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Limited Phase 2
Environmental Site Assessment

1120 Cooke Boulevard
Burlington, Ontario

Prepared for:

Adi Developments (Masonry) Inc.
110 Burloak Drive, Suite 700
Burlington, Ontario
L7L 6B2

File: 23061A ver1

June 2023

EXECUTIVE SUMMARY

Landtek Limited (Landtek) is pleased to submit this Limited Phase 1 Environmental Site Assessment (ESA) report for the property located at 1120 Cooke Boulevard (formerly part of 101 Masonry Court) in Burlington, Ontario (the Site). The work was initiated following authorization to proceed from Ms. Ayza Anwar of the Adi Developments (the Client) in March 2023.

The Limited Phase 2 ESA was completed in general accordance described in Ontario Regulation 153/04 (O. Reg. 153/04) as amended. The soil and groundwater quality standards and regulations came into effect in 2011 (Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011).

Based on the testing completed during the course of this investigation, the findings of the Limited Phase 2 ESA all shallow soil samples tested met O.Reg. 153/04 Table 3 RPI SCS.

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1.0 INTRODUCTION

Landtek Limited (Landtek) is pleased to submit this Limited Phase 1 Environmental Site Assessment (ESA) report for the property located at 1120 Cooke Boulevard (formerly part of 101 Masonry Court) in Burlington, Ontario (the Site). The work was initiated following authorization to proceed from Ms. Ayza Anwar of the Adi Developments (the Client) in March 2023.

The Limited Phase 2 ESA was completed in general accordance with CSA Standard Z769-00 as well as current guidelines described in Ontario Regulation 153/04 (O. Reg. 153/04) as amended. The soil and groundwater quality standards and regulations came into effect in 2011 (Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011).

The Limited Phase 2 ESA covers physical sampling of soils and chemical analyses where potential risks of environmental liability are evident from previous findings or past use of the property.

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2.0 SITE DESCRIPTION

The Site is identified as 1120 Cooke Boulevard, formerly southwest portion of 101 Masonry Court, located in City of Burlington, Ontario. The Site is a currently undeveloped and has been used as temporary show office for Station West residential development and as a construction staging area for the adjacent Station West residential development.

Record of Site Condition Property (RSC Property) is identified as 101 Masonry Court in Burlington, Ontario. The RSC property was a total area of about 5.1 hectares (*which included the Site – 1120 Cooke Boulevard, located on the southwest corner*). The Site is located on the north side of Masonry Court and is bound by vacant land and GO Transit railway lines to the north, vacant industrial land to the east, and Waterdown Road to the west.



Figure 1 – Site Location

3.0 PREVIOUS ENVIRONMENTAL REPORTS

3.1 Phase One ESA (2016)

The following report was completed by Landtek for Adi Developments (which 1120 Cooke was a small portion see **Figure 1**):

- Phase One Environmental Site Assessment, 101 Masonry Court, City of Burlington, Ontario, prepared for the Adi Development Group, prepared by Landtek Limited, File: 14190, dated June 14, 2016" (Landtek 2016)

The following summary outlines the findings of the Phase One ESA:

- No structures were identified on the Site (*1120 Cooke*) at the time of the site inspection. A barn or house structure was historically located north of the Site circa 1986 and 1992.

- The Site (1120 Cooke) and property to the east (101 Masonry Court) were historically industrial use for cement block and brick manufacturing from approximately 1956 to 2002.

- The former plant operation east of the Site was was covered with gravel and crushed bricks. A large stockpile (approximately 7,000 m^3) of crushed concrete, gravel, and bricks is located on the northeast of the Site (*101 Masonry Court portion not on 1120 Cooke*).

- No indication of USTs or ASTs were observed on the Site (1120 Cooke) and there were no observed vent pipes, filler pipes, or ground depressions that could be associated with the presence of USTs.

3.2 Phase Two ESA (2016)

A Phase Two Environmental Site Assessment was required to investigate the Areas of Potential Environmental Concern on the Site prior to the submission of a Record of Site Condition.

Based on the results of the subsurface investigation conducted at the Site, the following findings are presented:

1. The Phase Two ESA on consisted of a total of fifteen boreholes, thirteen of which were completed as monitoring wells, and the excavation of forty-one test pits were located on the existing Station West development to the east of the Site.

2. The general stratigraphy of the Site consisted of variable sand, gravel and silt fill overlying sand, silty sand, silt and till.

3. Based on the relative groundwater elevations, the groundwater below the Site was assessed to flow in a north/northwest direction. Regional groundwater flow is expected to generally flow to the south towards and Lake Ontario.

4. No soil or groundwater exceedance were identified for volatile organic compounds, petroleum hydrocarbons, polycyclic aromatic hydrocarbons and metals and inorganic for the Site.

The Phase Two ESA has been completed in accordance with Regulation 153/04 (as amended)

and was used to support the filing of a Record of Site Condition (RSC) No. 222207.

3.3 Record of Site Condition No 222207

Record of Site Condition Property (RSC Property) is identified as 101 Masonry Court in Burlington, Ontario. The RSC property was a total area of about 5.1 hectares (*which included the Site – 1120 Cooke Boulevard, located on the southwest corner*). The Site is located on the north side of Masonry Court and is bound by vacant land and GO Transit railway lines to the north, vacant industrial land to the east, and Waterdown Road to the west.

A total of 20,865 tonnes (13,040 m^3) of soil impacted with various metals, inorganic parameters, Polycyclic aromatic hydrocarbons (PAH) and petroleum hydrocarbons (PHC) parameters was excavated and transported off the RSC Property to an MOE licenced landfill. No contaminated material was identified on the *current Site -1120 Cook Boulevard parcel*.

The soil was imported to the RSC Property for the express purpose of restoring the RSC Property back to approximately the original grade. A total of 17,187 m3 silty clay was also imported to the Phase Two Property and placed as engineered fill within the proposed residential redevelopment. No fill has been placed on 1120 Cooke Boulevard parcel as part of the RSC.

The remedial activities were completed in accordance with O. Reg. 153/04 (as amended) and was used to support the filing of RSC No. 222207 for the proposed residential/parkland/ institutional (RPI) land use.

3.4 Update Phase 1 ESA (2021)

The Update Phase 1 ESA site visit was conducted on April 17, 2021 for 1120 Cooke Boulevard (*former 101 Masonry Court – southwest corner*), Burlington, Ontario (the Site), in accordance with O.Reg. 153/04. The investigation included a review of current and historical information for the Site and adjoining properties.

The Site is identified as 1120 Cooke Boulevard, formerly the southwest portion of 101 Masonry Court, and is located in City of Burlington, Ontario. The Site is a currently undeveloped and has been used as temporary show office for Station West residential development and as a construction staging area for the adjacent Station West residential development.

3.5 Hydrogeological Investigation (2022)

The proposed development is to comprise of two, 36-storey towers and a 26-storey tower connected by a four-storey podium. The structure will include a maximum of five levels of basement parking. The footprint of the proposed structure is to cover the full site area.

The Hydrogeological Investigation is required to assess the current site groundwater conditions, determine potential development/post development effects of the proposed development; estimate the potential dewatering requirement, and provide monitoring and mitigation plans for the development.

Depths to groundwater in all monitoring wells were measured January 24, February 15, March 23, April 14, May 10, June 23, and October 24, 2022. Based on the measured groundwater levels recorded, depth to groundwater ranged from 3.09 mbgs to 5.53 mbgs.

Laboratory results for analyzed groundwater samples collected from three (3) monitoring wells at the Site were compared to the City of Burlington Municipal Storm Sewer Discharge Limits Guidelines. The following parameters exceeded guideline values: Biological Oxygen Demand, Chloroform, Phenols, Total Chromium, Total Manganese, Total Nickel, Total Phosphorous, Total Suspended Solids, and Total Zinc.

3.6 Update Phase 1 ESA (2023)

The Update Phase 1 ESA site visit was conducted on April/May 2023 for 1120 Cooke Boulevard (former 101 Masonry Court – southwest corner), Burlington, Ontario (the Site), in accordance with O.Reg. 153/04. The investigation included a review of current and historical information for the Site and adjoining properties.

At the time of Landtek's Site visit, the Site vacant property currently used as a temporary show office and construction staging area for the adjacent Station West Phase 1 development. The surrounding properties were mostly commercial and residential.

The following summary outlines the findings of the Phase 1 ESA:

- The Site is identified as 1120 Cooke Boulevard, formerly southwest portion of 101 Masonry Court, located in City of Burlington, Ontario. The Site is a currently undeveloped and has been used as temporary show office for Station West residential development and as a former construction staging area for the adjacent Station West residential development.
- Large stockpile of soil and concrete sewer pipe located in the southwest corner of the Site, approximately 100m^3 , to be used during construction.
-

Based on the Phase One ESA findings, it is the opinion of Landtek that further action or evaluation be undertaken at this time:

- Complete a limited Phase 2 ESA (shallow soil sampling), to assess construction staging activities and whether these activities have had an environmental impact to Site.

Stockpiles of material are from excess soils generated during the construction activities at Stationwest Phase I (101 Masonary Court) and will be re-used during the construction of Stationwest Phase II (1120 Cooke Boulevard).

4.0 SCOPE OF WORK

The objectives of the Limited Phase 2 ESA were: (1) review available background environmental information regarding the Site; (2) undertake sampling of subsurface soils and groundwater (if encountered) by means of boreholes, and monitoring wells; (3) carry out chemical testing of soil and groundwater (if encountered) to assist in the assessment of existing conditions; and, (4) evaluate and report on the findings to present the existing environmental conditions of the Site.

The following scope of work was undertaken by Landtek:

- Obtaining public utility locates and utilizing a private underground utility locate contractor to locate on-Site utilities that would not be traced by the public utility locators (such as private lighting, private sewer and water lines, etc.);
- Advancing six (6) hand auger to a maximum depth of approximately 0.6 metres below ground surface (m bgs);
- Collection soil samples (i.e., fill material, groundwater table, etc) from varying depths;
- The purpose of the test locations was for the collection of soil samples for chemical analyses;
- Collecting soil samples for laboratory analysis of Petroleum Hydrocarbons Fraction 1 to Fraction 4 (PHC F1-F4), benzene, toluene, ethyl benzene & total xylenes, (BTEX), metals and inorganic parameters (M&I) and/or polychlorinated biphenyls
- Interpretation of the laboratory results by comparison with the applicable O. Reg. 153/04, Site Condition Standards (SCS); and,
- Preparation of this report.

All environmental sampling and chemical analysis were conducted pursuant to Ministry of the Environment, Conservation and Parks (MOE) standards.



Figure 2 : Sample Locations

5.0 SELECTION OF SITE CONDITION STANDARDS

Under the O. Reg. 153/04, Part XV.1 of the Environmental Protection Act, the selection of Site Condition Standards (SCS) against which laboratory results are compared is based on a number of criteria. The SCS are published in the MOE Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act.

Landtek considered the following criteria for the selection of the applicable SCS for the Site:

- *Land Use*: The current land is residential. Landtek understands that the Site will be utilized as residential and/or commercial land use. There will be no change to a more sensitive land-use is anticipated;
- *Potable or non-potable groundwater*: The Site is serviced by municipal water but there maybe adjacent properties within 250 m of the Site are inferred not to be serviced by a municipal water source;
- *Proximity to surface water body*: The Site is not located within 30 metres (m) of a waterbody;
- *Proximity to areas of natural significance or environmentally sensitive areas*: The Site is not located in proximity to an area of natural significant or an environmentally sensitive area;
- *Depth to bedrock*: A property **is** not considered a shallow soil property. If one-third or more of the property consists of soil depths of 2 metres below ground surface (mbgs) or less. Based on the subsurface conditions observed as part of this investigation, the depth to bedrock is considered to be greater than 2 m as shallow soil was not observed at any locations investigated;
- *pH of soil*: Since the pH values were greater than 5 and less than 9 the Site is not considered a sensitive site for the purpose of this assessment; and,
- *Soil texture*: Based on the results of the drilling, the subsurface conditions encountered, and the results of the grain size distribution completed, the soil texture is considered to be coarse as defined in O. Reg.153/04.

Based on the above information, the O. Reg. 153/04 Table 3 Generic Site Condition Standards (SCS) for Use in a Non-Potable Ground Water Condition and Residential/Parkland/Institutional (RPI) property use (O. Reg. 153/04 Table 3 SCS) were selected as the applicable standards for the Site.

6.0 METHODOLOGY

All work was completed in accordance with acceptable industry standards and all soil and groundwater samples were submitted to and analyzed by Paracel Laboratories, an environmental analytical laboratory accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) for the chemical parameters analyzed, including PHC F1-F4, BTEX and metals & inorganics.

6.1 Soil Sampling

Six (6) hand auger sample locations (TP1 to TP6) were advanced on the Site on May 29, 2023 by Landtek to a maximum depth of 0.6 m.

The soil was logged by qualified Landtek personnel using the Unified Soil Classification System (USCS) Standard Practices for Description and Identification of Soils, Visual Manual Procedure (ASTM D2488-09a), noting stratigraphy, subsurface conditions, and any physical evidence of soil quality impacts.

Multiple soil samples were collected at discrete intervals at each testpit location. Soil samples submitted for analysis were selected based on field-screening of all of the samples collected from each borehole (e.g., unique soil characteristics or visible staining).

Each soil sample collected from a discrete interval with depth was split into two (2) portions; one (1) portion was placed into laboratory-supplied sample jars for potential laboratory analysis, and the other portion was placed in a sealable plastic bag for field-screening vapour measurement. PHC F1 – F4 and VOC samples were collected using a Terracore syringe precalibrated to approximately 5 grams of wet weight soil and placed directly into laboratory-prepared vials containing methanol preservative.

Prior to taking the field-screening vapour readings, the soil within the sealed plastic bags was agitated and allowed to equilibrate for a minimum of 20 minutes at 15°C or greater. A vapour measurement was collected by inserting the collection tube of the RKI Eagle 2 into the plastic bag. The peak headspace reading for each sample was recorded. One (1) to three (3) soil samples per borehole was selected for submission for laboratory analysis based on field-screening vapour measurements and/or field observations. Samples were stored on ice until delivery to the laboratory following standard chain-of-custody protocols.

7.0 QUALITY ASSURANCE / QUALITY CONTROL (QA/QC)

All field work was performed in accordance with Landtek quality procedures and standard operating procedures (SOPs). The procedures included the following:

- Appropriate measures to avoid cross contamination and decontamination where necessary;
- Collection of all samples in laboratory provided containers and placement of containers in coolers containing ice;
- The field conditions, as documented on the borehole field logs and results of field screening were reviewed to confirm that the appropriate samples were selected for laboratory analysis and that samples were scheduled for analysis for the required chemical parameters;
- The samples listed on the chain-of-custody form were cross-checked with the samples being shipped to the contract laboratory. A further check was carried out to ensure that the relevant analytical parameters had been requested for analysis;
- All coolers contained ice packs along with the sample containers to maintain the minimum temperature required on arrival at the contract laboratory.

The overall QA/QC results are considered to be acceptable and support the reliability of the results of the field samples analysed.

8.0 RESULTS AND DISCUSSION

8.1 Soil

8.1.1 Soil Conditions

Based on the results of the Geotechnical and Hydrogeological Investigations carried out at the Site, a brief description of the general surficial geology of the Site, in order of depth is summarized in the following sections. Boreholes MW1, MW2S, MW2D and MW3 were completed at depths ranging from approximately 9.0 to 15.0 mbgs .

The borehole information is generally consistent with the geological data. The ground lithologies encountered by the boreholes are discussed further in the following sections.

Fill Materials

Fill materials were encountered in all boreholes extending to depths of between approximately 0.9 m in MW3 to 1.5 m in MW1 and MW2S/MW2D. The fill materials generally comprised of sand and gravel with silt.

Silty Sand

Silty Sand was encountered underlying the Fill deposit and extends to a depth of approximately 3.0 m below existing ground level. This layer contains trace silt and is damp to wet.

Clayey Silt Till

Clayey Silt Till was encountered underlying the Silty Sand deposits in all monitoring wells and extending to a depth of approximately 9.2 m below existing ground level. The till contains some sand, trace gravel, red shale fragments, moist, and is brown.

Bedrock

Red shale of the Queenston Formation was encountered underlying the till deposits at depths of approximately 9.2 m below existing ground level in all monitoring wells.

8.1.2 Results of Laboratory Analysis - Soil

The summary of test results for soils is shown in Table 1 compared to MOE Table 3 RPI Site Condition Standards. Laboratory certificates of analysis are included in **Appendix A**. Samples were selected based on location and depth of potential areas of concern as well as olfactory indicators, where possible.

The summary of test results for soils is shown in **Table 1**. Laboratory certificates of analysis are included in **Appendix A**. Samples were selected based on location and depth of potential areas of concern as well as olfactory indicators, where possible.

Table 1: Schedule of Chemical Analyses and Summary of Test Results for Soils

Sample	Depth (m bgs)	Analyses	Exceedances		
			Parameter	Sample Results (µg/g)	Table 2 & 3 SCS** (µg/g)
TP1 SS1	0.0-0.6	M&I, BTEX & PHC and PCBs	--	No exceedances	--
TP2 SS1	0.0-0.6	M&I, BTEX & PHC	--	No exceedances	--
TP3 SS1	0.0-0.6	M&I, BTEX & PHC and PCBs	--	No exceedances	--
TP4 SS1	0.0-0.6	M&I, BTEX & PHC	--	No exceedances	--
TP5 SS1	0.0-0.6	M&I, BTEX & PHC and PCBs	--	No exceedances	--
TP6 SS1	0.0-0.6	M&I, BTEX & PHC	--	No exceedances	--

** Sample results compared with *Soil, Ground Water, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act', April 2011. Table 3 Generic Site Condition Standards (SCS) for Use Within in a Non-Potable Ground Water Condition for coarse grained soils and residential/parkland/institutional (RPI) property use (O. Reg. 153/04 Table 3 SCS) were selected as the applicable standards for the Site.*

M&I – Metals and Inorganic Parameters
PHC F1-F4 – Petroleum Hydrocarbons Fractions F1-F4
BTEX – Benzene ,toluene, ethylbenzene & xylenes
PCBs – Polychlorinated biphenyls (PCB)

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9.0 FINDINGS AND CONCLUSIONS

Based on the testing completed during the course of this investigation, the findings of the Limited Phase 2 ESA all shallow soil samples tested met O.Reg. 153/04 Table 3 RPI SCS.

10.0 CLOSURE

We trust this report is satisfactory for your purposes at this time. Should you have any questions, please do not hesitate to contact our office.

LANDTEK LIMITED

Paul Blunt, P.Eng., QP_{ESA}



11.0 LIMITATION OF THE REPORT

This report was prepared for the sole use of the Client and their legal counsel, and is intended to provide an evaluation of the current environmental conditions at the subject site. Any use that a third party makes of this report, or decisions made based on it, are the responsibility of the third party. Landtek Limited accepts no responsibility for damages of any type suffered by the third party as a result of actions or decisions made based on this report.

The conclusions given in this report are based on information determined at the borehole locations. Subsurface conditions, ground water conditions and contaminant concentrations between and beyond the boreholes may be different from those encountered at the borehole locations, and conditions may become apparent during construction that could not be detected or anticipated at the time of the subsurface investigation. It is recommended practice that Landtek be retained during construction to confirm that the subsurface conditions throughout the site are consistent with the conditions encountered in the boreholes.

The conclusions and recommendations given in this report are based on information obtained from various sources noted, subsurface investigation, and a visual examination of the site. It is based on the conditions of the subject property at the time of the field investigation supplemented by a review of historical information to assess environmental conditions at the site reported. Landtek assumes that information provided by others is factual and accurate, and accepts no responsibility for any deficiency, misstatement, of inaccuracy in this report from information provided by others.

This assessment should not be considered a comprehensive audit that outlines all environmental liabilities or eliminates all risks of encountering environmental problems in some portions of the site. There is no warranty expressed or implied by this report concerning the status of the study site.

The report has been prepared in accordance with generally accepted environmental study and/or engineering practices. No other warranties, either expressed or implied, are made as to the professional services provided under the terms of our contract and included in this report.

The objective of this report was to assess the environmental conditions at the site, with respect to existing environmental regulations within the applicable jurisdiction. Compliance of past owners with applicable local, provincial and federal government laws and regulations was not included in our contract for services.

The site history performed herein relies on information supplied by others, such as local, provincial and federal agencies as other consultants. No attempt has been made to independently verify the accuracy of such information, unless specifically noted in our report.

Should the site conditions change or additional background data become available after this report has been issued, Landtek Limited should be made aware of the information and be given an opportunity to reassess the findings if it relates to environmental concerns.

APPENDIX A

Laboratory CERTIFICATES OF ANALYSES
Including Laboratory QA/QC Data

Soil Results

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www.paracellabs.com

PARACEL LABORATORIES LTD. | TRUSTED. RESPONSIVE. RELIABLE.

Certificate of Analysis

Landtek Limited
205 Nebo Road, Unit 3
Hamilton, ON L8W 2E1
Attn: Paul Blunt

Client PO:
Project: 23061
Custody: 64557

Report Date: 13-Jun-2023
Order Date: 29-May-2023

Order #: 2322054

Revised Report

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2322054-01	TP1 SS1
2322054-02	TP2 SS1
2322054-03	TP3 SS1
2322054-04	TP4 SS1
2322054-05	TP5 SS1
2322054-06	TP6 SS1

Approved By:



Milan Ralitsch, PhD
Senior Technical Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	30-May-23	30-May-23
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	30-May-23	31-May-23
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	30-May-23	31-May-23
Conductivity	MOE E3138 - probe @25 °C, water ext	30-May-23	30-May-23
Cyanide, free	MOE E3015 - Auto Colour, water extraction	30-May-23	30-May-23
Mercury by CVAA	EPA 7471B - CVAA, digestion	30-May-23	31-May-23
PCBs, total	SW846 8082A - GC-ECD	13-Jun-23	13-Jun-23
pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	30-May-23	31-May-23
PHC F1	CWS Tier 1 - P&T GC-FID	30-May-23	31-May-23
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	30-May-23	31-May-23
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	30-May-23	31-May-23
SAR	Calculated	30-May-23	31-May-23
Solids, %	CWS Tier 1 - Gravimetric	30-May-23	31-May-23

Summary of Criteria Exceedances

(If this page is blank then there are no exceedances)

Only those criteria that a sample exceeds will be highlighted in red

Regulatory Comparison:

Paracel Laboratories has provided regulatory guidelines on this report for informational purposes only and makes no representations or warranties that the data is accurate or reflects the current regulatory values. The user is advised to consult with the appropriate official regulations to evaluate compliance. Sample results that are highlighted have exceeded the selected regulatory limit. Calculated uncertainty estimations have not been applied for determining regulatory exceedances.

Sample	Analyte	MDL / Units	Result	Reg 153/04 -T2 Ind/Com	Reg 153/04 -T2 Res/Park/Inst

Certificate of Analysis

Report Date: 13-Jun-2023

Client: **Landtek Limited**

Order Date: 29-May-2023

Client PO:

Project Description: 23061

	Client ID:	TP1 SS1	TP2 SS1	TP3 SS1	TP4 SS1	Criteria:	
	Sample Date:	29-May-23 09:00	29-May-23 09:00	29-May-23 09:00	29-May-23 09:00	Reg 153/04 -T2 Ind/Com	Reg 153/04 -T2 Res/Park/Inst
	Sample ID:	2322054-01	2322054-02	2322054-03	2322054-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	91.2	91.9	88.0	86.7	-	-
General Inorganics							
SAR	0.01 N/A	0.36	0.32	0.45	0.31	12 N/A	5 N/A
Conductivity	5 uS/cm	122	125	320	226	1.4 mS/cm	0.7 mS/cm
Cyanide, free	0.03 ug/g	<0.03	<0.03	<0.03	<0.03	0.051 ug/g	0.051 ug/g
pH	0.05 pH Units	7.71	-	7.69	7.64	5.00 - 9.00 pH Units	5.00 - 9.00 pH Units
Metals							
Antimony	1 ug/g	<1.0	<1.0	<1.0	<1.0	40 ug/g	7.5 ug/g
Arsenic	1 ug/g	5.0	3.7	5.4	4.1	18 ug/g	18 ug/g
Barium	1 ug/g	209	223	147	260	670 ug/g	390 ug/g
Beryllium	0.5 ug/g	0.9	0.7	1.0	0.7	8 ug/g	4 ug/g
Boron	5 ug/g	25.2	19.2	27.2	20.7	120 ug/g	120 ug/g
Boron, available	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	2 ug/g	1.5 ug/g
Cadmium	0.5 ug/g	<0.5	<0.5	<0.5	<0.5	1.9 ug/g	1.2 ug/g
Chromium (VI)	0.2 ug/g	<0.2	<0.2	<0.2	<0.2	8 ug/g	8 ug/g
Chromium	5 ug/g	25.1	19.7	51.3	21.0	160 ug/g	160 ug/g
Cobalt	1 ug/g	11.9	9.7	11.6	10.1	80 ug/g	22 ug/g
Copper	5 ug/g	6.0	<5.0	9.2	5.0	230 ug/g	140 ug/g
Lead	1 ug/g	8.5	5.4	21.6	6.4	120 ug/g	120 ug/g
Mercury	0.1 ug/g	<0.1	<0.1	<0.1	<0.1	0.27 ug/g	0.27 ug/g
Molybdenum	1 ug/g	<1.0	<1.0	<1.0	<1.0	40 ug/g	6.9 ug/g
Nickel	5 ug/g	27.3	21.7	27.1	22.8	270 ug/g	100 ug/g
Selenium	1 ug/g	<1.0	<1.0	<1.0	<1.0	5.5 ug/g	2.4 ug/g
Silver	0.3 ug/g	<0.3	<0.3	<0.3	<0.3	40 ug/g	20 ug/g
Thallium	1 ug/g	<1.0	<1.0	<1.0	<1.0	3.3 ug/g	1 ug/g

Certificate of Analysis

Report Date: 13-Jun-2023

Client: **Landtek Limited**

Order Date: 29-May-2023

Client PO:

Project Description: 23061

	Client ID:	TP1 SS1	TP2 SS1	TP3 SS1	TP4 SS1	Criteria:	
	Sample Date:	29-May-23 09:00	29-May-23 09:00	29-May-23 09:00	29-May-23 09:00	Reg 153/04 -T2 Ind/Com	Reg 153/04 -T2 Res/Park/Inst
	Sample ID:	2322054-01	2322054-02	2322054-03	2322054-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Metals							
Uranium	1 ug/g	<1.0	<1.0	<1.0	<1.0	33 ug/g	23 ug/g
Vanadium	10 ug/g	37.8	29.2	34.5	30.9	86 ug/g	86 ug/g
Zinc	20 ug/g	54.9	43.5	77.8	46.0	340 ug/g	340 ug/g
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.02 ug/g	0.02 ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05 ug/g	0.05 ug/g
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.2 ug/g	0.2 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.091 ug/g	0.091 ug/g
Toluene-d8	Surrogate	108%	108%	108%	108%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	25 ug/g	25 ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	26 ug/g	10 ug/g
F3 PHCs (C16-C34)	8 ug/g	<8	<8	<8	<8	240 ug/g	240 ug/g
F4 PHCs (C34-C50)	6 ug/g	<6	<6	<6	<6	3300 ug/g	2800 ug/g
PCBs							
PCBs, total	0.05 ug/g	<0.05	-	<0.05	-	0.78 ug/g	0.35 ug/g
Decachlorobiphenyl	Surrogate	120%	-	121%	-	-	-

Certificate of Analysis

Report Date: 13-Jun-2023

Client: **Landtek Limited**

Order Date: 29-May-2023

Client PO:

Project Description: 23061

	Client ID:	TP5 SS1	TP6 SS1			Criteria:	
	Sample Date:	29-May-23 09:00	29-May-23 09:00			Reg 153/04 -T2 Ind/Com	Reg 153/04 -T2 Res/Park/Inst
	Sample ID:	2322054-05	2322054-06				
	Matrix:	Soil	Soil				
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	90.5	94.2	-	-	-	-
General Inorganics							
SAR	0.01 N/A	0.19	0.29	-	-	12 N/A	5 N/A
Conductivity	5 uS/cm	148	164	-	-	1.4 mS/cm	0.7 mS/cm
Cyanide, free	0.03 ug/g	<0.03	<0.03	-	-	0.051 ug/g	0.051 ug/g
pH	0.05 pH Units	7.59	7.49	-	-	5.00 - 9.00 pH Units	5.00 - 9.00 pH Units
Metals							
Antimony	1 ug/g	<1.0	3.4	-	-	40 ug/g	7.5 ug/g
Arsenic	1 ug/g	3.8	3.5	-	-	18 ug/g	18 ug/g
Barium	1 ug/g	367	224	-	-	670 ug/g	390 ug/g
Beryllium	0.5 ug/g	0.7	0.7	-	-	8 ug/g	4 ug/g
Boron, available	0.5 ug/g	<0.5	<0.5	-	-	2 ug/g	1.5 ug/g
Boron	5 ug/g	19.7	16.7	-	-	120 ug/g	120 ug/g
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	1.9 ug/g	1.2 ug/g
Chromium	5 ug/g	20.3	18.3	-	-	160 ug/g	160 ug/g
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	-	8 ug/g	8 ug/g
Cobalt	1 ug/g	9.7	9.0	-	-	80 ug/g	22 ug/g
Copper	5 ug/g	<5.0	<5.0	-	-	230 ug/g	140 ug/g
Lead	1 ug/g	7.1	5.3	-	-	120 ug/g	120 ug/g
Mercury	0.1 ug/g	<0.1	<0.1	-	-	0.27 ug/g	0.27 ug/g
Molybdenum	1 ug/g	<1.0	<1.0	-	-	40 ug/g	6.9 ug/g
Nickel	5 ug/g	22.1	20.0	-	-	270 ug/g	100 ug/g
Selenium	1 ug/g	<1.0	<1.0	-	-	5.5 ug/g	2.4 ug/g
Silver	0.3 ug/g	<0.3	<0.3	-	-	40 ug/g	20 ug/g
Thallium	1 ug/g	<1.0	<1.0	-	-	3.3 ug/g	1 ug/g

Certificate of Analysis

Report Date: 13-Jun-2023

Client: **Landtek Limited**

Order Date: 29-May-2023

Client PO:

Project Description: 23061

	Client ID:	TP5 SS1	TP6 SS1			Criteria:	
	Sample Date:	29-May-23 09:00	29-May-23 09:00			Reg 153/04 -T2 Ind/Com	Reg 153/04 -T2 Res/Park/Inst
	Sample ID:	2322054-05	2322054-06				
	Matrix:	Soil	Soil				
	MDL/Units						
Metals							
Uranium	1 ug/g	<1.0	<1.0	-	-	33 ug/g	23 ug/g
Vanadium	10 ug/g	32.3	25.9	-	-	86 ug/g	86 ug/g
Zinc	20 ug/g	44.9	41.1	-	-	340 ug/g	340 ug/g
Volatiles							
Benzene	0.02 ug/g	<0.02	<0.02	-	-	0.02 ug/g	0.02 ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	0.05 ug/g
Toluene	0.05 ug/g	<0.05	<0.05	-	-	0.2 ug/g	0.2 ug/g
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-	-	-
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	0.091 ug/g	0.091 ug/g
Toluene-d8	Surrogate	109%	107%	-	-	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	25 ug/g	25 ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	26 ug/g	10 ug/g
F3 PHCs (C16-C34)	8 ug/g	<8	<8	-	-	240 ug/g	240 ug/g
F4 PHCs (C34-C50)	6 ug/g	<6	<6	-	-	3300 ug/g	2800 ug/g
PCBs							
PCBs, total	0.05 ug/g	<0.05	-	-	-	0.78 ug/g	0.35 ug/g
Decachlorobiphenyl	Surrogate	131%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
SAR	ND	0.01	N/A					
Conductivity	ND	5	uS/cm					
Cyanide, free	ND	0.03	ug/g					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	7	ug/g					
F2 PHCs (C10-C16)	ND	4	ug/g					
F3 PHCs (C16-C34)	ND	8	ug/g					
F4 PHCs (C34-C50)	ND	6	ug/g					
Metals								
Antimony	ND	1.0	ug/g					
Arsenic	ND	1.0	ug/g					
Barium	ND	1.0	ug/g					
Beryllium	ND	0.5	ug/g					
Boron, available	ND	0.5	ug/g					
Boron	ND	5.0	ug/g					
Cadmium	ND	0.5	ug/g					
Chromium (VI)	ND	0.2	ug/g					
Chromium	ND	5.0	ug/g					
Cobalt	ND	1.0	ug/g					
Copper	ND	5.0	ug/g					
Lead	ND	1.0	ug/g					
Mercury	ND	0.1	ug/g					
Molybdenum	ND	1.0	ug/g					
Nickel	ND	5.0	ug/g					
Selenium	ND	1.0	ug/g					
Silver	ND	0.3	ug/g					
Thallium	ND	1.0	ug/g					
Uranium	ND	1.0	ug/g					
Vanadium	ND	10.0	ug/g					
Zinc	ND	20.0	ug/g					
PCBs								
PCBs, total	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Decachlorobiphenyl	*0.111*		*%*	*111*	*60-140*			
Volatiles								
Benzene	ND	0.02	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
m,p-Xylenes	ND	0.05	ug/g					
o-Xylene	ND	0.05	ug/g					
Xylenes, total	ND	0.05	ug/g					
Surrogate: Toluene-d8	*8.65*		*%*	*108*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	15.9	0.01	N/A	14.8			7.7	30	
Conductivity	62.5	5	uS/cm	60.1			3.9	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.46	0.05	pH Units	7.56			1.3	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g	ND			NC	40	
F2 PHCs (C10-C16)	ND	4	ug/g	ND			NC	30	
F3 PHCs (C16-C34)	776	8	ug/g	778			0.3	30	
F4 PHCs (C34-C50)	2090	6	ug/g	2360			12.2	30	ORG01
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.2	1.0	ug/g	1.6			29.3	30	
Barium	11.7	1.0	ug/g	12.0			2.5	30	
Beryllium	ND	0.5	ug/g	ND			NC	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	5.5	5.0	ug/g	ND			NC	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	8.1	5.0	ug/g	6.9			16.3	30	
Cobalt	2.3	1.0	ug/g	2.4			0.7	30	
Copper	6.4	5.0	ug/g	7.0			9.1	30	
Lead	3.0	1.0	ug/g	2.9			4.7	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	ND	5.0	ug/g	ND			NC	30	
Selenium	ND	1.0	ug/g	ND			NC	30	
Silver	ND	0.3	ug/g	ND			NC	30	
Thallium	ND	1.0	ug/g	ND			NC	30	
Uranium	ND	1.0	ug/g	ND			NC	30	
Vanadium	15.3	10.0	ug/g	17.6			13.5	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Zinc	ND	20.0	ug/g	ND			NC	30	
PCBs									
PCBs, total	ND	0.05	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.113*		*%*		*107*	*60-140*			
Physical Characteristics									
% Solids	86.7	0.1	% by Wt.	86.0			0.8	25	
Volatiles									
Benzene	ND	0.02	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
m,p-Xylenes	ND	0.05	ug/g	ND			NC	50	
o-Xylene	ND	0.05	ug/g	ND			NC	50	
Surrogate: Toluene-d8	*9.46*		*%*		*108*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.281	0.03	ug/g	ND	77.8	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	62	7	ug/g	ND	87.2	80-120			
F2 PHCs (C10-C16)	80	4	ug/g	ND	91.9	60-140			
F3 PHCs (C16-C34)	933	8	ug/g	778	79.4	60-140			
F4 PHCs (C34-C50)	2400	6	ug/g	2360	24.3	60-140			QM-4X
Metals									
Antimony	108	1.0	ug/g	ND	86.4	70-130			
Arsenic	122	1.0	ug/g	1.6	95.9	70-130			
Barium	123	1.0	ug/g	12.0	88.5	70-130			
Beryllium	111	0.5	ug/g	ND	88.4	70-130			
Boron, available	5.37	0.5	ug/g	ND	107	70-122			
Boron	104	5.0	ug/g	ND	83.4	70-130			
Cadmium	124	0.5	ug/g	ND	99.1	70-130			
Chromium (VI)	4.7	0.2	ug/g	ND	87.5	70-130			
Chromium	119	5.0	ug/g	6.9	89.8	70-130			
Cobalt	121	1.0	ug/g	2.4	95.1	70-130			
Copper	118	5.0	ug/g	7.0	88.9	70-130			
Lead	109	1.0	ug/g	2.9	85.0	70-130			
Mercury	1.58	0.1	ug/g	ND	105	70-130			
Molybdenum	120	1.0	ug/g	ND	95.9	70-130			
Nickel	121	5.0	ug/g	ND	96.7	70-130			
Selenium	118	1.0	ug/g	ND	94.3	70-130			
Silver	112	0.3	ug/g	ND	89.4	70-130			
Thallium	103	1.0	ug/g	ND	82.5	70-130			
Uranium	118	1.0	ug/g	ND	94.6	70-130			
Vanadium	123	10.0	ug/g	17.6	84.0	70-130			
Zinc	119	20.0	ug/g	ND	95.0	70-130			
PCBs									
PCBs, total	0.569	0.05	ug/g	ND	134	60-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Decachlorobiphenyl	*0.115*		*%*		*108*	*60-140*			
Volatiles									
Benzene	3.98	0.02	ug/g	ND	99.4	60-130			
Ethylbenzene	3.91	0.05	ug/g	ND	97.8	60-130			
Toluene	3.89	0.05	ug/g	ND	97.3	60-130			
m,p-Xylenes	7.89	0.05	ug/g	ND	98.4	60-130			
o-Xylene	4.01	0.05	ug/g	ND	100	60-130			
Surrogate: Toluene-d8	*7.94*		*%*		*99.2*	*50-140*			

Qualifier Notes:

QC Qualifiers:

ORG01	GC-FID signal did not return to baseline by C50
QM-4X	The spike recovery was outside of QC acceptance limits due to elevated analyte concentration.

Sample Data Revisions:

None

Work Order Revisions / Comments:

REVISION 1 - This report includes additional analysis as per the client.

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

NC: Not Calculated

Soil results are reported on a dry weight basis unlesss otherwise noted.

Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.

- F1 range corrected for BTEX.

- F2 to F3 ranges corrected for appropriate PAHs where available.

- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.

- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

- When reported, data for F4G has been processed using a silica gel cleanup.

Any use of these results implies your agreement that our total liabilty in connection with this work, however arising, shall be limited to the amount paid by you for this work, and that our employees or agents shall not under any circumstances be liable to you in connection with this work.