 2024	BD	Apr 18, 2024
Carbon Dioxide (CO2)	%	0.89		0.01	May 08, 2024	BD	Apr 18, 2024
Hydrogen Sulphide (H2S)	%	<0.0001		0.0001	May 08, 2024	BD	Apr 18, 2024
Methane (C1)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Ethane (C2)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Propane (C3)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
I-Butane (IC4)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
N-Butane (NC4)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
I-Pentane (IC5)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
N-Pentane (NC5)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Hexanes (C6)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Heptanes (C7)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Octanes (C8)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Nonanes (C9)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Decanes+ (C10+)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard  
Analysis Conducted Using GPA 2286-14 (Modified)

Certified By: \_\_\_\_\_



## Certificate of Analysis

 CLIENT NAME: PARSONS  
 PROJECT:  
 SAMPLING SITE:

 AGAT WORK ORDER: 24C146985  
 ATTENTION TO: KRZYSTOF WOZNAK  
 SAMPLED BY:

<b>Gas C10+ (Including O2) (%)</b>		
SAMPLE TYPE: Gas	SAMPLE ID: <b>240418SV24</b>	DATE RECEIVED: May 03, 2024
DATE SAMPLED: Apr 18, 2024		DATE REPORTED:
SAMPLE DESCRIPTION: NOT AVAILABLE; SAMPLE ID#5810280A		

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Helium (He)	%	0.10		0.01	May 08, 2024	BD	Apr 18, 2024
Hydrogen (H2)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Oxygen (O2)	%	19.25		0.01	May 08, 2024	BD	Apr 18, 2024
Nitrogen (N2)	%	78.0		0.1	May 08, 2024	BD	Apr 18, 2024
Carbon Dioxide (CO2)	%	2.63		0.01	May 08, 2024	BD	Apr 18, 2024
Hydrogen Sulphide (H2S)	%	<0.0001		0.0001	May 08, 2024	BD	Apr 18, 2024
Methane (C1)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Ethane (C2)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Propane (C3)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
I-Butane (IC4)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
N-Butane (NC4)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
I-Pentane (IC5)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
N-Pentane (NC5)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Hexanes (C6)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Heptanes (C7)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Octanes (C8)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Nonanes (C9)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Decanes+ (C10+)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024

**COMMENTS:**

 RDL - Reported Detection Limit; G / S - Guideline / Standard  
 Analysis Conducted Using GPA 2286-14 (Modified)

Certified By: \_\_\_\_\_





## Certificate of Analysis

CLIENT NAME: PARSONS  
PROJECT:  
SAMPLING SITE:

AGAT WORK ORDER: 24C146985  
ATTENTION TO: KRZYSTOF WOZNAK  
SAMPLED BY:

<b>Gas C10+ (Including O2) (%)</b>		
SAMPLE TYPE: Gas	SAMPLE ID: <b>240418SV41</b>	DATE RECEIVED: May 03, 2024
DATE SAMPLED: Apr 18, 2024		DATE REPORTED:
SAMPLE DESCRIPTION: NOT AVAILABLE; SAMPLE ID#5810286A		

PARAMETER	UNIT	RESULT	G / S	RDL	DATE ANALYZED	INITIAL	DATE PREPARED
Helium (He)	%	0.12		0.01	May 08, 2024	BD	Apr 18, 2024
Hydrogen (H2)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Oxygen (O2)	%	20.84		0.01	May 08, 2024	BD	Apr 18, 2024
Nitrogen (N2)	%	78.0		0.1	May 08, 2024	BD	Apr 18, 2024
Carbon Dioxide (CO2)	%	1.00		0.01	May 08, 2024	BD	Apr 18, 2024
Hydrogen Sulphide (H2S)	%	<0.0001		0.0001	May 08, 2024	BD	Apr 18, 2024
Methane (C1)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Ethane (C2)	%	<0.01		0.01	May 08, 2024	BD	Apr 18, 2024
Propane (C3)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
I-Butane (IC4)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
N-Butane (NC4)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
I-Pentane (IC5)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
N-Pentane (NC5)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Hexanes (C6)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Heptanes (C7)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Octanes (C8)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Nonanes (C9)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024
Decanes+ (C10+)	%	<0.001		0.001	May 08, 2024	BD	Apr 18, 2024

COMMENTS:

RDL - Reported Detection Limit; G / S - Guideline / Standard  
Analysis Conducted Using GPA 2286-14 (Modified)

Certified By: \_\_\_\_\_



## Method Summary

CLIENT NAME: PARSONS

AGAT WORK ORDER: 24C146985

PROJECT:

ATTENTION TO: KRZYSTOF WOZNAK

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Occupational Hygiene Analysis			
Helium (He)	HC-0160	GPA 2286-14	GC/TCD/FID
Hydrogen (H2)	HC-0160	GPA 2286-14	GC/TCD/FID
Oxygen (O2)	HC-0160	GPA 2286-14	GC/TCD/FID
Nitrogen (N2)	HC-0160	GPA 2286-14	GC/TCD/FID
Carbon Dioxide (CO2)	HC-0160	GPA 2286-14	GC/TCD/FID
Hydrogen Sulphide (H2S)	HC-0160	GPA 2286-14	GC/TCD/FID
Methane (C1)	HC-0160	GPA 2286-14	GC/TCD/FID
Ethane (C2)	HC-0160	GPA 2286-14	GC/TCD/FID
Propane (C3)	HC-0160	GPA 2286-14	GC/TCD/FID
I-Butane (IC4)	HC-0160	GPA 2286-14	GC/TCD/FID
N-Butane (NC4)	HC-0160	GPA 2286-14	GC/TCD/FID
I-Pentane (IC5)	HC-0160	GPA 2286-14	GC/TCD/FID
N-Pentane (NC5)	HC-0160	GPA 2286-14	GC/TCD/FID
Hexanes (C6)	HC-0160	GPA 2286-14	GC/FID
Heptanes (C7)	HC-0160	GPA 2286-14	GC/FID
Octanes (C8)	HC-0160	GPA 2286-14	GC/FID
Nonanes (C9)	HC-0160	GPA 2286-14	GC/FID
Decanes+ (C10+)	HC-0160	GPA 2286-14	GC/FID

**DATA QUALITY REVIEW CHECKLIST**

Consultant: <u>Parsons Inc.</u>	Sampling Date: <u>2024/04/09</u>
Location: <u>1620 - 14th Avenue NW, Calgary, AB</u>	Laboratory : <u>AGAT Laboratories, Calgary, AB</u>
Consultant Project Number: <u>10-12832</u>	Sample Submission Number: <u>24T134519</u>

Are All Laboratory QC Samples Within Acceptance Criteria (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Surrogate Recovery	<i>X</i>			<i>All lab QC met acceptance criteria.</i>
Method Blank Concentration	<i>X</i>			
Matrix Duplicate RPD	<i>X</i>			
Matrix Spike Recovery			<i>X</i>	
Other Quality Control Data	<i>X</i>			


Are All Field QC Samples Within Alert Limits (Yes, No, Not Applicable)?

	Yes	No	NA	Comments
Equipment Blank Concentration			<i>X</i>	<i>No field QC samples were submitted.</i>
Trip Blank Concentration			<i>X</i>	
Field Duplicate RPD			<i>X</i>	

Has CoA been signed off (Yes/No)?:	<u>Yes</u>
Were all samples analyzed within hold times (Yes/No)?:	<u>Yes</u>
All volatiles samples methanol extracted, if required, within 48 hours (Yes, No or N/A)?:	<u>N/A</u>
Is Chain of Custody completed and signed (Yes/No)?:	<u>Yes</u>
Were sample temperatures acceptable when they reached lab (Yes/No)?:	<u>N/A</u>

Is data considered to be reliable (Yes/No)?: Yes  
 If answer is "No", describe and provide rationale:

Performed by (Print): Danielle Smith  
 Reviewed by (Print): Michelle Patterson  
 Reviewed date: 2024/04/30

Reviewed by (Signature): 



CLIENT NAME: PARSONS  
Unit 510, 214 -11 Avenue SW  
Calgary, AB T2R 0K1  
(403) 294-4200

ATTENTION TO: Michelle Patterson; Rebecca Neufeld

PROJECT: 10-12832

AGAT WORK ORDER: 24T134519

AIR QUALITY MONITORING REVIEWED BY: Theresa Stephenson, Manager of Technical Services

DATE REPORTED: Apr 25, 2024

PAGES (INCLUDING COVER): 9

VERSION\*: 1

Should you require any information regarding this analysis please contact your client services representative at (905) 712-5100

\*Notes

**Disclaimer:**

- All work conducted herein has been done using accepted standard protocols, and generally accepted practices and methods. AGAT test methods may incorporate modifications from the specified reference methods to improve performance.
- All samples will be disposed of within 30 days after receipt unless a Long Term Storage Agreement is signed and returned. Some specialty analysis may be exempt, please contact your Client Project Manager for details.
- AGAT's liability in connection with any delay, performance or non-performance of these services is only to the Client and does not extend to any other third party. Unless expressly agreed otherwise in writing, AGAT's liability is limited to the actual cost of the specific analysis or analyses included in the services.
- This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
- The test results reported herewith relate only to the samples as received by the laboratory.
- Application of guidelines is provided "as is" without warranty of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. AGAT assumes no responsibility for any errors or omissions in the guidelines contained in this document.
- All reportable information as specified by ISO/IEC 17025:2017 is available from AGAT Laboratories upon request.
- For environmental samples in the Province of Quebec: The analysis is performed on and results apply to samples as received. A temperature above 6°C upon receipt, as indicated in the Sample Reception Notification (SRN), could indicate the integrity of the samples has been compromised if the delay between sampling and submission to the laboratory could not be minimized.



## Air Quality Summary

AGAT WORK ORDER: 24T134519

PROJECT: 10-12832

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: PARSONS

SAMPLING SITE:

ATTENTION TO: Michelle Patterson; Rebecca Neufeld

SAMPLED BY:

Parameter	Unit	Number of Samples	Peak Reading	Network Average
Benzene	µg/m3	2	11.80	5.90
Toluene	µg/m3	2	1.66	0.83
Ethylbenzene	µg/m3	2	<0.87	<0.87
m&p-Xylene	µg/m3	2	1.4	<1.3
o-Xylene	µg/m3	2	<0.87	<0.87
Total Xylenes	µg/m3	2	<1.8	<1.8
1,2-Dichloroethane	µg/m3	2	<0.41	<0.41
Naphthalene	µg/m3	2	<5.2	<5.2
C6-C8 Aliphatic	µg/m3	2	<15	<15
>C8-C10 Aliphatic	µg/m3	2	<15	<15
>C10-C12 Aliphatic	µg/m3	2	477	239
>C12-C16 Aliphatic	µg/m3	2	<15	<15
C6-C8 Aromatic	µg/m3	2	20	<15
>C8-C10 Aromatic	µg/m3	2	<15	<15
>C10-C12 Aromatic	µg/m3	2	<15	<15
>C12-C16 Aromatic	µg/m3	2	<15	<15
C6-C10 (F1)	µg/m3	2	20	<15
>C10-C16 (F2)	µg/m3	2	477	239
4-Bromofluorobenzene	%	2	112	99



## Certificate of Analysis

AGAT WORK ORDER: 24T134519

PROJECT: 10-12832

5835 COOPERS AVENUE  
 MISSISSAUGA, ONTARIO  
 CANADA L4Z 1Y2  
 TEL (905)712-5100  
 FAX (905)712-5122  
<http://www.agatlabs.com>

CLIENT NAME: PARSONS

ATTENTION TO: Michelle Patterson; Rebecca Neufeld

SAMPLING SITE:

SAMPLED BY:

### BTEX/F1/F2 Fractionation + 1,2-DCA & Napthalene in Air (Canister) (µg/m3)

DATE RECEIVED: 2024-04-10

DATE REPORTED: 2024-04-25

Parameter	Unit	240409SV101		240409SV324	
		G / S	RDL	G / S	RDL
pressure upon receipt	inHg		-7		-8
Benzene	µg/m3		0.50	11.8	<0.50
Toluene	µg/m3		0.75	1.66	<0.75
Ethylbenzene	µg/m3		0.87	<0.87	<0.87
m&p-Xylene	µg/m3		1.3	1.4	<1.3
o-Xylene	µg/m3		0.87	<0.87	<0.87
Total Xylenes	µg/m3		1.8	<1.8	<1.8
1,2-Dichloroethane	µg/m3		0.41	<0.41	<0.41
Napthalene	µg/m3		5.2	<5.2	<5.2
C6-C8 Aliphatic	µg/m3		15	<15	<15
>C8-C10 Aliphatic	µg/m3		15	<15	<15
>C10-C12 Aliphatic	µg/m3		15	477	<15
>C12-C16 Aliphatic	µg/m3		15	<15	<15
C6-C8 Aromatic	µg/m3		15	20	<15
>C8-C10 Aromatic	µg/m3		15	<15	<15
>C10-C12 Aromatic	µg/m3		15	<15	<15
>C12-C16 Aromatic	µg/m3		15	<15	<15
C6-C10 (F1)	µg/m3		15	20	<15
>C10-C16 (F2)	µg/m3		15	477	<15
Surrogate	Unit	Acceptable Limits			
4-Bromofluorobenzene	%		70-130	112	85

Comments: RDL - Reported Detection Limit; G / S - Guideline / Standard

5795023-5795024 BTEX and fractionation analysis was performed from an air canister sample, using a Cold Vapor Trap preconcentrator and GC/MSD.

Analysis performed at AGAT Toronto (unless marked by \*)

Certified By:

## Quality Assurance

 CLIENT NAME: PARSONS  
 PROJECT: 10-12832  
 SAMPLING SITE:

 AGAT WORK ORDER: 24T134519  
 ATTENTION TO: Michelle Patterson; Rebecca  
 SAMPLED BY:

### Air Quality Monitoring

RPT Date: Apr 25, 2024			DUPLICATE			Method Blank	REFERENCE MATERIAL			METHOD BLANK SPIKE		MATRIX SPIKE		
PARAMETER	Batch	Sample Id	Dup #1	Dup #2	RPD		Measured Value	Acceptable Limits		Recovery	Acceptable Limits		Recovery	Acceptable Limits
						Lower		Upper	Lower		Upper	Lower		Upper

**BTEX/F1/F2 Fractionation + 1,2-DCA & Napthalene in Air (Canister) (µg/m3)**

Benzene	5805275	<0.50	0.51	NA	< 0.50	81%	60%	140%	96%	50%	140%	NA
Toluene	5805275	5.92	5.99	1.3%	< 0.75	125%	60%	140%	105%	50%	140%	NA
Ethylbenzene	5805275	1.82	2.04	NA	< 0.87	124%	60%	140%	107%	50%	140%	NA
m&p-Xylene	5805275	7.0	6.9	1.2%	< 1.3	128%	60%	140%	112%	50%	140%	NA
o-Xylene	5805275	3.04	3.08	NA	< 0.87	133%	60%	140%	117%	50%	140%	NA
1,2-Dichloroethane	5805275	<0.41	<0.41	NA	< 0.41	91%	60%	140%	105%	50%	140%	NA
Napthalene	5805275	<5.2	<5.2	NA	< 5.2	99%	60%	140%	97%	50%	140%	NA

Certified By: \_\_\_\_\_





## Method Summary

CLIENT NAME: PARSONS

AGAT WORK ORDER: 24T134519

PROJECT: 10-12832

ATTENTION TO: Michelle Patterson; Rebecca

SAMPLING SITE:

SAMPLED BY:

PARAMETER	AGAT S.O.P	LITERATURE REFERENCE	ANALYTICAL TECHNIQUE
Air Quality Monitoring			
pressure upon receipt			N/A
Benzene	AQM-248-16000	modified from EPA TO15	GC/MS
Toluene	AQM-248-16000	modified from EPA TO15	GC/MS
Ethylbenzene	AQM-248-16000	modified from EPA TO15	GC/MS
m&p-Xylene	AQM-248-16000	modified from EPA TO15	GC/MS
o-Xylene	AQM-248-16000	modified from EPA TO15	GC/MS
Total Xylenes	AQM-248-16000	modified from EPA TO15	CALCULATION
1,2-Dichloroethane	AQM-248-16000	modified from EPA TO15	GC/MS
Naphthalene	AQM-248-16000	modified from EPA TO15	GC/MS
C6-C8 Aliphatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C8-C10 Aliphatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C10-C12 Aliphatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C12-C16 Aliphatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
C6-C8 Aromatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C8-C10 Aromatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C10-C12 Aromatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C12-C16 Aromatic	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
C6-C10 (F1)	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
>C10-C16 (F2)	AQM-248-16001	modified from MASS APH, Rev. 1, Dec. 2009	GC/MS
4-Bromofluorobenzene	AQM-248-16000	modified from EPA TO15	GC/MS





# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

### RECEIVING BASICS - Shipping

Company/Consultant: Parsons Inc.

Courier: D/S Prepaid Collect

Waybill# \_\_\_\_\_

Branch: EDM GP FN FM RD VAN LYD FSJ EST SASK Other: C

If multiple sites were submitted at once: Yes  No

Custody Seal Intact: Yes  No

TAT: <24hr 24-48hr 48-72hr  Other \_\_\_\_\_

Cooler Quantity: \_\_\_\_\_

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No

Inorganic Tests (Please Circle): Mibi, BOD, Nitrate/Nitrite, Turbidity, Color, Microtox, Ortho PO4, Tedlar Bag, Residual Chlorine, Chlorophyll\*, Chloroamines\*

Earliest Expiry: \_\_\_\_\_

Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  Precaution Taken: \_\_\_\_\_

Legal Samples: Yes

International Samples: Yes

Tape Sealed: Yes

Coolant Used: Icepack Bagged Ice Free Ice Free Water

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

FROZEN (Please Circle if samples received Frozen) N/A

1 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: \_\_\_\_\_

Samples Damaged: Yes  No  If YES why?

No Bubble Wrap Frozen Courier

Other: \_\_\_\_\_

Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No

Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_

CPM Initial \_\_\_\_\_

General Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



# AGAT Laboratories

## SAMPLE INTEGRITY RECEIPT FORM

### RECEIVING BASICS - Shipping

Company/Consultant: Parsons Inc.

Courier: D/O Prepaid Collect

Waybill# \_\_\_\_\_

Branch: EDM GP FN FM RD VAN LYD FSJ EST SASK Other: C

If multiple sites were submitted at once: Yes  No

Custody Seal Intact: Yes  No

TAT: <24hr 24-48hr 48-72hr  Other \_\_\_\_\_

Cooler Quantity: \_\_\_\_\_

### TIME SENSITIVE ISSUES - Shipping

ALREADY EXCEEDED HOLD TIME? Yes  No

Inorganic Tests (Please Circle): Mibi , BOD , Nitrate/Nitrite , Turbidity , Color , Microtox , Ortho PO4 , Tedlar Bag , Residual Chlorine , Chlorophyll\* , Chloroamines\*

Earliest Expiry: \_\_\_\_\_

Hydrocarbons: Earliest Expiry \_\_\_\_\_

### SAMPLE INTEGRITY - Shipping

Hazardous Samples: YES  NO  Precaution Taken: \_\_\_\_\_

Legal Samples: Yes  No

International Samples: Yes  No

Tape Sealed: Yes  No

Coolant Used: Icepack  Bagged Ice  Free Ice  Free Water

Temperature (Bottles/Jars only) N/A if only Soil Bags Received

FROZEN (Please Circle if samples received Frozen) N/A

1 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 2 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

3 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 4 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

5 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 6 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

7 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 8 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

9 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C 10 (Bottle/Jar) \_\_\_ + \_\_\_ + \_\_\_ = \_\_\_ °C

(If more than 10 coolers are received use another sheet of paper and attach)

### LOGISTICS USE ONLY

Workorder No: \_\_\_\_\_

Samples Damaged: Yes  No  If YES why?

No Bubble Wrap Frozen Courier

Other: \_\_\_\_\_

Account Project Manager: \_\_\_\_\_ have they been notified of the above issues: Yes  No

Whom spoken to: \_\_\_\_\_ Date/Time: \_\_\_\_\_

CPM Initial \_\_\_\_\_

General Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\* Subcontracted Analysis (See CPM)