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Phase 2 Environmental Site Assessment

3275 Trafalgar Road
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Prepared for:

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File: 21263

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EXECUTIVE SUMMARY

Landtek Limited (Landtek) is pleased to submit the findings of this Phase 2 Environmental Site Assessment (ESA) report for the property located at 3275 Trafalgar Road in Oakville, Ontario (the Site). The work was initiated following authorization to proceed from Ms. Elisha Vankleef of New Horizon Development Group (the Client) in June of 2021.

The Phase 2 ESA was completed in general accordance with the current guidelines described in Ontario Regulation 153/04 (O. Reg. 153/04) as amended. The soil and groundwater quality standards and regulations prescribed in the document Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011. The Phase 2 ESA covers physical sampling of soils and groundwater and chemical analyses where potential risks of environmental liability are evident from previous findings or past use of the property.

This assessment was completed with the understanding that a Record of Site Condition (RSC) is **NOT** required and therefore the requirements of Ontario Regulation 153/04 (as amended) were not performed.

The Site was historically developed with two (2) buildings and/or structures, one residential dwelling and one barn (circa 1970 to early 2020s); There were various storage sheds on the property as well. Currently it is vacant undeveloped land with no buildings or structures present.

A Phase 1 ESA was completed by Landtek for the Site, File: 21262, dated December 2023 (Phase 1 ESA). Based on the findings of the Phase 1 ESA, the following issues of potential environmental concern are anticipated at the Site:

- Fill of unknown quality was historically imported onto the Site. A former provincially significant wetland and associated stream were infilled on the central portion of the Site;
- The reported presence of a former above ground fuel oil tank (AST) located in the northwest corner of the basement of the former residential dwelling;
- The Site being historically used for agricultural purposes (pesticide use) (pre 1930s to the 2020s);
- The reported former use of the Site as a construction equipment/vehicle operator training facility (1970s to early 2020s);
- Farm equipment, construction machinery, storage trailers and numerous piles of miscellaneous materials (e.g., metal frames, concrete blocks, piping, wood, empty drums) were observed throughout central / western portion of the Site; and,
- The previous investigations done on the Site by MTE in 2020 identified limited areas of poor-quality fill material above the O. Reg. 153/04 Table 1 SCS and the O. Reg. 153/04 Table 2 SCS in two areas of the Site. The vertical extent appears to be limited to depths of approximately 0.6 m to 0.8 m in these areas. Some metals were identified in groundwater at concentrations above the O. Reg. 153/04 Table 1 SCS.

Based on the aforementioned issues of potential environmental concerns identified for the Site a Phase 2 ESA was recommended to assess potential impacts at the Site.

Seventeen (17) boreholes (BH114, BH115, BH116, BH117, BH118, BH119, BH(MW)120, BH(MW)121, BH122, BH123, BH(MW)120S, BH(MW)121S, BH(MW)23-1, BH(MW)23-122D, BH23-2, BH23-3, and BH(MW)23-4) were drilled on the Site between August 2021 and March 2023, to depths of up to approximately 19.5 to 20 m below ground surface (bgs) (64 to 66 ft bgs) and were established based on the subsurface conditions and likelihood of groundwater being encountered.

All work was completed in accordance with acceptable industry standards and all soil 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.

Selected soil samples from the boreholes were submitted for laboratory analysis based on field-screening vapour measurements and/or field observations, including Metals and Inorganic parameters (M&I), Petroleum Hydrocarbons Fraction 1 to Fraction 4 (PHC F1-F4), Polycyclic Aromatic Hydrocarbons (PAHs), Organochlorine Pesticides (OC Pesticides), and Volatile Organic Compounds (VOCs). Groundwater samples were submitted for laboratory analysis from the seven (7) newly installed groundwater monitoring wells, and five (5) existing wells, including M&I, PHC F1-F4, PAHs, OC Pesticides, and VOCs. The parameters for which samples were analysed were selected based on a Sampling and Analysis Plan (SAP) and field conditions encountered.

In accordance with Ontario Regulation 153/04 (O. Reg. 153/04), the Site Condition Standards (SCS) adopted for this assessment were the Table 1 Full Depth Generic SCS for Use in a Potable Ground Water Condition for coarse textured soils and Residential/Parkland/Institutional/Industrial/Commercial/Community (all types) property use (O. Reg. 153/04 Table 1 SCS) were selected as the applicable standards for the Site.

The surface consisted of gravel and organic material, underlain by Fill Material (ranging from grade to approximately 1.5 m below ground surface (bgs)). The underlying native soils on-Site were reported as Silt material to the maximum depth of approximately 3.1 m bgs to 4.6 mbgs (10 ft to 15 ft bgs)). Bedrock was encountered under the silt to the maximum depth drilled of 20 m bgs (66ft).

The inferred direction of regional groundwater flow is a southeasterly direction towards Lake Ontario (via Morrison Creek), located approximately 7.0 km southeast of the Site.

Conclusions

Based on the testing completed during the course of this investigation, the findings of the Phase 2 ESA are summarized as follows:

- Soil samples collected for analysis as described in the relevant sections of this report indicate that the fill material at the Site is impacted and concentrations of various PAH, PHC, and VOC parameters do exceed the applicable Table 1 SCS in accordance with O. Reg. 153/04; and,

- The results of the groundwater analysis from the seven (7) groundwater monitoring wells sampled in August of 2021 were reported to be below the O. Reg. 153/04 Table 1 SCS in one (1) of the groundwater monitoring wells sampled, while six (6) of the groundwater monitoring wells sampled do exceed the applicable Table 1 SCS;

- The results of the groundwater analysis from the twelve (12) groundwater monitoring wells sampled in April of 2023 were reported to be below the O. Reg. 153/04 Table 1 SCS in one (1) of the groundwater monitoring wells sampled, while eleven (11) of the groundwater monitoring wells sampled do exceed the applicable Table 1 SCS for all types of land-uses in a potable groundwater condition in accordance with O. Reg. 153/04

Based on the results of this Phase Two ESA, soil and groundwater did not meet the applicable O. Reg. 153/04 Table 1 SCS, and an appropriate remediation strategy will need to be considered to confirm the suitability of the Site for its intended development and use.

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1.0 INTRODUCTION

Landtek Limited (Landtek) is pleased to submit the findings of this Phase 2 Environmental Site Assessment (ESA) report for the property located at 3275 Trafalgar Road in Oakville, Ontario (the Site), as shown below on **Figure 1**. The work was initiated following authorization to proceed from Ms. Elisha Vankleef New Horizon Development Group (the Client) in June of 2021.

The Site was historically developed with two (2) buildings and/or structures, one residential dwelling and one barn (circa 1970 to early 2020s); There were various storage sheds on the property as well. Currently it is vacant undeveloped land with no buildings or structures present.

A Phase 1 ESA was completed by Landtek for the Site, File: 21262, dated December 2023 (Phase 1 ESA). Based on the findings of the Phase 1 ESA, the following issues of potential environmental concern are anticipated at the Site:

- Fill of unknown quality was historically imported onto the Site. A former provincially significant wetland and associated stream were infilled on the central portion of the Site;
- The reported presence of a former above ground fuel oil tank (AST) located in the northwest corner of the basement of the former residential dwelling;
- The Site being historically used for agricultural purposes (pesticide use) (pre 1930s to the 2020s);
- The reported former use of the Site as a construction equipment/vehicle operator training facility (1970s to early 2020s);
- Farm equipment, construction machinery, storage trailers and numerous piles of miscellaneous materials (e.g., metal frames, concrete blocks, piping, wood, empty drums) were observed throughout central / western portion of the Site; and,
- The previous investigations done on the Site by MTE in 2020 identified limited areas of poor-quality fill material above the O. Reg. 153/04 Table 1 SCS and the O. Reg. 153/04 Table 2 SCS in two areas of the Site. The vertical extent appears to be limited to depths of approximately 0.6 m to 0.8 m in these areas. Some metals were identified in groundwater at concentrations above the O. Reg. 153/04 Table 1 SCS.

Based on the aforementioned issue of potential environmental concern identified for the Site a Phase 2 ESA was recommended to assess potential impacts at the Site.

The purpose of this Phase 2 ESA investigation was to assess the soil and groundwater quality at the Site in relation to the potential environmental concern identified in the Phase 1 ESA. The Phase 2 ESA was completed in general accordance with Ontario Regulation 153/04 (O. Reg. 153/04). The soil and groundwater quality standards and regulations are prescribed in the document Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, April 15, 2011. The Phase 2 ESA covers physical sampling of soil and groundwater and chemical analyses where potential risks and/or environmental liability are evident from previous findings or past use of the property.

It is understood that the information obtained as part of this program may be used for due diligence purposes. This assessment was completed with the understanding that a Record of Site Condition (RSC) is **not** required and therefore the requirements of O. Reg. 153/04 (as amended) were not performed.

2.0 SITE DESCRIPTION

The Site is municipally known as 3275 Trafalgar Road in Oakville, Ontario, is generally rectangular in shape and comprises a total area of approximately 3.94 hectares (9.75 acres). The Site is located approximately 400 m northwest of the intersection of Trafalgar Road and Threshing Mill Boulevard with approximately 100 m of frontage on Trafalgar Road in Oakville, Ontario.

FIGURE 1: Location of Site and Boreholes/Monitoring Wells

Legend

Monitoring Well/ Borehole Installed by Landtek (2021/2022)

Monitoring Well/Borehole Installed by Landtek (2023)

Monitoring Well installed by MTE (2020)

3.0 PREVIOUS ENVIRONMENTAL REPORTS

The following previous environmental reports were provided to Landtek for review:

"***DRAFT*** *– Phase I Environmental Site Assessment, 3275 Trafalgar Road, Oakville, Ontario, prepared for Disrikt Capital, prepared by B.I.G. Consulting Inc., Project Number BIGC-ENV-384A, dated June 25, 2020*"

A Phase 1 ESA was completed on the Site by B.I.G. Consulting Inc. (BIG) in 2020.
BIG identified the following potential sources of environmental concerns:

1. Entire Site – unknown fill material;
2. Southwestern Portion: Heating Oil above ground tank (AST);
3. Western Portion: Septic tank; and
4. Eastern Portion: Former usage of Pesticides.

A Phase 2 ESA was recommended.

"Phase I Environmental Site Assessment, 3275 Trafalgar Road, Oakville, ON, prepared for Wyatt Development Group, prepared by MTE Consultants, MTE File No.: 48113-100, dated October 12, 2020"

A Phase 1 ESA was completed on the Site by MTE Consultants (MTE) in 2020.
The results of the Phase I ESA identified the following potential environmental concerns at the Site:

- The ground surface in the eastern portion of the Site is uneven and two piles of soil fill were observed. Aerial photos and information provided by the Site interviewee (owner) indicated that fill material was historically placed in this area of the Site. The interviewee also reported that grading was completed prior to the operation of a former construction equipment/vehicle operator training facility on the Site. The grading activities included the infilling of an on-Site wetland, pond and watercourse. The source and quality of the fill materials placed at the Site are not known.
- The farm buildings on the Site were constructed in the 1970s and the Site has been used for agricultural purposes since prior to the 1930s. There is potential that agricultural chemicals were historically used and stored at the Site.
- The residential dwelling is currently heated using a fuel oil fired boiler. It was reported that a fuel oil above ground storage tank (AST) is located in the northwest corner of the basement. The basement of the residence was not accessible by MTE during the Phase I ESA Site visit.
- Farm equipment, construction machinery and storage trailers were observed on the Site. It is not known if equipment or vehicle repairs were conducted, or if equipment or vehicle repair fluids were historically stored on Site.
- Numerous piles of miscellaneous materials (e.g., metal frames, concrete blocks, piping, wood, empty drums) were observed throughout the Site.
- A small plastic un-used diesel fuel AST was located in the central area of the Site, north of the barn.
- The Federal Contaminated Sites Inventory identified the property at 3292 Trafalgar Road (25m west) as the Trafalgar Coast Guard Radio Station. Soil at this property was identified as having metals contamination and a remedial action plan was reported to be under development. If the contamination at this property is limited to metals in soil, the potential to affect the Site would be considered low.

The results of the Phase I ESA identified potential sources of contamination at the Site and therefore a Phase II ESA was recommended.

The residential dwelling was reported to be serviced by a private drinking water well. If this well will not be used as part of the future development, it should be decommissioned in accordance with Ontario Regulation 903.

"DRAFT – Phase II Environmental Site Assessment, *3275 Trafalgar Road, Oakville, ON, prepared for Wyatt Development Group, prepared by MTE Consultants, MTE File No.: 48113-100, dated October 20, 2020*"

A Phase II ESA was completed on the Site in 2020 to address the potential environmental concerns identified in the MTE Phase I ESA (2020).

The Phase II ESA included the collection and analysis of surface soil samples, and soil samples collected from boreholes advanced across the Site. Groundwater samples were collected from one newly installed monitoring well and three existing monitoring wells (no details were provided). Soil samples were submitted for analysis of one or more of metals, hydride-forming metals (As, Sb, Se), organochlorine pesticides (OCs), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), petroleum hydrocarbons (PHCs) and benzene, toluene, ethylbenzene and xylenes (BTEX). Groundwater samples were submitted for analysis of metals and inorganic parameters, PHCs and BTEX.

The subsurface stratigraphy was reported to generally consist of topsoil underlain by up to 5.3 m of soil fill or reworked native soil, over native clayey silt till in the western half of the Site and native sandy silt in the eastern half of the Site. Shale bedrock was encountered at depths ranging from 2.1 m to 6.6 m. Some non-soil materials including brick, wood, styrofoam and asphalt were reported in the shallow fill.

The analytical results were compared to the Ontario Regulation 153/04 Table 1 Full Depth Background Site Condition Standards (O. Reg. 153/04 Table 1 SCS) as a result of the on-Site Natural Heritage Feature (environmentally sensitive area) and the former wetland, which was proposed for rehabilitation. The analytical results were also compared to the O. Reg. 153/04 Table 2 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for residential/parkland/institutional property use and coarse textured soils (O. Reg. 153/04 Table 2 SCS), which are applicable in some areas of the Site that are greater than 30 m from the environmentally sensitive features discussed above.

The soil analytical results were below the O. Reg. 153/04 Table 1 SCS with the exception of the following two locations:

- BH115-20 (0.1 m - 0.6 m) – PHC F2-F4; and,
- BH129-20 (0 m - 0.6 m) – molybdenum, zinc, lead, PHC F2 - F4

The soil analytical results were below the O. Reg. 153/04 Table 2 SCS with the exception of the above two locations and the following additional location:

- BH115-20 (0.1 m - 0.6 m) - zinc, PHC F3 and PHC F4;
- BH129-10 (0 m - 0.6 m) - zinc were also above the O. Reg. 153/04 Table 2 RPI SCS.

The vertical extent of these parameters in soil was delineated at each borehole location though the analysis of deeper samples collected at depths of 0.6 m - 1.2 m (BH115-20) and 0.8 m - 1.4 m (BH129-20). The lateral extent has not been determined.

The measured depth to groundwater was reported to be between 3.1 m and 4.3 m below ground surface and the water table occurs in the shale bedrock. The groundwater analytical results were below the O. Reg. 153/04 Table 2 SCS for RPI land-uses for all of the analyzed parameters. The analytical results for select metals parameters (boron, copper, molybdenum and uranium) were above the O. Reg. 153/04 Table 1 SCSs.

The MTE Phase II ESA identified some poor-quality fill materials above the O. Reg. 153/04 Table 1 SCS and the O. Reg. 153/04 Table 2 SCS in two areas of the Site. The vertical extent appears to be limited to depths of approximately 0.6 m to 0.8 m in these areas. Additional sampling would be needed to determine the lateral extent. If the Site is to be redeveloped for residential use, these soils should be removed from the Site and confirmatory samples collected following their removal.

Some metals were identified in groundwater at concentrations above the O. Reg. 153/04 Table 1 SCS. Given that the groundwater table occurs in the shale bedrock, and concentrations of all analyzed parameters were below the O. Reg. 153/04 Table 2 RPI SCS, these exceedances would not be considered a concern for future residential use of the proposed development areas of the Site (i.e., 30 m away from the wetland boundary and outside of the Natural Heritage Feature).

- *Phase 1 Environmental Site Assessment, 3275 Trafalgar Road, Oakville, Ontario*, prepared for New Horizon Development Group, prepared by Landtek Limited, dated November, 2023

Based on the review of the historical and regulatory information, and observations made during the site visit, the conclusions and recommendations were as follows:

- Multiple issues of potential environmental concern were identified for the Site including the importation of fill material of unknown quality, the presence of an above ground fuel oil tank (AST), potential historical pesticide use, and waste generation on the south adjacent property.

- The previous investigations done on the Site by MTE in 2020 identified limited areas of poor-quality fill materials above the O. Reg. 153/04 Table 1 SCS and the O. Reg. 153/04 Table 2 SCS in two areas of the Site. The vertical extent appears to be limited to depths of approximately 0.6 m to 0.8 m in these areas. Some metals were identified in groundwater at concentrations above the O. Reg. 153/04 Table 1 SCS. Given that the groundwater table occurs in the shale bedrock, and concentrations of all analyzed parameters were below the O. Reg. 153/04 Table 2 RPI SCS, these exceedances would not be considered a concern for future residential use of the proposed development areas of the Site (i.e., 30 m away from the wetland boundary and outside of the Natural Heritage Feature).

Based on the results of the Phase 1 ESA completed for the Site, and the environmental concerns identified for the Site and/or surrounding properties, a Phase 2 ESA should be completed to verify the quality of the soils on the entire Site to confirm the suitability for the proposed redevelopment.

4.0 SCOPE OF WORK

The objectives of the 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 seventeen (17) boreholes to a maximum depth of approximately 20 m below ground surface (bgs) (66 ft bgs) at locations identified on **Figure 1**. The purpose of the boreholes was for the collection of soil samples for chemical analyses. All final borehole/monitoring well locations were based on accessibility by the drilling equipment and subsurface infrastructure considerations; the depths were established based on the subsurface conditions and likelihood of groundwater being encountered;
- Conducting groundwater monitoring and sampling from the six (6) newly installed groundwater monitoring wells, and five (5) previously installed groundwater monitoring wells by MTE in 2020;
- Collecting soil samples for laboratory analysis of Metals and Inorganic parameters (M&I), Petroleum Hydrocarbons Fraction 1 to Fraction 4 (PHC F1-F4), Volatile Organic Compounds (VOCs), Polycyclic Aromatic Hydrocarbons (PAHs), and Organochlorine Pesticides (OC Pesticides);
- Collecting one (1) groundwater sample from each newly installed groundwater monitoring well for laboratory analysis of M&I, PHC F1-F4, PAH, OC Pesticides, and VOCs parameters;
- Submitting up to two (2) soil samples for pH as required by O. Reg. 153/04;
- 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 (MECP) standards.

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 MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act dated April 15, 2011.

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

- *Land Use*: The intended land use is reported to be residential. Therefore, the land use adopted for this assessment is the end-use residential land-use;
- *Potable or non-potable groundwater*: Based on results from the Phase One ESA completed for the Site by Landtek (dated July 2021), one (1) potable water well is located on the Site, and five (5) potable water wells are located within 250 m of the Site;
- *Proximity to surface water body*: Portions of the Phase Two Property are located within 30 metres (m) of a waterbody;
- *Proximity to areas of natural significance or environmentally sensitive areas*: The Site is considered to be within the proximity of an area of natural significant or an environmentally sensitive area, based on information obtained as part of the Phase 1 ESA;
- *Depth to bedrock*: A property is considered a shallow soil property if one-third or more of the property consists of soil depths of 2 metres below ground surface (m bgs) 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 and the subsurface conditions encountered and the grain size analysis completed by Landtek, the soil texture is considered to be coarse textured as defined in O. Reg.153/04.

Based on the above information, the *Table 1 Full Depth Generic Site Condition Standards in a Potable Ground Water Condition and Residential/Parkland/Institutional/Industrial/Commercial/ Community (R/P/I/I/C/C) property use (O. Reg. 153/04 Table 1 SCS)* for coarse textured soils were selected as the applicable standards for the Phase Two Property.

6.0 METHODOLOGY

The field work for this Phase 2 ESA was carried out in August of 2021, April of 2022, and March of 2023.

The field work was implemented in accordance with the Sampling and Analysis Plan (SAAP). Landtek proposed boreholes/monitoring wells on the Site to obtain soil samples, including near the water table and the sampling of groundwater monitoring wells to obtain groundwater samples.

The analytical program presents information on the sampling locations, media sampled, sample depths and analytical parameters for which samples were analysed.

The rationale for the sampling and analysis is presented in **Section 4.0**.

Landtek retained experienced contractors for the drilling activities. Landtek field staff were briefed prior to commencement of the field work by the Project Manager and the Project QP_{ESA}. Field staff was responsible for supervising field activities, logging the soils during the drilling activities, monitoring the depth of drilling and installation of monitoring wells, soil and groundwater sampling, and sorting and dispatch of samples under chain of custody documentation to the contract laboratory.

Landtek used borehole drilling to conduct characterisation of the soil and groundwater sampling to conduct characterisation of the groundwater at the Site. The details of borehole drilling are discussed in the sections below.

6.1 Drilling

All work was completed in accordance with acceptable industry standards and all soil 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 VOCs, M&I, PAHs, OC Pesticides and/or PHC F1-F4.

6.1.1 Borehole Advancement and Soil Sampling

In August of 2021, ten (10) boreholes (BH114, BH115, BH116, BH117, BH118, BH119, BH(MW)120, BH(MW)121, BH122, and BH123) were drilled on the Site, as shown on **Figure 3**; two (2) of which (MW120, and MW121) were installed as groundwater monitoring wells. The boreholes were advanced using a track mounted D 70 drill rig and final borehole depths were between 3.0 and 10.0 meters below ground surface (m bgs) (10 to 33 ft).

In April of 2022, issued under a separate cover for hydrogeology, two (2) boreholes (BH(MW)120S, and BH(MW)121S were drilled on the Site, two (2) of which (MW120S, and MW121S) were installed as groundwater monitoring wells. The boreholes were advanced using a track mounted D 70 drill rig and final borehole depths of between approximately 3.1 to 4.3 meters below ground surface (m bgs) (10.2 to 14.1 ft).

In March of 2023, five (5) boreholes (BH(MW)23-1, BH(MW)23-122D, BH23-2, BH23-3, and BH(MW)23-4) were drilled on the Site, as shown on **Figure 3**; three (3) of which (MW23-1, MW23-122D, and MW23-4), were installed as groundwater monitoring wells. The boreholes were advanced using a track mounted D 70 drill rig and final borehole depths of approximately 19.5 to

20 meters below ground surface (m bgs) (64 to 66 ft)

The boreholes were established based on the subsurface conditions and likelihood of groundwater being encountered and were advanced under the full-time supervision of a representative of Landtek.

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. Borehole logs are presented in **Appendix A**.

Multiple soil samples were collected at discrete borehole intervals at each drilling 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).

6.2 Soil Sampling

Each of the boreholes were logged and information recorded including drilling date, depth, headspace vapour concentrations, soil descriptions and measured depth to groundwater, (if encountered). Borehole soil samples were collected at discrete intervals using standard split spoon samples. Soil sampling locations were selected based on observations and field-screening (e.g., vapour readings, unique soil characteristics or visible staining).

Samples were stored on ice until delivery to Paracel Laboratories following standard chain-of-custody protocols. The soil samples selected for analysis were analyzed for selected COCs. The parameters included the measurement of pH which is required for the selection of the appropriate Site Condition Standards.

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 Gas Tech into the plastic bag. The peak headspace reading for each sample was recorded. One (1) soil sample 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.

6.3 Field Screening Measurements

Field-screening vapour measurements were conducted using an RKI Eagle 2 portable instrument fitted with two (2) sensors: one (1) for detection of hydrocarbons/combustibles and the other a photoionization detector (PID) for detection of volatile organic compounds.

6.4 Groundwater: Monitoring Well Installation

Seventeen (17) boreholes (BH114, BH115, BH116, BH117, BH118, BH119, MW120S, MW121S,

MW120D, MW121D, BH122, BH123, MW23-1, MW23-122D, BH23-2, BH23-3, and MW23-4) were drilled on the Site between August 2021 and March 2023, to depths of up to approximately 20 m below ground surface (bgs) (66 ft bgs) and were established based on the subsurface conditions and likelihood of groundwater being encountered.

The monitoring wells were constructed using polyvinyl chloride ("PVC") well screens (3m lengths) and PVC riser pipe finished at grade. The well screens were installed in an attempt to straddle the apparent water table (if encountered). All wells were monument with vault protective steel caps/casings.

Monitoring wells were installed in accordance with O. Reg. 903, as amended, for the purposes of assessing groundwater quality at the Site. Monitoring wells were constructed using 51 mm inside diameter (ID) Schedule 40 polyvinyl chloride (PVC) pipe. The well screens were installed to attempt to straddle the apparent water table (if encountered). All sections were machined with fine threaded flush joints to avoid the use of PVC glue and primer for connections as these bonding materials have the potential of introducing traces of organic contaminants. The screened sections of PVC pipe were manufactured with No. 10 (0.25 mm) machined slotting. Solid lengths of PVC pipe were used above the screened interval (i.e., riser pipe). Cleaned silica sand (10/20 size) was placed around the screen to a minimum level of 0.10 m above the top of the screen. Bentonite (hydrated with tap water) was used to backfill the borehole above the sand to create a well seal. Monitoring wells were designed to be installed with screens completed in discrete lithology units to investigate potential groundwater impacts within these units. Groundwater monitoring wells were finished with locking J-Plug caps and completed using monument protective casings.

Monitoring well locations are shown on **Figure 1**.

6.5 Groundwater Sampling

6.5.1 Monitoring Well Development

Prior to sampling, monitoring wells were developed using a foot-valve inertial pump technique to minimize sediment in the well. Well development was considered complete when a minimum of three (3) well volumes had been purged or when the well was purged to dryness at least three (3) times after a minimum 90% water level recovery.

6.5.2 Water Level Measurements

The depth to groundwater and total well depths were measured using a clean and calibrated electronic interface probe. The relative elevations were calculated by subtracting the measured groundwater depth from the surveyed top of the casing elevation.

To prevent cross-contamination, the interface probe was cleaned with a laboratory-grade phosphate-free detergent and distilled water solution, before each use and in between each well. All water level measurements were taken from the top of the well riser pipe.

6.5.3 Groundwater Sample Collection

Groundwater sampling was carried out on August 27th and August 30th, 2021. Samples were obtained from two (2) newly installed monitoring wells (MW120D, and MW121D), and four (4)

previously installed wells (MW111 – 20, MW117 – 20, MW118 – 20, and MW119 – 20), drilled by MTE in 2020.

A second round of groundwater sampling was carried out on April 4th, 2023. Samples were obtained from three (3) newly installed monitoring wells (MW23-1, MW23-122D, and MW23-4), and nine (9) previously installed monitoring wells; (MW120D, and MW121D) drilled by Landtek in 2021, (MW120S, and MW121S) drilled by Landtek in 2022, and (MW101-20, MW111 – 20, MW117 – 20, MW118 – 20, and MW119 – 20) drilled by MTE in 2020.

During the sampling, groundwater samples were collected using a low-flow peristaltic pump, with dedicated tubing installed in each of the monitoring wells. This method minimizes the velocity of the formation water entering the well screen, as the drawdown is kept to a minimum (i.e., less than 10 % of the initial water column height) by adjusting the pumping rate.

Field filtering was conducted for samples collected for analysis of dissolved metals using dedicated a 0.45-micron (µm) cartridge filter for each sample.

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 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

As discussed in **Section 5.0**, the results of the laboratory analysis of the soil samples analysed have been compared with the O. Reg. 153/04:

- Table 1 SCS Full Depth Generic Site Condition Standards in a Potable Ground Water Condition and *Residential/Parkland/Institutional/Industrial/Commercial/Community* property use (O. Reg. 153/04 Table 1 SCS) for coarse textured soils

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

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 1 SCS** (µg/g)
BH114 SS1	0 to 0.6	PAHs and M&I	--	**No exceedances**	--
BH114 SS2	1.5 to 2.0	PHCs, VOCs, and OC Pesticides	--	**No exceedances**	--
BH115 SS1	0 to 0.6	PHCs, VOCs, and Metals	F3 PHCs F4 PHCs	**679** **2640**	240 120
BH115 SS2	1.5 to 2.0	PHCs, VOCs, PAHs, and OC Pesticides	--	**No exceedances**	--
BH116 SS1	0 to 0.6	PHCs, VOCs, PAHs, M&I, and OC Pesticides	Trichloroethylene	**0.07**	0.05
BH117 SS1	0 to 0.6	M&I and OC Pesticides	--	**No exceedances**	--
BH118 SS1	0 to 0.6	PHCs, VOCs, M&I, and OC Pesticides	--	**No exceedances**	--
BH119 SS1	0 to 0.6	PHCs, VOCs, and PAHs	--	**No exceedances**	--
BH119 SS5	3.1 to 3.5	PHCs and VOCs	--	**No exceedances**	--
BH120 SS1	0 to 0.6	PHCs, VOCs, Metals, and OC Pesticides	Trichloroethylene	**0.06**	0.05
BH120 SS3	3.1 to 3.5	PHCs, VOCs, Metals, and OC Pesticides	--	**No exceedances**	--
BH121 SS1	0 to 0.6	PHCs, VOCs, and Metals	--	**No exceedances**	--
BH121 SS3	3.1 to 3.5	PHCs, VOCs, Metals, and OC Pesticides	Trichloroethylene	**0.06**	0.05
BH122 SS1	0 to 0.6	PHCs, VOCs, PAHs, M&I, and OC Pesticides	--	**No exceedances**	--
BH123 SS1	0 to 0.6	PHCs, VOCs, PAHs, M&I, and OC Pesticides	--	**No exceedances**	--
BH23-1 SS1	0 to 0.6	PHCs, VOCs, PAHs, and M&I	Hexane	**0.31**	0.05

Sample	Depth (m bgs)	Analyses	Exceedances		
			Parameter	Sample Results (µg/g)	Table 1 SCS** (µg/g)
BH23-1 SS3	1.5 to 2.0	PHCs, VOCs, PAHs, and M&I	--	**No exceedances**	--
BH23-2 SS1	0 to 0.6	PHCs, VOCs, PAHs, and M&I	--	**No exceedances**	--
BH23-2 SS1 DUP	0 to 0.6	PAHs, and M&I	--	**No exceedances**	--
BH23-2 SS5	3.1 to 3.5	PHCs, VOCs, PAHs, and M&I	--	**No exceedances**	--
BH23-122D SS1	0 to 0.6	PHCs, VOCs, PAHs, and M&I	Hexane	**0.12**	0.05
BH23-122D SS3	1.5 to 2.0	PAHs, and M&I	--	**No exceedances**	--
BH23-3 SS1	0 to 0.6	PHCs, VOCs, PAHs, and M&I	--	**No exceedances**	--
BH23-3 SS5	3.1 to 3.5	PHCs, and VOCs	--	**No exceedances**	--
BH23-4 SS2	0.8 to 1.4	PHCs, VOCs, PAHs, and M&I	--	**No exceedances**	--
BH23-4 SS6	4.6 to 5.1	PHCs, and VOCs	--	**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 1 Full Depth Generic SCS for Use in a Potable Ground Water Condition for coarse textured soils and Residential / Parkland/ Institutional/Industrial/Community/Commercial (R/P/I/I/C/C) property use (Table 1 SCS)*

VOC – Volatile Organic Compounds
PHC F1-F4 – Petroleum Hydrocarbons Fractions F1-F4
M&I – Metals and Inorganics
PAHs - Polycyclic Aromatic Hydrocarbons
OC Pesticides – Organochlorine Pesticides

As indicated above, the soils tested on-Site were reported to be below the applicable O. Reg. 153/04 Table 1 SCS, with the exception of BH115 SS1, BH116 SS1, BH120 SS1, BH121 SS3, BH23-1 SS1, and BH23-122D SS1.

8.2 Groundwater

The summary of test results for groundwater are shown in **Table 2**.

Table 2: Schedule of Chemical Analyses and Summary of Test Results for Groundwater

Sample	Water Level (m bgs) Mar 31, 2023	Sample Date	Analyses	Exceedances		
				Parameter	Sample Results (µg/L)	Table 1 SCS** (µg/L)
MW101-20	1.21	Aug 30, 2021	PHCs, VOCs, OC Pesticides, and M&I	--	**No exceedances**	--
		April 4, 2023	PHCs, VOCs, PAHs, and M&I			
Dup A	1.15	April 4, 2023	VOCs	Trichloroethylene	**7.8**	0.5

Sample	Water Level (m bgs) Mar 31, 2023	Sample Date	Analyses	Exceedances		
				Parameter	Sample Results (µg/L)	Table 1 SCS** (µg/L)
Dup B	2.88	April 4, 2023	VOCs	Trichloroethylene	**3.9**	0.5
MW111-20	1.15	August 30, 2021	PHCs, VOCs, OC Pesticides, and M&I	Boron	**8180**	1700
		April 4, 2023	PHCs, VOCs, PAHs, and M&I	Boron	**2360**	1700
MW117-20	7.57	August 27, 2021	PHCs, VOCs, PAHs, OC Pesticides, and M&I	Boron Molybdenum Sodium	**13400** **35.7** **749000**	1700 23 490000
		April 4, 2023	PHCs, VOCs, PAHs, and M&I	Boron Lead Molybdenum Sodium	**7330** **2.4** **28.7** **770000**	1700 1.9 23 490000
MW118-20	3.31	August 27, 2021	PHCs, VOCs, PAHs, OC Pesticides, and M&I	Boron Uranium	**2350** **11.3**	1700 8.9
		April 4, 2023	PHCs, VOCs, PAHs, and M&I	Uranium Trichloroethylene	**13.6** **5.3**	8.9 0.5
MW119-20	5.40	August 30, 2021	PHCs, VOCs, PAHs, and M&I	Chloride Benzo[a]pyrene	**1510000** **0.09**	790000 0.01
		April 4, 2023		Chloride Lead	**904000** **2.5**	790000 1.9
MW120S	0.54	April 4, 2023	PHCs, VOCs, PAHs, and M&I	Copper Trichloroethylene F2 PHCs F3 PHCs	**5.2** **7.7** **262** **552**	5 0.5 150 500
MW120D	0.90	August 30, 2021	PHCs, VOCs, OC Pesticides, and M&I	Boron Silver Uranium Trichloroethylene	**3040** **0.6** **26** **2.3**	1700 0.3 8.9 0.5
		April 4, 2023	PHCs, VOCs, PAHs, and M&I	Uranium Trichloroethylene	**33.3** **3.7**	8.9 0.5
MW121S	0.55	April 4, 2023	PHCs, VOCs, PAHs, and M&I	Trichloroethylene	**4.6**	0.5
MW121D	1.14	August 30, 2021	PHCs, VOCs, PAHs, and M&I	Boron Trichloroethylene Benzo[a]anthracene Benzo[a]pyrene Benzo[b]fluoranthene Chrysene Fluoranthene Phenanthrene Pyrene	**7810** **3.3** **0.23** **0.19** **0.18** **0.18** **0.45** **0.25** **0.46**	1700 0.5 0.2 0.01 0.1 0.1 0.4 0.1 0.2
		April 4, 2023		Boron Trichloroethylene	**3440** **4.6**	1700 0.5
MW23-1	2.88	April 4, 2023	PHCs, VOCs, PAHs, and M&I	Boron Sodium Trichloroethylene	**4720** **2720000** **3.2**	1700 490000 0.5

Sample	Water Level (m bgs) Mar 31, 2023	Sample Date	Analyses	Exceedances		
				Parameter	Sample Results (µg/L)	Table 1 SCS** (µg/L)
MW23-122D	0.87	April 4, 2023	PHCs, VOCs, PAHs, and M&I	Chloride Sodium Trichloroethylene	**1010000** **653000** **4.9**	790000 490000 0.5
MW23-4	2.60	April 4, 2023	PHCs, VOCs, PAHs, and M&I	Molybdenum Trichloroethylene	**24.4** **4.6**	23 0.5

****** Sample results compared with *Soil, Ground Water, and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act', April 2011. Table 1 Full Depth Generic SCS for Use in a Potable Ground Water Condition for coarse textured soils and all types of property use (Table 1 SCS)*

VOC – Volatile Organic Compounds
PHC F1-F4 – Petroleum Hydrocarbons Fractions F1-F4
M&I – Metals and Inorganics
PAHs - Polycyclic Aromatic Hydrocarbons
OC Pesticides – Organochlorine Pesticides

9.0 FINDINGS AND CONCLUSIONS

Based on the testing completed during the course of this investigation, the findings of the Phase 2 ESA are summarized as follows:

- Soil samples collected for analysis as described in the relevant sections of this report indicate that the fill material at the Site is impacted and concentrations of various PAH, PHC, and VOC parameters do exceed the applicable Table 1 SCS in accordance with O. Reg. 153/04; and,

- The results of the groundwater analysis from the seven (7) groundwater monitoring wells sampled in August of 2021 were reported to be below the O. Reg. 153/04 Table 1 SCS in one (1) of the groundwater monitoring wells sampled; six (6) of the groundwater monitoring wells sampled do exceed the applicable Table 1 SCS;

- The results of the groundwater analysis from the twelve (12) groundwater monitoring wells sampled in April of 2023 were reported to be below the O. Reg. 153/04 Table 1 SCS in one (1) of the groundwater monitoring wells sampled; eleven (11) of the groundwater monitoring wells sampled do exceed the applicable Table 1 SCS for all types of land-uses in a potable groundwater condition in accordance with O. Reg. 153/04

Based on the findings of the Phase Two ESA, soil and groundwater did not meet the applicable O. Reg. 153/04 Table 1 SCS for Residential/Parkland/Institutional/Industrial/Commercial/ Community land use on the Site.

Based on the results of this Phase Two ESA, an appropriate remediation strategy will need to be considered to confirm the suitability of the Site for its intended development and use.

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.

Yours truly,
LANDTEK LIMITED

Lauren Blair

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

BOREHOLE LOGS

LOG OF BOREHOLE BH114

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-12
Drilling Method: Hollow Stem - Elements Drilling
Datum: Geodetic Elevation

Northing: 43.495868
Easting: -79.728381
Ground Surface Elevation: 179.3

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
			Granular 300 mm										
		179.0	**Fill** Clayey silt, trace gravel. brown, hard, moist.	1	SS	26 24 14 14	38		1.0				SS1 - PAHs and M&I
1		178.0		2	SS	6 7 12	19		8.0				SS2 - PHCs, VOCs, and OC Pesticides
		177.0	**Clayey Silt** Trace sand, trace gravel. brown, very stiff, moist.										
2													
			Shale Weathered bedrock. red, hard, dry.										
3				3	AUG	50	50		10.0				
		176.0											
			End of Log										
4													
		175.0											
5													

Additional Notes:
1. Borehole open to approximately 3.5 m depth upon completion.
2. No groundwater or water seepage encountered.
3.
4.

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LOG OF BOREHOLE BH115

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-12
Drilling Method: Solid Stem - Elements Drilling
Datum: Geodetic Elevation

Northing: 43.496284
Easting: -79.728048
Ground Surface Elevation: 179

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
			Asphalt 300 mm										
			Fill Silty sand, trace gravel, trace clay. brown, hard, moist.	1	SS	23 27 13 15	40		4.0				SS1 - PHCs, VOCs, and Metals
1		178.0											
			Clayey Silt Till Trace sand, trace gravel. brown, very stiff, moist.	2	SS	7 8 11	19		10.0				SS2 - PHCs, VOCs, PAHs, and OC Pesticides
2		177.0											
			Shale Highly weathered. red, hard, dry.	3	AUG				9.0				
3		176.0											
			End of Log										
4		175.0											
5		174.0											

Additional Notes:
1. Borehole open to approximately 3.5 m depth upon completion.
2. No groundwater or water seepage encountered.
3.
4.

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LOG OF BOREHOLE BH116

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-11
Drilling Method: Solid Stem - Elements Drilling
Datum: Geodetic Elevation

Northing: 43.496486
Easting: -79.727345
Ground Surface Elevation: 178.3

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
			Organic Material 250 mm					
		178.0	**Fill** Silty clay, trace sand. brown, firm, moist.	1	SS	2 3 4 5	7	SS1 - PHCs, VOCs, PAHs, M&I, and OC Pesticides
1		177.0	**Clayey Silt Till** Trace sand, trace gravel. brown, hard, moist.	2	SS	7 11 19	30	
2		176.0	**Shale** Highly weathered. red, hard, dry.	3	SS	22 39 50	50	
3		175.0	End of Log					
4		174.0						
5								

Penetration / Strength Results
Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80

Moisture / Plasticity
PL MC LL
Moisture / Plasticity: 10 20 30 40
43.0
8.0
12.0

Well Details

Groundwater Conditions

Headspace Vapor HEX/IBL (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 3.5 m depth upon completion.
2. Groundwater or water seepage encountered at approximately 2.7 m below ground surface.
3.
4.

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LOG OF BOREHOLE BH117

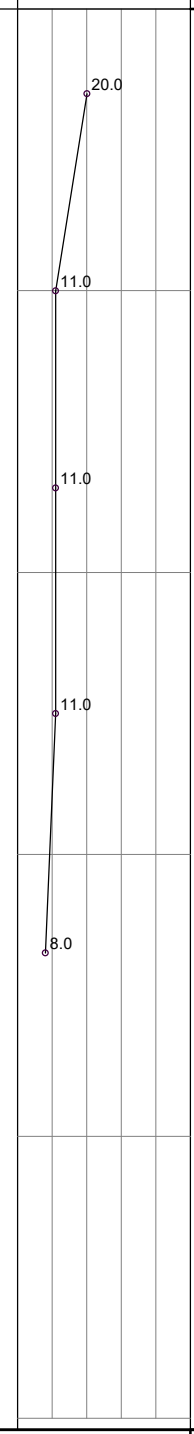
Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-12
Drilling Method: Solid Stem - Elements Drilling
Datum: Geodetic Elevation

Northing: 43.4970050055183
Easting: -79.7271432861035
Ground Surface Elevation: 179.1

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
		179.0	**Organic Material** 275 mm					
			Fill Silty sand to clayey silt, trace sand, trace gravel. brown, stiff, moist.	1	SS	4 5 8 8	13	SS1 - M&I and OC Pesticides
1		178.0	**Clayey Silt Till** Trace sand, trace gravel, trace grey shale fragments. brown, very stiff, moist.	2	SS	6 13 17	30	
				3	SS	8 22 29	57	
2		177.0	**Shale** Highly weathered. red, hard, dry.	4	AUG			
3		176.0		5	AUG			
			End of Log					
4		175.0						
5								

Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲
Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×



Well Details | Groundwater Conditions | Headspace Vapor HEX/IBL (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 3.5 m depth upon completion.
2. No groundwater or water seepage encountered.
3.
4.

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LOG OF BOREHOLE BH118

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-11
Drilling Method: Solid Stem - Elements Drilling
Datum: Geodetic Elevation

Northing: 43.497598
Easting: -79.726429
Ground Surface Elevation: 179.4

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
			Organic Material 150 mm										
		179.0	**Fill** Clayey silt, trace gravel, trace sand. brown, stiff, moist.	1	SS	5 6 6 6	12		15.0				SS1 - PHCs, VOCs, M&I, and OC Pesticides
1			**Clayey Silt Till** Trace sand, trace gravel. brown, hard, moist.	2	SS	4 15 16	31		12.0				
		178.0		3	SS	8 14 16	30		10.0				
2			**Shale** Highly weathered. red, hard, dry	4	AUG				8.0				
		177.0		5	AUG				6.0				
3		176.0	End of Log										
4		175.0											
5													

Additional Notes:
1. Borehole open to approximately 3.5 m depth upon completion.
2. No groundwater or water seepage encountered.
3.
4.

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LOG OF BOREHOLE BH119

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-12
Drilling Method: Solid Stem - Elements Drilling
Datum: Geodetic Elevation

Northing: 43.49514
Easting: -79.728288
Ground Surface Elevation: 180.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength (kPa) / Penetration Test Values (Blows / 0.3m)	Moisture / Plasticity (PL MC LL)	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
			Organic Material 250 mm										
			Fill Sandy silt, trace gravel, trace clay. brown, compact, moist.	1	SS	5 8 9 7	17		17.0				SS1 - PHCs, VOCs, and PAHs
		180.0		2	SS	4 4 5	9		14.0				
1													
			Silty Clay Trace sand, trace gravel. brown, firm to stiff, moist.	3	SS	3 3 5	8		18.0				
		179.0											
2													
			Clayey Silt Till Trace sand, trace gravel. brown, very stiff, moist.	4	SS	7 11 13	24		13.0				
		178.0											
3				5	SS	11 19 26	45		10.0				SS5 - PHCs and VOCs
			End of Log										
		177.0											
4													
		176.0											
5													

Additional Notes:
1. Borehole open to approximately 3.1 m depth upon completion.
2. No groundwater or water seepage encountered.
3.
4.

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LOG OF BOREHOLE BH122

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-11
Drilling Method: Solid Stem - Elements Drilling
Datum: Geodetic Elevation

Northing: 43.496809
Easting: -79.726672
Ground Surface Elevation: 178.4

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
			Organic Material 250 mm					
		178.0	**Fill** Clayey silt, trace sand, trace gravel. brown, firm, moist.	1	SS	5 4 5 5	9	SS1 - PHCs, VOCs, PAHs, M&I, and OC Pesticides
1		177.0						
			Clayey Silt Till Trace sand, trace gravel. brown, very stiff, moist.	2	SS	5 10 11	21	
2		176.0	**Shale** Highly weathered. red, hard, dry.					
3		175.0		3	SS	16 50	50	
			End of Log					
4		174.0						
5								

Penetration / Strength Results
Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80

Moisture / Plasticity
PL MC LL
Moisture / Plasticity: 10 20 30 40
21.0
14.0
8.0

Well Details | **Groundwater Conditions** | **Headspace Vapor HEX/IBL (ppm) [LEL(%)]**

Additional Notes:
1. Borehole open to approximately 3.5 m depth upon completion.
2. Groundwater or water seepage not encountered.
3.
4.

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LOG OF BOREHOLE BH123

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-11
Drilling Method: Solid Stem - Elements Drilling
Datum: Geodetic Elevation

Northing: 43.497433
Easting: -79.726099
Ground Surface Elevation: 179

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
			Organic Material 250 mm					
			Fill Silty sand. brown, compact, moist.	1	SS	5 6 7 13	13	SS1 - PHCs, VOCs, PAHs, M&I, and OC Pesticides
1		178.0		2	SS	3 3 4	7	
			Shale Highly weathered. red, hard, dry to moist.	3	SS	17 39 50	50	
2		177.0						
3		176.0		4	AUG			
			End of Log					
4		175.0						
5		174.0						

Undrained Shear Strength Values (kPa)
40 80 120 160

Penetration Test Values (Blows / 0.3m)
20 40 60 80

Moisture / Plasticity
PL MC LL
10 20 30 40

11.0
10.0
6.0
8.0

Well Details

Groundwater Conditions

Headspace Vapor HEX/IBL (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 3.5 m depth upon completion.
2. Groundwater or water seepage not encountered.
3.
4.

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LOG OF BOREHOLE BH2-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic

Northing: 43.49694
Easting: -79.72735
Ground Surface Elevation: 179

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
			Organic Material ~250 mm Topsoil										
			Clayey Silt trace sand. Brown, firm, moist.	1	SS	2 2 3 4	5		10.0				
1		178.0	...very stiff.	2	SS	8 12 12	24		10.0				
			Silt Till trace gravel, trace sand. Brown, dense, moist.	3	SS	8 19 20	39		10.0				
2		177.0											
				4	SS	10 20 28	48		10.0				
3		176.0	...trace clay. Very moist to wet.	5	SS	23 30 31	61		10.0				
4		175.0											
			Shale TCR = 100% RQD = 36%	6	CORE	50-2"	50		10.0				
5		174.0											
			TCR = 100% RQD = 63%	7	CORE								
6		173.0											
7		172.0	TCR = 100% RQD = 68%	8	CORE								
8		171.0	TCR = 100% RQD = 65%	9	CORE								
9		170.0											
10		169.0											

Additional Notes:
1. Borehole open to approximately 18.5 m depth on completion.
2. Groundwater or water seepage encountered during drilling at approximately 3.2 m below the ground surface.
3.
4.

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LOG OF BOREHOLE BH2-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic

Northing: 43.49694
Easting: -79.72735
Ground Surface Elevation: 179

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
11		168.0	TCR = 100% RQD = 78%	10	CORE								
12		167.0	TCR = 100% RQD = 86%	11	CORE								
13		166.0	TCR = 94% RQD = 87%	12	CORE								
14		165.0	TCR = 97% RQD = 91%	13	CORE								
15		164.0											
16		163.0	TCR = 100% RQD = 90%	14	CORE								
17		162.0											
18		161.0	TCR = 100% RQD = 90%	15	CORE								
19		160.0	End of Log										
20		159.0											

Additional Notes:
1. Borehole open to approximately 18.5 m depth on completion.
2. Groundwater or water seepage encountered during drilling at approximately 3.2 m below the ground surface.
3.
4.

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LOG OF BOREHOLE BH3-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-20
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495378
Easting: -79.728858
Ground Surface Elevation: 180.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength (kPa)	Moisture / Plasticity (%)	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
			Organic Material ~250 mm Topsoil										
			Clayey Silt trace gravel. Brown, stiff, moist.	1	SS	7 6 4 4	10		15.0				
1		180.0	...very stiff.	2	SS	7 9 10	19		13.1				
			Silt Till trace gravel, trace sand, trace clay. Brown, hard, moist.	3	SS	7 12 21	33		13.2				
2		179.0											
				4	SS	11 25 29	54		10.1				
3		178.0											
				5	SS	14 22 27	49		11.1				
		177.0											
4				6	SS	16 18 20	38		9.2				
		176.0		7	SS	17 23 21	44		9.0				
5													
		175.0											
6			**Shale** TCR = 100% RQD = 56%	8	SS	50-2"	50		2.8				
				9	CORE								
		174.0											
7			TCR = 98% RQD = 63%	10	CORE								
		173.0											
8													
		172.0	TCR = 98% RQD = 67%	11	CORE								
9													
		171.0											
10			TCR = 100% RQD = 78%	12	CORE								
		170.0											
11													

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BH3-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-20
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495378
Easting: -79.728858
Ground Surface Elevation: 180.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
			Subsurface Conditions	**Samples**				**Undrained Shear Strength Values** (kPa) ▲ 40 80 120 160 ▲ / **Penetration Test Values** (Blows / 0.3m) × 20 40 60 80 ×	PL MC LL / **Moisture / Plasticity** ○ 10 20 30 40 ○				
12		169.0	TCR = 100% RQD = 67%	13	CORE								
13		168.0	TCR = 100% RQD = 78%	14	CORE								
14		167.0	TCR = 100% RQD = 80%	15	CORE								
15		166.0	TCR = 100% RQD = 84%	16	CORE								
16		165.0	TCR = 100% RQD = 92%	17	CORE								
17		164.0	End of Log										
18		163.0											
19		162.0											
20		161.0											
21		160.0											
22		159.0											

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW122D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-24
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497477
Easting: -79.726035
Ground Surface Elevation: 178.9

Depth Scale (m)	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
0	179.0	**Organic Material** ~250 mm Topsoil										
		Silty Clay trace gravel, trace sand. Brown, stiff, moist.	1	SS	4 4 5 6	9		10.0				
1	178.0	...very stiff.	2	SS	5 7 9	16		10.0				
		Silt Till trace gravel, trace sand, trace grey shale fragments. Red and brown, dense, moist.	3	SS	10 19 33	52		10.0				
2	177.0		4	SS	48 50-3"	50						
	176.0	**Shale** TCR = 100% RQD = 0%	5	SS	50-5"	50		10.0	3/8" Bentonite Pellets	24" Locking Vault		
3			6	CORE								
	175.0	TCR = 100% RQD = 49%	7	CORE					4 m			GW Monitoring Level August 2021
4												
5	174.0	TCR = 100% RQD = 86%	8	CORE								
	173.0											
6												
	172.0	TCR = 100% RQD = %	9	CORE								
7												
8	171.0	TCR = 100% RQD = %	10	CORE								
	170.0											
9												

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW122D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-24
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497477
Easting: -79.726035
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
10		169.0	TCR = 98% RQD = %	11	CORE			
11		168.0	TCR = 100% RQD = %	12	CORE			
12		167.0	TCR = 100% RQD = %	13	CORE			
13		166.0	TCR = 100% RQD = %	14	CORE			
14		165.0	TCR = 100% RQD = %	15	CORE			
15		164.0	TCR = 100% RQD = %	16	CORE			
16		163.0	End of Log					
17		162.0						
18		161.0						
19		160.0						

Penetration / Strength Results
Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80

Moisture / Plasticity
PL MC LL
Moisture / Plasticity: 10 20 30 40

Well Details
#10 Well Slot Sand
2" Schedule 40 PVC Slot 10 Screen

Groundwater Conditions

Headspace Vapor HEX/IBL (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW1D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-23
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497758
Easting: -79.726512
Ground Surface Elevation: 179.6

Depth Scale (m)	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
0	180.0						
	179.0	**Organic Material** ~250 mm Topsoil					
		Silty Clay trace gravel. Brown, firm to stiff, moist.	1	SS	3 3 5 5	8	
1		**Silt Till** trace gravel, trace sand, trace clay. Brown, very stiff, moist.	2	SS	6 13 16	29	
	178.0	...very stiff to hard.	3	SS	7 12 18	30	
2							
	177.0						
3		**Shale** TCR = 100% RQD = 0%	4	SS	50-3"	50	
			5	CORE			
	176.0	TCR = 100% RQD = 46%	6	CORE			GW Monitoring Level August 2021
4							
	175.0						
5							
	174.0	TCR = 100% RQD = 55%	7	CORE			
6							
	173.0						
7		TCR = 100% RQD = 94%	8	CORE			
	172.0						
8							
	171.0	TCR = 100% RQD = 83%	9	CORE			
9							

Penetration / Strength Results: Undrained Shear Strength Values (kPa) 40 80 120 160; Penetration Test Values (Blows / 0.3m) 20 40 60 80

Moisture / Plasticity: PL MC LL; Moisture / Plasticity 10 20 30 40

Moisture / Plasticity values: 10.0, 10.0, 10.0, 10.0

Well Details: 24" Locking Vault; 3/8" Bentonite Pellets; 4 m

Groundwater Conditions

Headspace Vapor HEX/IBL (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW1D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-23
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497758
Easting: -79.726512
Ground Surface Elevation: 179.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
10		170.0	TCR = 98% RQD = 83%	10	CORE			
11		169.0	TCR = 100% RQD = 91%	11	CORE			
12		168.0	TCR = 100% RQD = 96%	12	CORE			
13		167.0	TCR = 100% RQD = 93%	13	CORE			
14		166.0	TCR = 100% RQD = 99%	14	CORE			
15		165.0	TCR = 100% RQD = 91%	15	CORE			
16		164.0	End of Log					
17		163.0						
18		162.0						
19		161.0						

Penetration / Strength Results
Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80

Moisture / Plasticity
PL MC LL
Moisture / Plasticity: 10 20 30 40

Well Details
#10 Well Slot Sand
2" Schedule 40 PVC Slot 10 Screen

Groundwater Conditions

Headspace Vapor HEX/IBL (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW4-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495439
Easting: -79.727801
Ground Surface Elevation: 178.9

Depth Scale (m)	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength (kPa) / Penetration Test Values (Blows / 0.3m)	Moisture / Plasticity (PL, MC, LL)	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
0	179.0	**Fill** Sand, some gravel. Brown, compact, moist.	1	SS	2 10 10 9	20		10.6	24" Locking Vault			
1	178.0	...silty clay, trace gravel. Stiff.	2	SS	2 5 6	11		26.2				
2	177.0	**Silt Till** trace gravel, trace clay. Brown, very stiff, moist.	3	SS	4 10 12	22		14.3				
		...trace sand. Hard.	4	SS	7 15 24	39		14.4	3/8" Bentonite Pellets			
3	176.0	...no clay, trace cobbles. Dense.	5	SS	12 19 27	46		10.3				
4	175.0	...trace clay. Hard.	6	SS	9 14 32	46		9.4	4 m			GW Monitoring Level August 2021
5	174.0											
6	173.0	**Shale** TCR = 100% RQD = 33%	7	SS	50-2"	50		7.8				
7	172.0	TCR = 98% RQD = 83%	8	CORE								
8	171.0	TCR = 100% RQD = 84%	9	CORE								
9	170.0											

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW4-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495439
Easting: -79.727801
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
10		169.0	TCR = 99% RQD = 76%	10	CORE								
11		168.0	TCR = 100% RQD = 95%	11	CORE								
12		167.0											
13		166.0	TCR = 97% RQD = 74%	12	CORE								
14		165.0											
15		164.0	TCR = 100% RQD = 94%	13	CORE								
16		163.0	TCR = 98% RQD = 98%	14	CORE					#10 Well Slot Sand			
17		162.0											
18		161.0	TCR = 98% RQD = 98%	15	CORE					2" Schedule 40 PVC Slot 10 Screen			
19		160.0	End of Log										

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE MW101-20

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2020-09-23
Drilling Method: Hollow Stem - Tri-Phase Group
Datum: Geodetic Elevation

Northing: 43.497419
Easting: -79.726269
Ground Surface Elevation: 179.97

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
0		180.0	**Organic Material** 250 mm										
			Fill Silty Sand.										
1		179.0	Clayey Silt.										
			Shale										
2		178.0											Monitoring Well Dry August 2021
3		177.0											GW Monitoring Level Sept 2021
4		176.0											
5		175.0	End of Log										
6		174.0											
7		173.0											
8		172.0											
9		171.0											

Well Details: 3/8" Bentonite Pellets; #40 Well Slot Sand; 3.07 m; 12" Locking, Water Resistent Vault; 2" Schedule 40 PVC Slot 10 Screen

Additional Notes:
1. Borehole open to approximately 5.1 m depth upon completion.
2. Monitoring well installed at 5.0 m depth below ground surface.
3.
4.

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LOG OF BOREHOLE MW111-20

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2020-09-23
Drilling Method: Hollow Stem - Landshark
Datum: Geodetic Elevation

Northing: 43.4967758989496
Easting: -79.7276524809264
Ground Surface Elevation: 179.25

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
0		180.0											
		179.0	**Organic Material** 150 mm **Fill** Clayey silt, trace sand, trace gravel.										
1		178.0											
2		177.0	**Shale**							3/8" Bentonite Pellets; 2.4 m; 12" Locking, Water Resistent Vault			GW Monitoring Level August 2021
3		176.0											
4		175.0											
5		174.0											
6		173.0											
7		172.0								#40 Well Slot Sand; 2" Schedule 40 PVC Slot 10 Screen			
8		171.0											
9			End of Log										

Additional Notes:
1. Well installed to 8.6 m depth below ground surface.
2.
3.
4.

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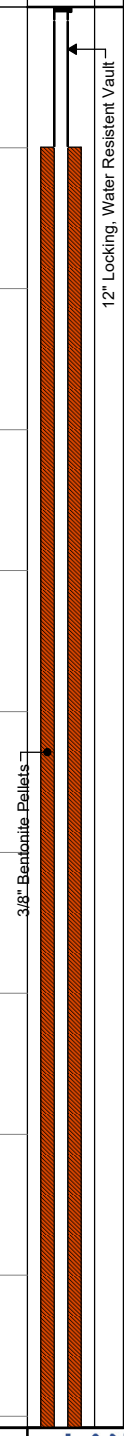
LOG OF BOREHOLE MW117-20

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-09-23
Drilling Method: Hollow Stem
Datum: Geodetic Elevation

Northing: 43.495751
Easting: -79.728563
Ground Surface Elevation: 180.3

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
		181.0						Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
0		180.0	**Asphalt** 400 mm					Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity ○ 10 20 30 40 ○				
1		179.0	**Fill** Clayey silt.										
2		178.0	**Clayey Silt Till**										
3		177.0	**Shale**										
4		176.0											
5		175.0											
6		174.0											
7		173.0											
8		172.0											
9													



Additional Notes:
1. Monitoring Well installed at 17.3 m depth below ground surface.
2.
3.
4.

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LOG OF BOREHOLE MW117-20

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-09-23
Drilling Method: Hollow Stem
Datum: Geodetic Elevation

Northing: 43.495751
Easting: -79.728563
Ground Surface Elevation: 180.3

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
10		171.0								10.12 m			GW Monitoring Level August 2021
11		170.0											
12		169.0											
13		168.0											
14		167.0											
15		166.0								#40 Well Slot Sand			
16		165.0											
17		164.0									2" Schedule 40 PVC Slot 10 Screen		
18		163.0	End of Log										
19		162.0											

Additional Notes:
1. Monitoring Well installed at 17.3 m depth below ground surface.
2.
3.
4.

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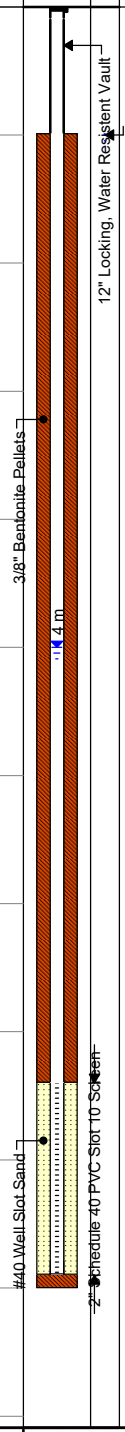
LOG OF BOREHOLE MW118-20

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2020-09-23
Drilling Method: Hollow Stem
Datum: Geodetic Elevation

Northing: 43.495434
Easting: -79.727865
Ground Surface Elevation: 179.7

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor HEX/IBL (ppm) [LEL(%)]	Comments
0		180.0	**Organic Material** 250 mm										
1		179.0	**Fill** Clayey silt, trace gravel.										
2		178.0	**Clayey Silt Till** Trace sand, trace gravel.										
3		177.0	**Shale** Weathered bedrock.										
4		176.0											GW Monitoring Level August 2021
5		175.0											
6		174.0											
7		173.0											
8		172.0											
9		171.0	End of Log										
10		170.0											



Additional Notes:
1. Monitoring well installed at 8.9 m depth below ground surface.
2.
3.
4.

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LOG OF BOREHOLE MW119-20

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2020-09-23
Drilling Method: Hollow Stem
Datum: Geodetic Elevation

Northing: 43.494846
Easting: -79.728314
Ground Surface Elevation: 180.65

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description
0		181.0	
			Organic Material 250 mm
			Fill Clayey silt, trace sand, trace gravel.
1		180.0	
		179.0	
2			
		178.0	
3			**Clayey Silt Till** Trace sand, trace gravel.
			Shale
4		177.0	
		176.0	
5			
		175.0	
6			
		174.0	
7			
		173.0	
8			
		172.0	
9			End of Log
		171.0	
10			

Subsurface Conditions

Samples

Number	Type	Blow Counts/150 mm	N Value

Penetration / Strength Results

Undrained Shear Strength Values (kPa)
40 80 120 160

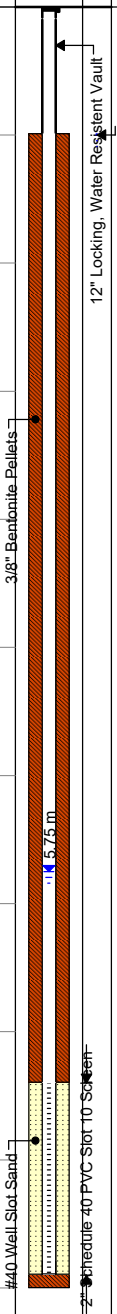
Penetration Test Values (Blows / 0.3m)
20 40 60 80

Moisture / Plasticity

PL MC LL

Moisture / Plasticity
10 20 30 40

Well Details



Groundwater Conditions

Headspace Vapor HEX/IBL (ppm) [LEL(%)]

Comments

GW Monitoring Level
August 2021

Additional Notes:
1. Monitoring well installed at 8.9 m depth below ground surface.
2.
3.
4.

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LOG OF BOREHOLE MW120

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

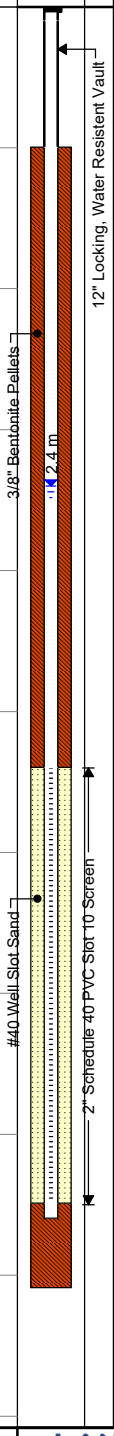
Drill Date: 2021-08-12
Drilling Method: Solid Stem
Datum: Geodetic Elevation

Northing: 43.496104
Easting: -79.727559
Ground Surface Elevation: 178.49

Depth Scale (m)	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
0	179.0						
	178.0	**Organic Material** ~600 mm. Clayey silt, trace sand. brown, loose, moist.	1	SS	3 3 2 3	5	SS1 - PHCs, VOCs, Metals, and OC Pesticides
1		**Fill** Silty clay, trace sand, trace gravel. brown, very stiff, moist.					
	177.0		2	SS	3 9 14	23	Monitoring Well Dry Aug 2021
2		**Clayey Silt** Trace sand, trace gravel. brown, very stiff, moist.					
	176.0	**Shale** Highly weathered. reddish grey, hard, dry to moist.					GW Monitoring Level Sept 2021
3			3	AUG			SS3 - PHCs, VOCs, Metals, and OC Pesticides
	175.0						
4			4	AUG			
	174.0						
5			5	AUG			
	173.0						
6							
	172.0						
7							
	171.0						
8		End of Log					
	170.0						
9							

Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80
Moisture / Plasticity: PL MC LL; 10 20 30 40

Moisture / Plasticity: 19.0, 23.0, 11.0, 5.0, 4.0



Additional Notes:
1. Borehole open to approximately 8.1 m depth upon completion.
2. No groundwater or water seepage encountered.
3.
4.

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LOG OF BOREHOLE MW121

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2021-08-12
Drilling Method: Solid Stem
Datum: Geodetic Elevation

Northing: 43.496256
Easting: -79.726848
Ground Surface Elevation: 178.28

Subsurface Conditions

Depth (m)	Depth/Elevation (m)	Description
0 – ~0.6	178.28	**Organic Material** ~600 mm. Clayey silt, trace sand, trace gravel. brown, firm, moist.
~0.6 – ~2.1		**Fill** Clayey silt, trace sand, trace gravel. brown, firm to stiff, moist.
~2.1 – ~6.6		**Shale** Highly weathered. red, hard, dry to moist.
~6.6		End of Log

Samples

Number	Type	Blow Counts/150 mm	N Value	Moisture (%)	Comments
1	SS	2 2 3 3	5	20.0	SS1 - PHCs, VOCs, and Metals
2	SS	3 6 8	14	14.0	
3	AUG			7.0	SS3 - PHCs, VOCs, Metals, and OC Pesticides
4	AUG			6.0	
5	AUG			5.0	

Penetration / Strength Results: Undrained Shear Strength Values (kPa) 40 80 120 160; Penetration Test Values (Blows / 0.3m) 20 40 60 80

Moisture / Plasticity: PL MC LL; 10 20 30 40

Well Details: 12" Locking, Water Resistent Vault; 3/8" Bentonite Pellets; #40 Well Slot Sand; 2" Schedule 40 PVC Slot 10 Screen

Groundwater Conditions: 2.1 m — GW Monitoring Level Aug 2021

Headspace Vapor HEX/IBL (ppm) [LEL(%)]

Additional Notes:
1. Borehole open, with cave, to approximately 5.8 m depth upon completion.
2. Groundwater or water seepage encountered at approximately 5.0 m depth below ground surface.
3.
4.

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LOG OF BOREHOLE BHMW1D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-23
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497758
Easting: -79.726512
Ground Surface Elevation: 179.6

Depth Scale (m)	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
	180.0						
0		**Organic Material** ~250 mm Topsoil	1	SS	3 3 5 5	8	
	179.0	**Silty Clay** trace gravel. Brown, firm to stiff, moist.					
1		**Silt Till** trace gravel, trace sand, trace clay. Brown, very stiff, moist.	2	SS	6 13 16	29	
	178.0	...very stiff to hard.	3	SS	7 12 18	30	
2							
	177.0						
3		**Shale** TCR = 100% RQD = 0%	4	SS	50-3"	50	
			5	CORE			
	176.0	TCR = 100% RQD = 46%	6	CORE			GW Monitoring Level August 2021
4							
	175.0						
5		TCR = 100% RQD = 55%	7	CORE			
	174.0						
6							
	173.0	TCR = 100% RQD = 94%	8	CORE			
7							
	172.0						
8		TCR = 100% RQD = 83%	9	CORE			
9							

Penetration / Strength Results
Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80

Moisture / Plasticity
PL MC LL
Moisture / Plasticity: 10 20 30 40
10.0 10.0 10.0 10.0

Well Details
24" Locking Vault
3/8" Bentonite Pellets
4 m

Groundwater Conditions

Headspace Vapor (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW1D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-23
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497758
Easting: -79.726512
Ground Surface Elevation: 179.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
10		170.0	TCR = 98% RQD = 83%	10	CORE			
11		169.0	TCR = 100% RQD = 91%	11	CORE			
12		168.0	TCR = 100% RQD = 96%	12	CORE			
13		167.0	TCR = 100% RQD = 93%	13	CORE			
14		166.0	TCR = 100% RQD = 99%	14	CORE			
15		165.0	TCR = 100% RQD = 91%	15	CORE			
16		164.0	End of Log					
17		163.0						
18		162.0						
19		161.0						

Penetration / Strength Results

Undrained Shear Strength Values (kPa)
40 80 120 160

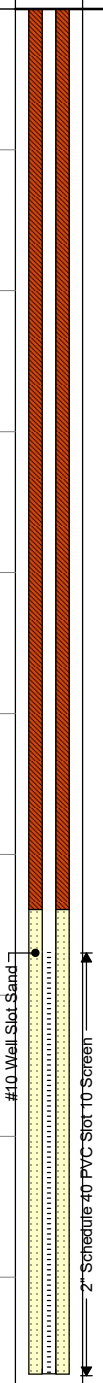
Penetration Test Values (Blows / 0.3m)
20 40 60 80

Moisture / Plasticity

PL MC LL

Moisture / Plasticity
10 20 30 40

Well Details



Groundwater Conditions

Headspace Vapor (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BH2-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic

Northing: 43.49694
Easting: -79.72735
Ground Surface Elevation: 179

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength Values (kPa) 40 80 120 160 / Penetration Test Values (Blows / 0.3m) 20 40 60 80	Moisture / Plasticity PL MC LL / Moisture / Plasticity 10 20 30 40	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
			Organic Material ~250 mm Topsoil										
			Clayey Silt trace sand. Brown, firm, moist.	1	SS	2 2 3 4	5		10.0				
1		178.0	...very stiff.	2	SS	8 12 12	24		10.0				
			Silt Till trace gravel, trace sand. Brown, dense, moist.	3	SS	8 19 20	39		10.0				
2		177.0		4	SS	10 20 28	48		10.0				
3		176.0	...trace clay. Very moist to wet.	5	SS	23 30 31	61		10.0				
4		175.0											
			Shale TCR = 100% RQD = 36%	6	CORE	50-2"	50		10.0				
5		174.0	TCR = 100% RQD = 63%	7	CORE								
6		173.0											
7		172.0	TCR = 100% RQD = 68%	8	CORE								
8		171.0	TCR = 100% RQD = 65%	9	CORE								
9		170.0											
10		169.0											

Additional Notes:
1. Borehole open to approximately 18.5 m depth on completion.
2. Groundwater or water seepage encountered during drilling at approximately 3.2 m below the ground surface.
3.
4.

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Ph: (905) 383-3733

LOG OF BOREHOLE BH2-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic

Northing: 43.49694
Easting: -79.72735
Ground Surface Elevation: 179

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
								Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
								Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity ○ 10 20 30 40 ○				
			TCR = 100% RQD = 78%	10	CORE								
11		168.0											
			TCR = 100% RQD = 86%	11	CORE								
12		167.0											
			TCR = 94% RQD = 87%	12	CORE								
13		166.0											
			TCR = 97% RQD = 91%	13	CORE								
14		165.0											
			TCR = 100% RQD = 90%	14	CORE								
15		164.0											
			TCR = 100% RQD = 90%	15	CORE								
16		163.0											
			End of Log										
17		162.0											
18		161.0											
19		160.0											
20		159.0											

Additional Notes:
1. Borehole open to approximately 18.5 m depth on completion.
2. Groundwater or water seepage encountered during drilling at approximately 3.2 m below the ground surface.
3.
4.

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LOG OF BOREHOLE BH3-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-20
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495378
Easting: -79.728858
Ground Surface Elevation: 180.6

Depth Scale (m)	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
0	180.0	**Organic Material** ~250 mm Topsoil **Clayey Silt** trace gravel. Brown, stiff, moist.	1	SS	7 6 4 4	10	
1		...very stiff.	2	SS	7 9 10	19	
2	179.0	**Silt Till** trace gravel, trace sand, trace clay. Brown, hard, moist.	3	SS	7 12 21	33	
	178.0		4	SS	11 25 29	54	
3			5	SS	14 22 27	49	
	177.0		6	SS	16 18 20	38	
4			7	SS	17 23 21	44	
	176.0						
5	175.0						
6		**Shale** TCR = 100% RQD = 56%	8	SS	50-2"	50	
			9	CORE			
	174.0						
7		TCR = 98% RQD = 63%	10	CORE			
	173.0						
8							
	172.0	TCR = 98% RQD = 67%	11	CORE			
9							
	171.0						
10		TCR = 100% RQD = 78%	12	CORE			
	170.0						
11							

Penetration / Strength Results
Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80

Moisture / Plasticity
PL MC LL
Moisture / Plasticity: 10 20 30 40
15.0
13.1
13.2
10.1
11.1
9.2
9.0
2.8

Well Details | **Groundwater Conditions** | **Headspace Vapor (ppm) [LEL(%)]**

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BH3-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-20
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495378
Easting: -79.728858
Ground Surface Elevation: 180.6

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
								Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
								Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity ○ 10 20 30 40 ○				
12		169.0	TCR = 100% RQD = 67%	13	CORE								
13		168.0	TCR = 100% RQD = 78%	14	CORE								
14		167.0	TCR = 100% RQD = 80%	15	CORE								
15		166.0	TCR = 100% RQD = 84%	16	CORE								
16		165.0	TCR = 100% RQD = 92%	17	CORE								
17		164.0	End of Log										
18		163.0											
19		162.0											
20		161.0											
21		160.0											
22		159.0											

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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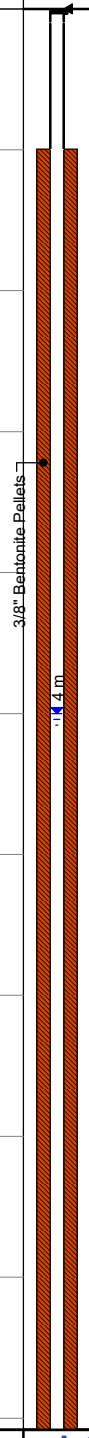
LOG OF BOREHOLE BHMW4-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495439
Easting: -79.727801
Ground Surface Elevation: 178.9

Depth Scale (m)	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Undrained Shear Strength (kPa) / Penetration Test Values (Blows / 0.3m)	Moisture / Plasticity (PL, MC, LL)	Comments
0	179.0	**Fill** Sand, some gravel. Brown, compact, moist.	1	SS	2 10 10 9	20		10.6	
1	178.0	...silty clay, trace gravel. Stiff.	2	SS	2 5 6	11		26.2	
2	177.0	**Silt Till** trace gravel, trace clay. Brown, very stiff, moist.	3	SS	4 10 12	22		14.3	
		...trace sand. Hard.	4	SS	7 15 24	39		14.4	
3	176.0	...no clay, trace cobbles. Dense.	5	SS	12 19 27	46		10.3	
4	175.0	...trace clay. Hard.	6	SS	9 14 32	46		9.4	GW Monitoring Level August 2021
5	174.0								
6	173.0	**Shale** TCR = 100% RQD = 33%	7	SS	50-2"	50		7.8	
7	172.0	TCR = 98% RQD = 83%	8	CORE					
8	171.0	TCR = 100% RQD = 84%	9	CORE					
9	170.0								



Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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Hamilton, Ontario, L8W 2E1
Ph: (905) 383-3733

LOG OF BOREHOLE BHMW4-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-22
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.495439
Easting: -79.727801
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Penetration / Strength Results	Moisture / Plasticity	Well Details	Groundwater Conditions	Headspace Vapor (ppm) [LEL(%)]	Comments
								Undrained Shear Strength Values (kPa) ▲ 40 80 120 160 ▲	PL MC LL				
								Penetration Test Values (Blows / 0.3m) × 20 40 60 80 ×	Moisture / Plasticity ○ 10 20 30 40 ○				
10		169.0	TCR = 99% RQD = 76%	10	CORE								
11		168.0	TCR = 100% RQD = 95%	11	CORE								
12		167.0											
13		166.0	TCR = 97% RQD = 74%	12	CORE								
14		165.0											
15		164.0	TCR = 100% RQD = 94%	13	CORE								
16		163.0	TCR = 98% RQD = 98%	14	CORE					#10 Well Slot Sand			
17		162.0											
18		161.0	TCR = 98% RQD = 98%	15	CORE					2" Schedule 40 PVC Slot 10 Screen			
19		160.0	End of Log										

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

LANDTEK LIMITED
205 Nebo Road, Unit 4B
Hamilton, Ontario, L8W 2E1
Ph: (905) 383-3733

LOG OF BOREHOLE BHMW122D-23

Project No.: 21263
Project Name: Proposed Residential Development
Location: 3275 & 3301 Trafalgar Road, Oakville

Drill Date: 2023-03-24
Drilling Method: Hollow Stem/Coring
Datum: Geodetic Elevation

Northing: 43.497477
Easting: -79.726035
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
0		179.0	**Organic Material** ~250 mm Topsoil					
			Silty Clay trace gravel, trace sand. Brown, stiff, moist.	1	SS	4 4 5 6	9	
1		178.0	...very stiff.	2	SS	5 7 9	16	
			Silt Till trace gravel, trace sand, trace grey shale fragments. Red and brown, dense, moist.	3	SS	10 19 33	52	
2		177.0		4	SS	48 50-3"	50	
		176.0	**Shale** TCR = 100% RQD = 0%	5	SS	50-5"	50	
3				6	CORE			
			TCR = 100% RQD = 49%	7	CORE			GW Monitoring Level August 2021
4		175.0						
		174.0	TCR = 100% RQD = 86%	8	CORE			
5								
		173.0						
6			TCR = 100% RQD = %	9	CORE			
		172.0						
7								
		171.0	TCR = 100% RQD = %	10	CORE			
8								
		170.0						
9								

Undrained Shear Strength Values (kPa): 40 80 120 160
Penetration Test Values (Blows / 0.3m): 20 40 60 80
Moisture / Plasticity: PL MC LL; 10 20 30 40

Moisture / Plasticity: 10.0 | 10.0 | 10.0 | 10.0

Well Details: 24" Locking Vault; 3/8" Bentonite Pellets; 4 m

Groundwater Conditions

Headspace Vapor (ppm) [LEL(%)]

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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LOG OF BOREHOLE BHMW122D-23

Project No.: 21263
Project Name: Proposed Residential Development
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Easting: -79.726035
Ground Surface Elevation: 178.9

Depth Scale (m)	Stratigraphic Symbol	Depth/Elevation (m)	Description	Number	Type	Blow Counts/150 mm	N Value	Comments
10		169.0	TCR = 98% RQD = %	11	CORE			
11		168.0	TCR = 100% RQD = %	12	CORE			
12		167.0	TCR = 100% RQD = %	13	CORE			
13		166.0	TCR = 100% RQD = %	14	CORE			
14		165.0	TCR = 100% RQD = %	15	CORE			
15		164.0	TCR = 100% RQD = %	16	CORE			
16		163.0	End of Log					
17		162.0						
18		161.0						
19		160.0						

Subsurface Conditions | **Samples** | **Penetration / Strength Results** | **Moisture / Plasticity** | **Well Details** | **Groundwater Conditions** | **Headspace Vapor (ppm) [LEL(%)]**

Penetration / Strength Results
Undrained Shear Strength Values (kPa)
40 80 120 160

Penetration Test Values (Blows / 0.3m)
20 40 60 80

Moisture / Plasticity
PL MC LL
Moisture / Plasticity
10 20 30 40

Additional Notes:
1. Borehole open to approximately 18.7 m depth on completion.
2. Groundwater or water seepage not encountered during drilling.
3.
4.

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APPENDIX B

Laboratory CERTIFICATES OF ANALYSES
Including Laboratory QA/QC Data

Soil and Groundwater Results

PARACEL LABORATORIES LTD.

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Certificate of Analysis

Landtek Limited

205 Nebo Road, Unit 3
Hamilton, ON L8W2E1
Attn: Nicole Harper

Client PO: 21262
Project: 21262
Custody: 59601

Report Date: 18-Aug-2021
Order Date: 12-Aug-2021

Order #: 2133508

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

Paracel ID	Client ID	Paracel ID	Client ID
2133508-01	BH116 SS1		
2133508-02	BH122 SS1		

Approved By:

Milan Ralitsch, PhD
Senior Technical Manager

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 18-Aug-2021

Order Date: 12-Aug-2021

Project Description: 21262

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	17-Aug-21	17-Aug-21
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	16-Aug-21	18-Aug-21
Conductivity	MOE E3138 - probe @25 °C, water ext	17-Aug-21	18-Aug-21
Cyanide, free	MOE E3015 - Auto Colour, water extraction	14-Aug-21	14-Aug-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Aug-21	18-Aug-21
PHC F1	CWS Tier 1 - P&T GC-FID	13-Aug-21	16-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	17-Aug-21	18-Aug-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	17-Aug-21	17-Aug-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	17-Aug-21	18-Aug-21
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	13-Aug-21	17-Aug-21
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	17-Aug-21	18-Aug-21
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	13-Aug-21	16-Aug-21
SAR	Calculated	18-Aug-21	18-Aug-21
Solids, %	Gravimetric, calculation	13-Aug-21	16-Aug-21

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 18-Aug-2021
Order Date: 12-Aug-2021
Project Description: 21262

Summary of 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. Regulatory limts displayed in brackets, (), applies to medium and fine textured soils.

				Criteria:
Client ID	**Analyte**	**MDL / Units**	**Result**	**Reg 153/04 (2011)-Table 1 Residential/Industrial**
BH116 SS1	Trichloroethylene	0.05 ug/g	0.07	0.05 ug/g

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 18-Aug-2021

Order Date: 12-Aug-2021

Project Description: 21262

	Client ID:	BH116 SS1	BH122 SS1	-	-		
	Sample Date:	11-Aug-2021	11-Aug-2021	-	-	**Criteria:**	
	Sample ID:	2133508-01	2133508-02	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	75.0	87.8	-	-		
General Inorganics							
SAR	0.01 N/A	1.20	0.82	-	-	2.4	N/A
Conductivity	5 uS/cm	412	330	-	-	0.57	mS/cm
Cyanide, free	0.03 ug/g	<0.03	<0.03	-	-	0.051	ug/g
pH	0.05 pH Units	7.08	7.29	-	-	5 - 9	pH units
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	1.3	ug/g
Arsenic	1.0 ug/g	2.5	4.8	-	-	18	ug/g
Barium	1.0 ug/g	61.4	83.9	-	-	220	ug/g
Beryllium	0.5 ug/g	<0.5	0.7	-	-	2.5	ug/g
Boron	5.0 ug/g	11.3	11.8	-	-	36	ug/g
Boron, available	0.5 ug/g	0.6	0.8	-	-		
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	1.2	ug/g
Chromium	5.0 ug/g	14.4	20.2	-	-	70	ug/g
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	-	0.66	ug/g
Cobalt	1.0 ug/g	5.6	7.7	-	-	21	ug/g
Copper	5.0 ug/g	12.6	20.0	-	-	92	ug/g
Lead	1.0 ug/g	9.3	12.6	-	-	120	ug/g
Mercury	0.1 ug/g	<0.1	<0.1	-	-	0.27	ug/g
Molybdenum	1.0 ug/g	<1.0	<1.0	-	-	2	ug/g
Nickel	5.0 ug/g	11.8	17.6	-	-	82	ug/g
Selenium	1.0 ug/g	<1.0	<1.0	-	-	1.5	ug/g

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 18-Aug-2021
Order Date: 12-Aug-2021
Project Description: 21262

	Client ID:	BH116 SS1	BH122 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-2021	11-Aug-2021	-	-		
	Sample ID:	2133508-01	2133508-02	-	-	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Silver	0.3 ug/g	<0.3	<0.3	-	-	0.5	ug/g
Thallium	1.0 ug/g	<1.0	<1.0	-	-	1	ug/g
Uranium	1.0 ug/g	<1.0	<1.0	-	-	2.5	ug/g
Vanadium	10.0 ug/g	21.3	30.2	-	-	86	ug/g
Zinc	20.0 ug/g	45.0	59.7	-	-	290	ug/g
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	-	-	0.5	ug/g
Benzene	0.02 ug/g	<0.02	<0.02	-	-	0.02	ug/g
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Bromoform	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Bromomethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Chlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Chloroform	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 18-Aug-2021
Order Date: 12-Aug-2021
Project Description: 21262

	Client ID:	BH116 SS1	BH122 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-2021	11-Aug-2021	-	-		
	Sample ID:	2133508-01	2133508-02	-	-	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-		
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-		
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Ethylene dibromide (dibromoethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Hexane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	-	-	0.5	ug/g
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	-	-	0.5	ug/g
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Methylene Chloride	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Styrene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Toluene	0.05 ug/g	<0.05	<0.05	-	-	0.2	ug/g
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Trichloroethylene	0.05 ug/g	0.07	<0.05	-	-	0.05	ug/g
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	-	-	0.25	ug/g
Vinyl chloride	0.02 ug/g	<0.02	<0.02	-	-	0.02	ug/g
m,p-Xylenes	0.05 ug/g	<0.05	<0.05	-	-		
o-Xylene	0.05 ug/g	<0.05	<0.05	-	-		

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 18-Aug-2021
Order Date: 12-Aug-2021
Project Description: 21262

	Client ID:	BH116 SS1	BH122 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-2021	11-Aug-2021	-	-		
	Sample ID:	2133508-01	2133508-02	-	-	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Xylenes, total	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
4-Bromofluorobenzene	Surrogate	93.4%	92.4%	-	-		
Dibromofluoromethane	Surrogate	92.2%	89.3%	-	-		
Toluene-d8	Surrogate	99.3%	99.0%	-	-		
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	25	ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	10	ug/g
F3 PHCs (C16-C34)	8 ug/g	39	14	-	-	240	ug/g
F4 PHCs (C34-C50)	6 ug/g	49	24	-	-	120	ug/g
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	<0.02	-	-	0.072	ug/g
Acenaphthylene	0.02 ug/g	<0.02	<0.02	-	-	0.093	ug/g
Anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.16	ug/g
Benzo [a] anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.36	ug/g
Benzo [a] pyrene	0.02 ug/g	<0.02	<0.02	-	-	0.3	ug/g
Benzo [b] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	0.47	ug/g
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	<0.02	-	-	0.68	ug/g
Benzo [k] fluoranthene	0.02 ug/g	<0.02	<0.02	-	-	0.48	ug/g
Chrysene	0.02 ug/g	<0.02	<0.02	-	-	2.8	ug/g
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	<0.02	-	-	0.1	ug/g
Fluoranthene	0.02 ug/g	0.03	<0.02	-	-	0.56	ug/g
Fluorene	0.02 ug/g	<0.02	<0.02	-	-	0.12	ug/g
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	<0.02	-	-	0.23	ug/g
1-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	0.59	ug/g

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 18-Aug-2021

Order Date: 12-Aug-2021

Project Description: 21262

	Client ID:	BH116 SS1	BH122 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-2021	11-Aug-2021	-	-		
	Sample ID:	2133508-01	2133508-02	-	-	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
2-Methylnaphthalene	0.02 ug/g	<0.02	<0.02	-	-	0.59	ug/g
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	<0.03	-	-	0.59	ug/g
Naphthalene	0.01 ug/g	<0.01	<0.01	-	-	0.09	ug/g
Phenanthrene	0.02 ug/g	<0.02	<0.02	-	-	0.69	ug/g
Pyrene	0.02 ug/g	<0.02	<0.02	-	-	1	ug/g
2-Fluorobiphenyl	Surrogate	63.6%	67.7%	-	-		
Terphenyl-d14	Surrogate	63.1%	67.5%	-	-		
Pesticides, OC							
Aldrin	0.01 ug/g	<0.01	<0.01	-	-	0.05	ug/g
gamma-BHC (Lindane)	0.01 ug/g	<0.01	<0.01	-	-	0.01	ug/g
alpha-Chlordane	0.01 ug/g	<0.01	<0.01	-	-		
gamma-Chlordane	0.01 ug/g	<0.01	<0.01	-	-		
Chlordane	0.01 ug/g	<0.01	<0.01	-	-	0.05	ug/g
o,p'-DDD	0.01 ug/g	<0.01	<0.01	-	-		
p,p'-DDD	0.02 ug/g	<0.02	<0.02	-	-		
DDD	0.02 ug/g	<0.02	<0.02	-	-	0.05	ug/g
o,p'-DDE	0.01 ug/g	<0.01	<0.01	-	-		
p,p'-DDE	0.01 ug/g	<0.01	<0.01	-	-		
DDE	0.01 ug/g	<0.01	<0.01	-	-	0.05	ug/g
o,p'-DDT	0.01 ug/g	<0.01	<0.01	-	-		
p,p'-DDT	0.01 ug/g	<0.01	<0.01	-	-		
DDT	0.01 ug/g	<0.01	<0.01	-	-	1.4	ug/g
Dieldrin	0.02 ug/g	<0.02	<0.02	-	-	0.05	ug/g
Endrin	0.02 ug/g	<0.02	<0.02	-	-	0.04	ug/g

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 18-Aug-2021

Order Date: 12-Aug-2021

Project Description: 21262

	Client ID:	BH116 SS1	BH122 SS1	-	-			
	Sample Date:	11-Aug-2021	11-Aug-2021	-	-	**Criteria:**		
	Sample ID:	2133508-01	2133508-02	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**		
	Matrix:	Soil	Soil	-	-			
	MDL/Units							
Endosulfan I	0.01 ug/g	<0.01	<0.01	-	-			
Endosulfan II	0.02 ug/g	<0.02	<0.02	-	-			
Endosulfan I/II	0.02 ug/g	<0.02	<0.02	-	-	0.04	ug/g	
Heptachlor	0.01 ug/g	<0.01	<0.01	-	-	0.05	ug/g	
Heptachlor epoxide	0.01 ug/g	<0.01	<0.01	-	-	0.04	ug/g	
Hexachlorobenzene	0.01 ug/g	<0.01	<0.01	-	-	0.01	ug/g	
Hexachlorobutadiene	0.01 ug/g	<0.01	<0.01	-	-	0.01	ug/g	
Hexachloroethane	0.01 ug/g	<0.01	<0.01	-	-	0.01	ug/g	
Methoxychlor	0.01 ug/g	<0.01	<0.01	-	-	0.05	ug/g	
Decachlorobiphenyl	Surrogate	117%	91.7%	-	-			

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%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						
Pesticides, OC									
Aldrin	ND	0.01	ug/g						
gamma-BHC (Lindane)	ND	0.01	ug/g						
alpha-Chlordane	ND	0.01	ug/g						
gamma-Chlordane	ND	0.01	ug/g						
Chlordane	ND	0.01	ug/g						
o,p'-DDD	ND	0.01	ug/g						
p,p'-DDD	ND	0.02	ug/g						
DDD	ND	0.02	ug/g						
o,p'-DDE	ND	0.01	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
p,p'-DDE	ND	0.01	ug/g						
DDE	ND	0.01	ug/g						
o,p'-DDT	ND	0.01	ug/g						
p,p'-DDT	ND	0.01	ug/g						
DDT	ND	0.01	ug/g						
Dieldrin	ND	0.02	ug/g						
Endrin	ND	0.02	ug/g						
Endosulfan I	ND	0.01	ug/g						
Endosulfan II	ND	0.02	ug/g						
Endosulfan I/II	ND	0.02	ug/g						
Heptachlor	ND	0.01	ug/g						
Heptachlor epoxide	ND	0.01	ug/g						
Hexachlorobenzene	ND	0.01	ug/g						
Hexachlorobutadiene	ND	0.01	ug/g						
Hexachloroethane	ND	0.01	ug/g						
Methoxychlor	ND	0.01	ug/g						
Surrogate: Decachlorobiphenyl	*0.0868*		*ug/g*		*86.8*	*50-140*			
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.03	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	*0.111*		*ug/g*		*53.4*	*50-140*			
Surrogate: Terphenyl-d14	*0.147*		*ug/g*		*73.5*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*7.55*		*ug/g*		*94.4*	*50-140*			
Surrogate: Dibromofluoromethane	*8.02*		*ug/g*		*100*	*50-140*			
Surrogate: Toluene-d8	*7.75*		*ug/g*		*96.9*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.29	0.01	N/A	0.28			3.5	30	
Conductivity	214	5	uS/cm	215			0.5	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.25	0.05	pH Units	7.27			0.3	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)	25	8	ug/g	24			1.9	30	
F4 PHCs (C34-C50)	45	6	ug/g	56			21.7	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.8	1.0	ug/g	2.5			11.9	30	
Barium	61.5	1.0	ug/g	61.4			0.1	30	
Beryllium	0.5	0.5	ug/g	ND			NC	30	
Boron, available	0.61	0.5	ug/g	0.79			25.8	35	
Boron	ND	5.0	ug/g	11.3			NC	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	14.7	5.0	ug/g	14.4			2.1	30	
Cobalt	5.7	1.0	ug/g	5.6			1.9	30	
Copper	12.9	5.0	ug/g	12.6			2.7	30	
Lead	9.6	1.0	ug/g	9.3			3.3	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	11.9	5.0	ug/g	11.8			1.5	30	
Selenium	1.1	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	21.2	10.0	ug/g	21.3			0.7	30	
Zinc	45.9	20.0	ug/g	45.0			2.1	30	
Pesticides, OC									
Aldrin	ND	0.01	ug/g	ND			NC	40	
gamma-BHC (Lindane)	ND	0.01	ug/g	ND			NC	40	
alpha-Chlordane	ND	0.01	ug/g	ND			NC	40	
gamma-Chlordane	ND	0.01	ug/g	ND			NC	40	
o,p'-DDD	ND	0.01	ug/g	ND			NC	40	
p,p'-DDD	ND	0.02	ug/g	ND			NC	40	
o,p'-DDE	ND	0.01	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
p,p'-DDE	ND	0.01	ug/g	ND			NC	40	
o,p'-DDT	ND	0.01	ug/g	ND			NC	40	
p,p'-DDT	ND	0.01	ug/g	ND			NC	40	
Dieldrin	ND	0.02	ug/g	ND			NC	40	
Endrin	ND	0.02	ug/g	ND			NC	40	
Endosulfan I	ND	0.01	ug/g	ND			NC	40	
Endosulfan II	ND	0.02	ug/g	ND			NC	40	
Heptachlor	ND	0.01	ug/g	ND			NC	40	
Heptachlor epoxide	ND	0.01	ug/g	ND			NC	40	
Hexachlorobenzene	ND	0.01	ug/g	ND			NC	40	
Hexachlorobutadiene	ND	0.01	ug/g	ND			NC	40	
Hexachloroethane	ND	0.01	ug/g	ND			NC	40	
Methoxychlor	ND	0.01	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.123*		ug/g		*97.9*	*50-140*			
Physical Characteristics									
% Solids	84.2	0.1	% by Wt.	85.2			1.3	25	
Semi-Volatiles									
Acenaphthene	0.053	0.02	ug/g	0.027			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	0.086	0.02	ug/g	0.046			NC	40	
Benzo [a] anthracene	0.162	0.02	ug/g	0.095			NC	40	
Benzo [a] pyrene	0.146	0.02	ug/g	0.091			NC	40	
Benzo [b] fluoranthene	0.176	0.02	ug/g	0.103			NC	40	
Benzo [g,h,i] perylene	0.078	0.02	ug/g	0.050			NC	40	
Benzo [k] fluoranthene	0.077	0.02	ug/g	0.042			NC	40	
Chrysene	0.160	0.02	ug/g	0.096			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.480	0.02	ug/g	0.273			NC	40	
Fluorene	0.056	0.02	ug/g	0.025			NC	40	
Indeno [1,2,3-cd] pyrene	0.097	0.02	ug/g	0.068			35.5	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	0.390	0.02	ug/g	0.202			NC	40	
Pyrene	0.301	0.02	ug/g	0.173			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.142*		ug/g		*59.6*	*50-140*			
Surrogate: Terphenyl-d14	*0.150*		ug/g		*65.4*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	0.068	0.05	ug/g	0.068			0.0	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*12.8*		ug/g		*93.7*	*50-140*			
Surrogate: Dibromofluoromethane	*12.5*		ug/g		*91.7*	*50-140*			
Surrogate: Toluene-d8	*13.4*		ug/g		*98.4*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.244	0.03	ug/g	ND	68.2	70-130			QM-07
Hydrocarbons									
F1 PHCs (C6-C10)	60	7	ug/g	ND	85.5	80-120			
F2 PHCs (C10-C16)	80	4	ug/g	ND	83.2	60-140			
F3 PHCs (C16-C34)	213	8	ug/g	24	88.1	60-140			
F4 PHCs (C34-C50)	179	6	ug/g	56	79.4	60-140			
Metals									
Antimony	139	1.0	ug/g	ND	111	70-130			
Arsenic	139	1.0	ug/g	2.5	109	70-130			
Barium	204	1.0	ug/g	61.4	114	70-130			
Beryllium	125	0.5	ug/g	ND	99.9	70-130			
Boron, available	5.03	0.5	ug/g	ND	101	70-122			
Boron	136	5.0	ug/g	11.3	99.9	70-130			
Cadmium	127	0.5	ug/g	ND	101	70-130			
Chromium (VI)	4.4	0.2	ug/g	ND	87.5	70-130			
Chromium	144	5.0	ug/g	14.4	104	70-130			
Cobalt	132	1.0	ug/g	5.6	101	70-130			
Copper	144	5.0	ug/g	12.6	105	70-130			
Lead	132	1.0	ug/g	9.3	98.5	70-130			
Mercury	1.41	0.1	ug/g	ND	94.2	70-130			
Molybdenum	129	1.0	ug/g	ND	104	70-130			
Nickel	142	5.0	ug/g	11.8	104	70-130			
Selenium	129	1.0	ug/g	ND	103	70-130			
Silver	114	0.3	ug/g	ND	91.3	70-130			
Thallium	124	1.0	ug/g	ND	99.0	70-130			
Uranium	124	1.0	ug/g	ND	99.3	70-130			
Vanadium	152	10.0	ug/g	21.3	104	70-130			
Zinc	186	20.0	ug/g	45.0	113	70-130			
Pesticides, OC									
Aldrin	0.21	0.01	ug/g	ND	85.5	50-140			
gamma-BHC (Lindane)	0.19	0.01	ug/g	ND	77.1	50-140			
alpha-Chlordane	0.19	0.01	ug/g	ND	76.5	50-140			
gamma-Chlordane	0.19	0.01	ug/g	ND	76.4	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o,p'-DDD	0.19	0.01	ug/g	ND	74.8	50-140			
p,p'-DDD	0.20	0.02	ug/g	ND	78.6	50-140			
o,p'-DDE	0.21	0.01	ug/g	ND	84.7	50-140			
p,p'-DDE	0.19	0.01	ug/g	ND	74.9	50-140			
o,p'-DDT	0.20	0.01	ug/g	ND	79.6	50-140			
p,p'-DDT	0.18	0.01	ug/g	ND	71.3	50-140			
Dieldrin	0.21	0.02	ug/g	ND	85.1	50-140			
Endrin	0.14	0.02	ug/g	ND	57.3	50-140			
Endosulfan I	0.21	0.01	ug/g	ND	83.0	50-140			
Endosulfan II	0.19	0.02	ug/g	ND	75.0	50-140			
Heptachlor	0.20	0.01	ug/g	ND	80.7	50-140			
Heptachlor epoxide	0.21	0.01	ug/g	ND	83.9	50-140			
Hexachlorobenzene	0.22	0.01	ug/g	ND	87.9	50-140			
Hexachlorobutadiene	0.30	0.01	ug/g	ND	119	50-140			
Hexachloroethane	0.21	0.01	ug/g	ND	85.0	50-140			
Methoxychlor	0.14	0.01	ug/g	ND	54.6	50-140			
Surrogate: Decachlorobiphenyl	*0.120*		*ug/g*		*95.8*	*50-140*			
Semi-Volatiles									
Acenaphthene	0.112	0.02	ug/g	0.027	74.6	50-140			
Acenaphthylene	0.067	0.02	ug/g	ND	58.6	50-140			
Anthracene	0.128	0.02	ug/g	0.046	71.5	50-140			
Benzo [a] anthracene	0.208	0.02	ug/g	0.095	98.8	50-140			
Benzo [a] pyrene	0.207	0.02	ug/g	0.091	102	50-140			
Benzo [b] fluoranthene	0.215	0.02	ug/g	0.103	98.0	50-140			
Benzo [g,h,i] perylene	0.136	0.02	ug/g	0.050	74.5	50-140			
Benzo [k] fluoranthene	0.129	0.02	ug/g	0.042	75.7	50-140			
Chrysene	0.205	0.02	ug/g	0.096	96.0	50-140			
Dibenzo [a,h] anthracene	0.084	0.02	ug/g	ND	73.1	50-140			
Fluoranthene	0.475	0.02	ug/g	0.273	177	50-140			QM-07
Fluorene	0.130	0.02	ug/g	0.025	91.4	50-140			
Indeno [1,2,3-cd] pyrene	0.152	0.02	ug/g	0.068	74.0	50-140			
1-Methylnaphthalene	0.098	0.02	ug/g	ND	86.0	50-140			
2-Methylnaphthalene	0.090	0.02	ug/g	ND	78.8	50-140			
Naphthalene	0.087	0.01	ug/g	ND	75.8	50-140			
Phenanthrene	0.371	0.02	ug/g	0.202	148	50-140			QM-07

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Pyrene	0.305	0.02	ug/g	0.173	115	50-140			
Surrogate: 2-Fluorobiphenyl	*0.153*		*ug/g*		*64.5*	*50-140*			
Surrogate: Terphenyl-d14	*0.147*		*ug/g*		*64.1*	*50-140*			
Volatiles									
Acetone	21.1	0.50	ug/g	ND	108	50-140			
Benzene	8.16	0.02	ug/g	ND	101	60-130			
Bromodichloromethane	8.20	0.05	ug/g	ND	102	60-130			
Bromoform	8.13	0.05	ug/g	ND	101	60-130			
Bromomethane	9.41	0.05	ug/g	ND	118	50-140			
Carbon Tetrachloride	8.06	0.05	ug/g	ND	101	60-130			
Chlorobenzene	8.47	0.05	ug/g	ND	105	60-130			
Chloroform	9.30	0.05	ug/g	ND	116	60-130			
Dibromochloromethane	8.02	0.05	ug/g	ND	100	60-130			
Dichlorodifluoromethane	7.77	0.05	ug/g	ND	97.1	50-140			
1,2-Dichlorobenzene	8.54	0.05	ug/g	ND	107	60-130			
1,3-Dichlorobenzene	8.56	0.05	ug/g	ND	107	60-130			
1,4-Dichlorobenzene	8.61	0.05	ug/g	ND	107	60-130			
1,1-Dichloroethane	8.28	0.05	ug/g	ND	104	60-130			
1,2-Dichloroethane	7.86	0.05	ug/g	ND	97.7	60-130			
1,1-Dichloroethylene	7.64	0.05	ug/g	ND	95.6	60-130			
cis-1,2-Dichloroethylene	8.12	0.05	ug/g	ND	101	60-130			
trans-1,2-Dichloroethylene	7.97	0.05	ug/g	ND	99.2	60-130			
1,2-Dichloropropane	8.25	0.05	ug/g	ND	103	60-130			
cis-1,3-Dichloropropylene	8.31	0.05	ug/g	ND	104	60-130			
trans-1,3-Dichloropropylene	8.37	0.05	ug/g	ND	104	60-130			
Ethylbenzene	8.53	0.05	ug/g	ND	106	60-130			
Ethylene dibromide (dibromoethane, 1,2-	8.47	0.05	ug/g	ND	105	60-130			
Hexane	10.0	0.05	ug/g	ND	125	60-130			
Methyl Ethyl Ketone (2-Butanone)	19.4	0.50	ug/g	ND	94.5	50-140			
Methyl Isobutyl Ketone	19.8	0.50	ug/g	ND	102	50-140			
Methyl tert-butyl ether	19.7	0.05	ug/g	ND	98.6	50-140			
Methylene Chloride	8.12	0.05	ug/g	ND	101	60-130			
Styrene	8.70	0.05	ug/g	ND	108	60-130			
1,1,1,2-Tetrachloroethane	8.51	0.05	ug/g	ND	106	60-130			
1,1,2,2-Tetrachloroethane	8.69	0.05	ug/g	ND	108	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Tetrachloroethylene	8.13	0.05	ug/g	ND	101	60-130			
Toluene	8.43	0.05	ug/g	ND	105	60-130			
1,1,1-Trichloroethane	8.06	0.05	ug/g	ND	101	60-130			
1,1,2-Trichloroethane	8.37	0.05	ug/g	ND	104	60-130			
Trichloroethylene	8.39	0.05	ug/g	ND	104	60-130			
Trichlorofluoromethane	8.57	0.05	ug/g	ND	107	50-140			
Vinyl chloride	8.37	0.02	ug/g	ND	105	50-140			
m,p-Xylenes	16.9	0.05	ug/g	ND	105	60-130			
o-Xylene	8.43	0.05	ug/g	ND	105	60-130			
Surrogate: 4-Bromofluorobenzene	*15.8*		*ug/g*		*98.7*	*50-140*			
Surrogate: Dibromofluoromethane	*19.1*		*ug/g*		*120*	*50-140*			
Surrogate: Toluene-d8	*15.9*		*ug/g*		*99.3*	*50-140*			

PARACEL LABORATORIES LTD.

Order #: 2133508

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 18-Aug-2021
Order Date: 12-Aug-2021
Project Description: 21262

Qualifier Notes:

QC Qualifiers :

QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

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/Solid results are reported on a dry weight basis unless otherwise indicated
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.

PARACEL LABORATORIES LTD.

Paracel ID: 2133508

Paracel Order Number (Lab Use Only)

Chain Of Custody (Lab Use Only)

№ 59601

Page 1 of 1

Client Name: Landtek	Project Ref: 21262		
Contact Name: Nicole Harper	Quote #:		
Address: Nebo Rd	PO #: 21262		
Telephone:	E-mail: nicole@landtek.ca		

Turnaround Time

☐ 1 day ☐ 3 day

☐ 2 day ☒ Regular

Date Required:

Regulation 153/04

☒ Table 1 ☒ Res/Park ☒ Med/Fine

☐ Table 2 ☐ Ind/Comm ☐ Coarse

☐ Table 3 ☐ Agri/Other

☐ Table ___

For RSC: ☐ Yes ☒ No

Other Regulation

☐ REG 558 ☐ PWQO

☐ CCME ☐ MISA

☐ SU - Sani ☐ SU - Storm

Mun:

☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Time	M.I	OC Pesticides	VOC / PHC	PAHs								
1	BH116 SS1	S		4	AUG 11 2021		X	X	X	X								
2	BH122 SS1	S		4	" "		X	X	X	X								
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments:

Method of Delivery: Walk in

Relinquished By (Sign): [signature]	Received By Driver/Depot:	Received at Lab: AM	Verified By: AM
Relinquished By (Print): Nicole Harper	Date/Time:	Date/Time: 12/8/21 11:30	Date/Time: 12/8/21 12:45
Date/Time: Aug 12/21 1:30	Temperature: °C	Temperature: 12.6 °C	pH Verified: ☐ By:

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Certificate of Analysis

Landtek Limited
205 Nebo Road, Unit 3
Hamilton, ON L8W 2E1
Attn: Nicole Harper

Client PO: 21262
Project: 21262
Custody: 59602

Report Date: 11-Jan-2024
Order Date: 12-Aug-2021

Revised Report

Order #: 2133510

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

Paracel ID	Client ID
2133510-04	BH123 SS1
2133510-05	BH118 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	18-Aug-21	18-Aug-21
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	16-Aug-21	18-Aug-21
Conductivity	MOE E3138 - probe @25 °C, water ext	17-Aug-21	18-Aug-21
Cyanide, free	MOE E3015 - Auto Colour, water extraction	14-Aug-21	14-Aug-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Aug-21	18-Aug-21
PHC F1	CWS Tier 1 - P&T GC-FID	13-Aug-21	16-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	17-Aug-21	18-Aug-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	17-Aug-21	17-Aug-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	17-Aug-21	18-Aug-21
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	13-Aug-21	17-Aug-21
REG 153: pH, soil	EPA 150.1 - pH probe @ 25 °C, CaCl buffered ext.	17-Aug-21	18-Aug-21
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	13-Aug-21	16-Aug-21
SAR	Calculated	18-Aug-21	18-Aug-21
Solids, %	CWS Tier 1 - Gravimetric	13-Aug-21	16-Aug-21

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 Res/Park, fine	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 12-Aug-2021

Client PO: 21262

Project Description: 21262

	Client ID:	BH123 SS1	BH118 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-21 00:00	11-Aug-21 00:00	-	-	Reg 153/04 -T2	-
	Sample ID:	2133510-04	2133510-05	-	-	Res/Park, fine	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	86.4	84.8	-	-	-	-
General Inorganics							
SAR	0.01 N/A	0.11	0.16	-	-	5 N/A	-
Conductivity	5 uS/cm	179	227	-	-	0.7 mS/cm	-
Cyanide, free	0.03 ug/g	<0.03	<0.03	-	-	0.051 ug/g	-
pH	0.05 pH Units	7.34	7.44	-	-	5.00 - 9.00 pH Units	-
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	7.5 ug/g	-
Arsenic	1.0 ug/g	3.2	5.4	-	-	18 ug/g	-
Barium	1.0 ug/g	53.9	94.1	-	-	390 ug/g	-
Beryllium	0.5 ug/g	<0.5	1.0	-	-	5 ug/g	-
Boron	5.0 ug/g	9.8	18.4	-	-	120 ug/g	-
Boron, available	0.5 ug/g	<0.5	<0.5	-	-	1.5 ug/g	-
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	1.2 ug/g	-
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	-	10 ug/g	-
Chromium	5.0 ug/g	13.4	21.9	-	-	160 ug/g	-
Cobalt	1.0 ug/g	6.8	11.4	-	-	22 ug/g	-
Copper	5.0 ug/g	16.4	28.1	-	-	180 ug/g	-
Lead	1.0 ug/g	8.0	16.0	-	-	120 ug/g	-
Mercury	0.1 ug/g	<0.1	<0.1	-	-	1.8 ug/g	-
Molybdenum	1.0 ug/g	<1.0	<1.0	-	-	6.9 ug/g	-
Nickel	5.0 ug/g	14.2	25.2	-	-	130 ug/g	-
Selenium	1.0 ug/g	<1.0	<1.0	-	-	2.4 ug/g	-
Silver	0.3 ug/g	<0.3	<0.3	-	-	25 ug/g	-
Thallium	1.0 ug/g	<1.0	<1.0	-	-	1 ug/g	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 12-Aug-2021

Client PO: **21262**

Project Description: **21262**

	Client ID:	BH123 SS1	BH118 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-21 00:00	11-Aug-21 00:00	-	-	Reg 153/04 -T2	-
	Sample ID:	2133510-04	2133510-05	-	-	Res/Park, fine	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Metals							
Uranium	1.0 ug/g	<1.0	<1.0	-	-	23 ug/g	-
Vanadium	10.0 ug/g	20.1	31.9	-	-	86 ug/g	-
Zinc	20.0 ug/g	37.7	60.6	-	-	340 ug/g	-
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	-	-	28 ug/g	-
Benzene	0.02 ug/g	<0.02	<0.02	-	-	0.17 ug/g	-
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	-	-	1.9 ug/g	-
Bromoform	0.05 ug/g	<0.05	<0.05	-	-	0.26 ug/g	-
Bromomethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	-	-	0.12 ug/g	-
Chlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	2.7 ug/g	-
Chloroform	0.05 ug/g	<0.05	<0.05	-	-	0.18 ug/g	-
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	-	-	2.9 ug/g	-
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	-	-	25 ug/g	-
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	1.7 ug/g	-
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	6 ug/g	-
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.097 ug/g	-
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.6 ug/g	-
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	2.5 ug/g	-
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.75 ug/g	-
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	-	-	0.085 ug/g	-
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-	-	-
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-	-	-

	Client ID:	BH123 SS1	BH118 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-21 00:00	11-Aug-21 00:00	-	-	Reg 153/04 -T2 Res/Park, fine	-
	Sample ID:	2133510-04	2133510-05	-	-		
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Volatiles							
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	-	-	0.081 ug/g	-
Ethylene dibromide (dibromoethane,	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	1.6 ug/g	-
Hexane	0.05 ug/g	<0.05	<0.05	-	-	34 ug/g	-
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	-	-	44 ug/g	-
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	-	-	4.3 ug/g	-
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	-	-	1.4 ug/g	-
Methylene Chloride	0.05 ug/g	<0.05	<0.05	-	-	0.96 ug/g	-
Styrene	0.05 ug/g	<0.05	<0.05	-	-	2.2 ug/g	-
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	-	-	2.3 ug/g	-
Toluene	0.05 ug/g	<0.05	<0.05	-	-	6 ug/g	-
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	3.4 ug/g	-
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05 ug/g	-
Trichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.52 ug/g	-
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	-	-	5.8 ug/g	-
Vinyl chloride	0.02 ug/g	<0.02	<0.02	-	-	0.022 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	-	-	25 ug/g	-
4-Bromofluorobenzene	Surrogate	103%	103%	-	-	-	-
Dibromofluoromethane	Surrogate	85.3%	83.0%	-	-	-	-
Toluene-d8	Surrogate	107%	108%	-	-	-	-
Hydrocarbons							

	Client ID:	BH123 SS1	BH118 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-21 00:00	11-Aug-21 00:00	-	-	Reg 153/04 -T2 Res/Park, fine	-
	Sample ID:	2133510-04	2133510-05	-	-		
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	65 ug/g	-
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	150 ug/g	-
F3 PHCs (C16-C34)	8 ug/g	<8	32	-	-	1300 ug/g	-
F4 PHCs (C34-C50)	6 ug/g	<6	<6	-	-	5600 ug/g	-
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	-	-	29 ug/g	-
Acenaphthylene	0.02 ug/g	<0.02	-	-	-	0.17 ug/g	-
Anthracene	0.02 ug/g	<0.02	-	-	-	0.74 ug/g	-
Benzo [a] anthracene	0.02 ug/g	<0.02	-	-	-	0.63 ug/g	-
Benzo [a] pyrene	0.02 ug/g	<0.02	-	-	-	0.3 ug/g	-
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	-	-	0.78 ug/g	-
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	-	-	7.8 ug/g	-
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	-	-	0.78 ug/g	-
Chrysene	0.02 ug/g	<0.02	-	-	-	7.8 ug/g	-
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	-	-	0.1 ug/g	-
Fluoranthene	0.02 ug/g	<0.02	-	-	-	0.69 ug/g	-
Fluorene	0.02 ug/g	<0.02	-	-	-	69 ug/g	-
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	-	-	0.48 ug/g	-
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	3.4 ug/g	-
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	3.4 ug/g	-
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	-	-	-	3.4 ug/g	-
Naphthalene	0.01 ug/g	<0.01	-	-	-	0.75 ug/g	-
Phenanthrene	0.02 ug/g	<0.02	-	-	-	7.8 ug/g	-
Pyrene	0.02 ug/g	<0.02	-	-	-	78 ug/g	-
2-Fluorobiphenyl	Surrogate	58.4%	-	-	-	-	-

	Client ID:	BH123 SS1	BH118 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-21 00:00	11-Aug-21 00:00	-	-	Reg 153/04 -T2	-
	Sample ID:	2133510-04	2133510-05	-	-	Res/Park, fine	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Semi-Volatiles							
Terphenyl-d14	Surrogate	66.0%	-	-	-	-	-
Pesticides, OC							
Aldrin	0.01 ug/g	<0.01	<0.01	-	-	0.05 ug/g	-
gamma-BHC (Lindane)	0.01 ug/g	<0.01	<0.01	-	-	0.063 ug/g	-
alpha-Chlordane	0.01 ug/g	<0.01	<0.01	-	-	-	-
gamma-Chlordane	0.01 ug/g	<0.01	<0.01	-	-	-	-
Chlordane	0.01 ug/g	<0.01	<0.01	-	-	0.05 ug/g	-
o,p'-DDD	0.01 ug/g	<0.01	<0.01	-	-	-	-
p,p'-DDD	0.02 ug/g	<0.02	<0.02	-	-	-	-
DDD	0.02 ug/g	<0.02	<0.02	-	-	3.3 ug/g	-
o,p'-DDE	0.01 ug/g	<0.01	<0.01	-	-	-	-
p,p'-DDE	0.01 ug/g	<0.01	<0.01	-	-	-	-
DDE	0.01 ug/g	<0.01	<0.01	-	-	0.33 ug/g	-
o,p'-DDT	0.01 ug/g	<0.01	<0.01	-	-	-	-
p,p'-DDT	0.01 ug/g	<0.01	<0.01	-	-	-	-
DDT	0.01 ug/g	<0.01	<0.01	-	-	1.4 ug/g	-
Dieldrin	0.02 ug/g	<0.02	<0.02	-	-	0.05 ug/g	-
Endrin	0.02 ug/g	<0.02	<0.02	-	-	0.04 ug/g	-
Endosulfan I	0.01 ug/g	<0.01	<0.01	-	-	-	-
Endosulfan II	0.02 ug/g	<0.02	<0.02	-	-	-	-
Endosulfan I/II	0.02 ug/g	<0.02	<0.02	-	-	0.04 ug/g	-
Heptachlor	0.01 ug/g	<0.01	<0.01	-	-	0.15 ug/g	-
Heptachlor epoxide	0.01 ug/g	<0.01	<0.01	-	-	0.05 ug/g	-
Hexachlorobenzene	0.01 ug/g	<0.01	<0.01	-	-	0.52 ug/g	-
Hexachlorobutadiene	0.01 ug/g	<0.01	<0.01	-	-	0.014 ug/g	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 12-Aug-2021

Client PO: 21262

Project Description: 21262

	Client ID:	BH123 SS1	BH118 SS1	-	-	Criteria:	
	Sample Date:	11-Aug-21 00:00	11-Aug-21 00:00	-	-	Reg 153/04 -T2	-
	Sample ID:	2133510-04	2133510-05	-	-	Res/Park, fine	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Pesticides, OC							
Hexachloroethane	0.01 ug/g	<0.01	<0.01	-	-	0.071 ug/g	-
Hexachloroethane	0.01 ug/g	<0.01	<0.01	-	-	0.71 ug/g	-
Methoxychlor	0.01 ug/g	<0.01	<0.01	-	-	0.13 ug/g	-
Decachlorobiphenyl	Surrogate	95.9%	93.5%	-	-	-	-

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					
Pesticides, OC								
Aldrin	ND	0.01	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
gamma-BHC (Lindane)	ND	0.01	ug/g					
alpha-Chlordane	ND	0.01	ug/g					
gamma-Chlordane	ND	0.01	ug/g					
Chlordane	ND	0.01	ug/g					
o,p'-DDD	ND	0.01	ug/g					
p,p'-DDD	ND	0.02	ug/g					
DDD	ND	0.02	ug/g					
o,p'-DDE	ND	0.01	ug/g					
p,p'-DDE	ND	0.01	ug/g					
DDE	ND	0.01	ug/g					
o,p'-DDT	ND	0.01	ug/g					
p,p'-DDT	ND	0.01	ug/g					
DDT	ND	0.01	ug/g					
Dieldrin	ND	0.02	ug/g					
Endrin	ND	0.02	ug/g					
Endosulfan I	ND	0.01	ug/g					
Endosulfan II	ND	0.02	ug/g					
Endosulfan I/II	ND	0.02	ug/g					
Heptachlor	ND	0.01	ug/g					
Heptachlor epoxide	ND	0.01	ug/g					
Hexachlorobenzene	ND	0.01	ug/g					
Hexachlorobutadiene	ND	0.01	ug/g					
Hexachloroethane	ND	0.01	ug/g					
Methoxychlor	ND	0.01	ug/g					
Surrogate: Decachlorobiphenyl	*0.0868*		*%*	*86.8*	*50-140*			
Semi-Volatiles								
Acenaphthene	ND	0.02	ug/g					
Acenaphthylene	ND	0.02	ug/g					
Anthracene	ND	0.02	ug/g					
Benzo [a] anthracene	ND	0.02	ug/g					
Benzo [a] pyrene	ND	0.02	ug/g					
Benzo [b] fluoranthene	ND	0.02	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [g,h,i] perylene	ND	0.02	ug/g					
Benzo [k] fluoranthene	ND	0.02	ug/g					
Chrysene	ND	0.02	ug/g					
Dibenzo [a,h] anthracene	ND	0.02	ug/g					
Fluoranthene	ND	0.02	ug/g					
Fluorene	ND	0.02	ug/g					
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g					
1-Methylnaphthalene	ND	0.02	ug/g					
2-Methylnaphthalene	ND	0.02	ug/g					
Methylnaphthalene (1&2)	ND	0.03	ug/g					
Naphthalene	ND	0.01	ug/g					
Phenanthrene	ND	0.02	ug/g					
Pyrene	ND	0.02	ug/g					
Surrogate: 2-Fluorobiphenyl	*0.111*		*%*	*53.4*	*50-140*			
Surrogate: Terphenyl-d14	*0.147*		*%*	*73.5*	*50-140*			
Volatiles								
Acetone	ND	0.50	ug/g					
Benzene	ND	0.02	ug/g					
Bromodichloromethane	ND	0.05	ug/g					
Bromoform	ND	0.05	ug/g					
Bromomethane	ND	0.05	ug/g					
Carbon Tetrachloride	ND	0.05	ug/g					
Chlorobenzene	ND	0.05	ug/g					
Chloroform	ND	0.05	ug/g					
Dibromochloromethane	ND	0.05	ug/g					
Dichlorodifluoromethane	ND	0.05	ug/g					
1,2-Dichlorobenzene	ND	0.05	ug/g					
1,3-Dichlorobenzene	ND	0.05	ug/g					
1,4-Dichlorobenzene	ND	0.05	ug/g					
1,1-Dichloroethane	ND	0.05	ug/g					
1,2-Dichloroethane	ND	0.05	ug/g					
1,1-Dichloroethylene	ND	0.05	ug/g					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
cis-1,2-Dichloroethylene	ND	0.05	ug/g					
trans-1,2-Dichloroethylene	ND	0.05	ug/g					
1,2-Dichloropropane	ND	0.05	ug/g					
cis-1,3-Dichloropropylene	ND	0.05	ug/g					
trans-1,3-Dichloropropylene	ND	0.05	ug/g					
1,3-Dichloropropene, total	ND	0.05	ug/g					
Ethylbenzene	ND	0.05	ug/g					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g					
Hexane	ND	0.05	ug/g					
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g					
Methyl Isobutyl Ketone	ND	0.50	ug/g					
Methyl tert-butyl ether	ND	0.05	ug/g					
Methylene Chloride	ND	0.05	ug/g					
Styrene	ND	0.05	ug/g					
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g					
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g					
Tetrachloroethylene	ND	0.05	ug/g					
Toluene	ND	0.05	ug/g					
1,1,1-Trichloroethane	ND	0.05	ug/g					
1,1,2-Trichloroethane	ND	0.05	ug/g					
Trichloroethylene	ND	0.05	ug/g					
Trichlorofluoromethane	ND	0.05	ug/g					
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*8.70*		*%*	*108*	*50-140*			
Surrogate: Dibromofluoromethane	*6.50*		*%*	*80.6*	*50-140*			
Surrogate: Toluene-d8	*8.66*		*%*	*107*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
SAR	0.29	0.01	N/A	0.28			3.5	30	
Conductivity	214	5	uS/cm	215			0.5	5	
Cyanide, free	ND	0.03	ug/g	ND			NC	35	
pH	7.25	0.05	pH Units	7.27			0.3	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)	25	8	ug/g	24			1.9	30	
F4 PHCs (C34-C50)	45	6	ug/g	56			21.7	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.8	1.0	ug/g	2.5			11.9	30	
Barium	61.5	1.0	ug/g	61.4			0.1	30	
Beryllium	0.5	0.5	ug/g	ND			NC	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	ND	5.0	ug/g	11.3			NC	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	14.7	5.0	ug/g	14.4			2.1	30	
Cobalt	5.7	1.0	ug/g	5.6			1.9	30	
Copper	12.9	5.0	ug/g	12.6			2.7	30	
Lead	9.6	1.0	ug/g	9.3			3.3	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	11.9	5.0	ug/g	11.8			1.5	30	
Selenium	1.1	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	21.2	10.0	ug/g	21.3			0.7	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Zinc	45.9	20.0	ug/g	45.0			2.1	30	
Pesticides, OC									
Aldrin	ND	0.01	ug/g	ND			NC	40	
gamma-BHC (Lindane)	ND	0.01	ug/g	ND			NC	40	
alpha-Chlordane	ND	0.01	ug/g	ND			NC	40	
gamma-Chlordane	ND	0.01	ug/g	ND			NC	40	
o,p'-DDD	ND	0.01	ug/g	ND			NC	40	
p,p'-DDD	ND	0.02	ug/g	ND			NC	40	
o,p'-DDE	ND	0.01	ug/g	ND			NC	40	
p,p'-DDE	ND	0.01	ug/g	ND			NC	40	
o,p'-DDT	ND	0.01	ug/g	ND			NC	40	
p,p'-DDT	ND	0.01	ug/g	ND			NC	40	
Dieldrin	ND	0.02	ug/g	ND			NC	40	
Endrin	ND	0.02	ug/g	ND			NC	40	
Endosulfan I	ND	0.01	ug/g	ND			NC	40	
Endosulfan II	ND	0.02	ug/g	ND			NC	40	
Heptachlor	ND	0.01	ug/g	ND			NC	40	
Heptachlor epoxide	ND	0.01	ug/g	ND			NC	40	
Hexachlorobenzene	ND	0.01	ug/g	ND			NC	40	
Hexachlorobutadiene	ND	0.01	ug/g	ND			NC	40	
Hexachloroethane	ND	0.01	ug/g	ND			NC	40	
Methoxychlor	ND	0.01	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.123*		*%*		*97.9*	*50-140*			
Physical Characteristics									
% Solids	84.2	0.1	% by Wt.	85.2			1.3	25	
Semi-Volatiles									
Acenaphthene	0.053	0.02	ug/g	0.027			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	0.086	0.02	ug/g	0.046			NC	40	
Benzo [a] anthracene	0.162	0.02	ug/g	0.095			NC	40	
Benzo [a] pyrene	0.146	0.02	ug/g	0.091			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [b] fluoranthene	0.176	0.02	ug/g	0.103			NC	40	
Benzo [g,h,i] perylene	0.078	0.02	ug/g	0.050			NC	40	
Benzo [k] fluoranthene	0.077	0.02	ug/g	0.042			NC	40	
Chrysene	0.160	0.02	ug/g	0.096			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	0.480	0.02	ug/g	0.273			NC	40	
Fluorene	0.056	0.02	ug/g	0.025			NC	40	
Indeno [1,2,3-cd] pyrene	0.097	0.02	ug/g	0.068			35.5	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	0.390	0.02	ug/g	0.202			NC	40	
Pyrene	0.301	0.02	ug/g	0.173			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.142*		*%*		*59.6*	*50-140*			
Surrogate: Terphenyl-d14	*0.150*		*%*		*65.4*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	ND	0.05	ug/g	ND			NC	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*6.68*		*%*		*106*	*50-140*			
Surrogate: Dibromofluoromethane	*5.05*		*%*		*79.8*	*50-140*			
Surrogate: Toluene-d8	*6.80*		*%*		*107*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Cyanide, free	0.244	0.03	ug/g	ND	68.2	70-130			QM-07
Hydrocarbons									
F1 PHCs (C6-C10)	63	7	ug/g	ND	88.5	80-120			
F2 PHCs (C10-C16)	80	4	ug/g	ND	83.2	60-140			
F3 PHCs (C16-C34)	213	8	ug/g	24	88.1	60-140			
F4 PHCs (C34-C50)	179	6	ug/g	56	79.4	60-140			
Metals									
Antimony	139	1.0	ug/g	ND	111	70-130			
Arsenic	139	1.0	ug/g	2.5	109	70-130			
Barium	204	1.0	ug/g	61.4	114	70-130			
Beryllium	125	0.5	ug/g	ND	99.9	70-130			
Boron, available	4.07	0.5	ug/g	ND	81.3	70-122			
Boron	136	5.0	ug/g	11.3	99.9	70-130			
Cadmium	127	0.5	ug/g	ND	101	70-130			
Chromium (VI)	4.4	0.2	ug/g	ND	87.5	70-130			
Chromium	144	5.0	ug/g	14.4	104	70-130			
Cobalt	132	1.0	ug/g	5.6	101	70-130			
Copper	144	5.0	ug/g	12.6	105	70-130			
Lead	132	1.0	ug/g	9.3	98.5	70-130			
Mercury	1.41	0.1	ug/g	ND	94.2	70-130			
Molybdenum	129	1.0	ug/g	ND	104	70-130			
Nickel	142	5.0	ug/g	11.8	104	70-130			
Selenium	129	1.0	ug/g	ND	103	70-130			
Silver	114	0.3	ug/g	ND	91.3	70-130			
Thallium	124	1.0	ug/g	ND	99.0	70-130			
Uranium	124	1.0	ug/g	ND	99.3	70-130			
Vanadium	152	10.0	ug/g	21.3	104	70-130			
Zinc	186	20.0	ug/g	45.0	113	70-130			
Pesticides, OC									
Aldrin	0.21	0.01	ug/g	ND	85.5	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
gamma-BHC (Lindane)	0.19	0.01	ug/g	ND	77.1	50-140			
alpha-Chlordane	0.19	0.01	ug/g	ND	76.5	50-140			
gamma-Chlordane	0.19	0.01	ug/g	ND	76.4	50-140			
o,p'-DDD	0.19	0.01	ug/g	ND	74.8	50-140			
p,p'-DDD	0.20	0.02	ug/g	ND	78.6	50-140			
o,p'-DDE	0.21	0.01	ug/g	ND	84.7	50-140			
p,p'-DDE	0.19	0.01	ug/g	ND	74.9	50-140			
o,p'-DDT	0.20	0.01	ug/g	ND	79.6	50-140			
p,p'-DDT	0.18	0.01	ug/g	ND	71.3	50-140			
Dieldrin	0.21	0.02	ug/g	ND	85.1	50-140			
Endrin	0.14	0.02	ug/g	ND	57.3	50-140			
Endosulfan I	0.21	0.01	ug/g	ND	83.0	50-140			
Endosulfan II	0.19	0.02	ug/g	ND	75.0	50-140			
Heptachlor	0.20	0.01	ug/g	ND	80.7	50-140			
Heptachlor epoxide	0.21	0.01	ug/g	ND	83.9	50-140			
Hexachlorobenzene	0.22	0.01	ug/g	ND	87.9	50-140			
Hexachlorobutadiene	0.30	0.01	ug/g	ND	119	50-140			
Hexachloroethane	0.21	0.01	ug/g	ND	85.0	50-140			
Methoxychlor	0.14	0.01	ug/g	ND	54.6	50-140			
Surrogate: Decachlorobiphenyl	*0.120*		*%*		*95.8*	*50-140*			
Semi-Volatiles									
Acenaphthene	0.112	0.02	ug/g	0.027	74.6	50-140			
Acenaphthylene	0.067	0.02	ug/g	ND	58.6	50-140			
Anthracene	0.128	0.02	ug/g	0.046	71.5	50-140			
Benzo [a] anthracene	0.208	0.02	ug/g	0.095	98.8	50-140			
Benzo [a] pyrene	0.207	0.02	ug/g	0.091	102	50-140			
Benzo [b] fluoranthene	0.215	0.02	ug/g	0.103	98.0	50-140			
Benzo [g,h,i] perylene	0.136	0.02	ug/g	0.050	74.5	50-140			
Benzo [k] fluoranthene	0.129	0.02	ug/g	0.042	75.7	50-140			
Chrysene	0.205	0.02	ug/g	0.096	96.0	50-140			
Dibenzo [a,h] anthracene	0.084	0.02	ug/g	ND	73.1	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Fluoranthene	0.475	0.02	ug/g	0.273	177	50-140			QM-07
Fluorene	0.130	0.02	ug/g	0.025	91.4	50-140			
Indeno [1,2,3-cd] pyrene	0.152	0.02	ug/g	0.068	74.0	50-140			
1-Methylnaphthalene	0.098	0.02	ug/g	ND	86.0	50-140			
2-Methylnaphthalene	0.090	0.02	ug/g	ND	78.8	50-140			
Naphthalene	0.087	0.01	ug/g	ND	75.8	50-140			
Phenanthrene	0.371	0.02	ug/g	0.202	148	50-140			QM-07
Pyrene	0.305	0.02	ug/g	0.173	115	50-140			
Surrogate: 2-Fluorobiphenyl	*0.153*		*%*		*64.5*	*50-140*			
Surrogate: Terphenyl-d14	*0.147*		*%*		*64.1*	*50-140*			
Volatiles									
Acetone	10.8	0.50	ug/g	ND	111	50-140			
Benzene	4.16	0.02	ug/g	ND	103	60-130			
Bromodichloromethane	3.92	0.05	ug/g	ND	97.4	60-130			
Bromoform	4.06	0.05	ug/g	ND	101	60-130			
Bromomethane	3.89	0.05	ug/g	ND	97.2	50-140			
Carbon Tetrachloride	3.76	0.05	ug/g	ND	94.0	60-130			
Chlorobenzene	4.19	0.05	ug/g	ND	104	60-130			
Chloroform	3.82	0.05	ug/g	ND	94.9	60-130			
Dibromochloromethane	3.88	0.05	ug/g	ND	97.0	60-130			
Dichlorodifluoromethane	2.70	0.05	ug/g	ND	67.4	50-140			
1,2-Dichlorobenzene	3.79	0.05	ug/g	ND	94.8	60-130			
1,3-Dichlorobenzene	3.80	0.05	ug/g	ND	95.0	60-130			
1,4-Dichlorobenzene	3.78	0.05	ug/g	ND	93.9	60-130			
1,1-Dichloroethane	4.83	0.05	ug/g	ND	121	60-130			
1,2-Dichloroethane	4.26	0.05	ug/g	ND	106	60-130			
1,1-Dichloroethylene	4.13	0.05	ug/g	ND	103	60-130			
cis-1,2-Dichloroethylene	4.69	0.05	ug/g	ND	117	60-130			
trans-1,2-Dichloroethylene	4.27	0.05	ug/g	ND	106	60-130			
1,2-Dichloropropane	4.13	0.05	ug/g	ND	103	60-130			
cis-1,3-Dichloropropylene	3.74	0.05	ug/g	ND	93.5	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
trans-1,3-Dichloropropylene	3.73	0.05	ug/g	ND	92.9	60-130			
Ethylbenzene	4.25	0.05	ug/g	ND	106	60-130			
Ethylene dibromide (dibromoethane, 1,2-)	3.87	0.05	ug/g	ND	96.3	60-130			
Hexane	2.88	0.05	ug/g	ND	72.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	9.82	0.50	ug/g	ND	95.9	50-140			
Methyl Isobutyl Ketone	10.1	0.50	ug/g	ND	104	50-140			
Methyl tert-butyl ether	11.5	0.05	ug/g	ND	115	50-140			
Methylene Chloride	4.77	0.05	ug/g	ND	119	60-130			
Styrene	4.23	0.05	ug/g	ND	105	60-130			
1,1,1,2-Tetrachloroethane	3.95	0.05	ug/g	ND	98.8	60-130			
1,1,2,2-Tetrachloroethane	3.94	0.05	ug/g	ND	97.9	60-130			
Tetrachloroethylene	3.98	0.05	ug/g	ND	99.0	60-130			
Toluene	4.27	0.05	ug/g	ND	107	60-130			
1,1,1-Trichloroethane	3.91	0.05	ug/g	ND	97.8	60-130			
1,1,2-Trichloroethane	4.08	0.05	ug/g	ND	101	60-130			
Trichloroethylene	3.96	0.05	ug/g	ND	98.6	60-130			
Trichlorofluoromethane	3.88	0.05	ug/g	ND	96.9	50-140			
Vinyl chloride	3.47	0.02	ug/g	ND	86.7	50-140			
m,p-Xylenes	8.57	0.05	ug/g	ND	107	60-130			
o-Xylene	4.32	0.05	ug/g	ND	107	60-130			
Surrogate: 4-Bromofluorobenzene	*7.67*		*%*		*95.5*	*50-140*			
Surrogate: Dibromofluoromethane	*7.73*		*%*		*95.9*	*50-140*			
Surrogate: Toluene-d8	*7.57*		*%*		*93.9*	*50-140*			

Qualifier Notes:

QC Qualifiers:

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions:

None

Work Order Revisions / Comments:

REVISION 1 - This report includes an updated sample list 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.

Paracel ID: 2133510

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Paracel Order Number (Lab Use Only)	Chain Of Custody (Lab Use Only)
	№ 59602

Page 1 of 1

Client Name: Landtek	Project Ref: 21262
Contact Name: Nicole Harper	Quote #:
Address: 205 nebo rd	PO #: 21262
	E-mail: nicole@landtek.ca
Telephone:	

Turnaround Time

- ☐ 1 day
- ☐ 3 day
- ☐ 2 day
- ☒ Regular

Date Required:

Regulation 153/04

- ☐ Table 1 ☒ Res/Park ☒ Med/Fine
- ☒ Table 2 ☐ Ind/Comm ☐ Coarse
- ☐ Table 3 ☐ Agri/Other
- ☐ Table
- For RSC: ☐ Yes ☒ No

Other Regulation

- ☐ REG 558 ☐ PWQO
- ☐ CCME ☐ MISA
- ☐ SU - Sani ☐ SU - Storm
- Mun:
- ☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHC/VOC	M+I	PAHs	OC Pesticides							
1	BH103 SS1	S		3	Aug 11 2021		X	X	X								
2	BH103 SS5			3	↓		X	X	X								
3	BH103 SS7			3	↓		X	X	X	X							
4	BH123 SS1			4	↓		X	X	X	X							
5	BH118 SS1			3	↓		X	X		X							
6																	
7																	
8																	
9																	
10																	

Comments:

Method of Delivery: Walk in

Relinquished By (Sign): [signature]	Received By Driver/Depot:	Received at Lab: AM	Verified By: AM
Relinquished By (Print): Nicole Harper	Date/Time:	Date/Time: 12/8/21 11:30	Date/Time: 12/8/21 12:45
Date/Time: Aug 12/21 1130	Temperature: °C	Temperature: 12.6 °C	pH Verified: ☐ By:

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Certificate of Analysis

Landtek Limited

205 Nebo Road, Unit 3
Hamilton, ON L8W2E1
Attn: Nicole Harper

Client PO: 21262
Project: 21262
Custody: 132508

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021

Order #: 2133632

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

Paracel ID	Client ID	Paracel ID	Client ID
2133632-01	BH115 SS1		
2133632-02	BH115 SS2		
2133632-03	BH120 SS1		
2133632-04	BH120 SS3		
2133632-05	BH121 SS1		
2133632-06	BH121 SS3		

Approved By:

Milan Ralitsch, PhD
Senior Technical Manager

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021
Project Description: 21262

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	18-Aug-21	18-Aug-21
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	16-Aug-21	18-Aug-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Aug-21	18-Aug-21
PHC F1	CWS Tier 1 - P&T GC-FID	13-Aug-21	16-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	17-Aug-21	19-Aug-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	17-Aug-21	17-Aug-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	18-Aug-21	19-Aug-21
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	13-Aug-21	17-Aug-21
REG 153: PHC F4(g)	CWS Tier 1 - Extraction Gravimetric	19-Aug-21	19-Aug-21
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	13-Aug-21	16-Aug-21
Solids, %	Gravimetric, calculation	17-Aug-21	18-Aug-21

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021
Project Description: 21262

Summary of 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. Regulatory limts displayed in brackets, (), applies to medium and fine textured soils.

Criteria:

Client ID	Analyte	MDL / Units	Result	Reg 153/04 (2011)-Table 1 Residential/Industrial
BH115 SS1	F3 PHCs (C16-C34)	8 ug/g	679	240 ug/g
BH115 SS1	F4 PHCs (C34-C50)	6 ug/g	2640	120 ug/g
BH115 SS1	F4G-sg PHCs (gravimetric)	50 ug/g	6020	120 ug/g
BH120 SS1	Trichloroethylene	0.05 ug/g	0.06	0.05 ug/g
BH121 SS3	Trichloroethylene	0.05 ug/g	0.06	0.05 ug/g

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 19-Aug-2021

Order Date: 13-Aug-2021

Project Description: 21262

	Client ID:	BH115 SS1	BH115 SS2	BH120 SS1	BH120 SS3	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133632-01	2133632-02	2133632-03	2133632-04	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	81.7	83.3	81.6	88.4		
Metals							
Antimony	1.0 ug/g	<1.0	-	<1.0	<1.0	1.3	ug/g
Arsenic	1.0 ug/g	5.5	-	3.3	3.5	18	ug/g
Barium	1.0 ug/g	102	-	85.9	77.2	220	ug/g
Beryllium	0.5 ug/g	0.6	-	0.6	<0.5	2.5	ug/g
Boron	5.0 ug/g	11.0	-	7.0	12.2	36	ug/g
Boron, available	0.5 ug/g	<0.5	-	0.7	<0.5		
Cadmium	0.5 ug/g	<0.5	-	<0.5	<0.5	1.2	ug/g
Chromium	5.0 ug/g	18.7	-	18.9	13.6	70	ug/g
Chromium (VI)	0.2 ug/g	<0.2	-	<0.2	<0.2	0.66	ug/g
Cobalt	1.0 ug/g	10.1	-	6.7	9.4	21	ug/g
Copper	5.0 ug/g	27.3	-	15.4	15.0	92	ug/g
Lead	1.0 ug/g	10.4	-	12.9	8.4	120	ug/g
Mercury	0.1 ug/g	<0.1	-	<0.1	<0.1	0.27	ug/g
Molybdenum	1.0 ug/g	<1.0	-	<1.0	<1.0	2	ug/g
Nickel	5.0 ug/g	22.3	-	15.8	18.7	82	ug/g
Selenium	1.0 ug/g	<1.0	-	<1.0	<1.0	1.5	ug/g
Silver	0.3 ug/g	<0.3	-	<0.3	<0.3	0.5	ug/g
Thallium	1.0 ug/g	<1.0	-	<1.0	<1.0	1	ug/g
Uranium	1.0 ug/g	<1.0	-	<1.0	<1.0	2.5	ug/g
Vanadium	10.0 ug/g	28.5	-	26.8	18.7	86	ug/g
Zinc	20.0 ug/g	49.1	-	61.3	40.6	290	ug/g

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 19-Aug-2021

Order Date: 13-Aug-2021

Project Description: 21262

	Client ID:	BH115 SS1	BH115 SS2	BH120 SS1	BH120 SS3	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133632-01	2133632-02	2133632-03	2133632-04	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	0.5	ug/g
Benzene	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.02	ug/g
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Bromoform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Bromomethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Chlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Chloroform	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05		
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05		
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021
Project Description: 21262

	Client ID:	BH115 SS1	BH115 SS2	BH120 SS1	BH120 SS3	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Sample ID:	2133632-01	2133632-02	2133632-03	2133632-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Ethylene dibromide (dibromoethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Hexane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	0.5	ug/g
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	<0.50	<0.50	0.5	ug/g
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Methylene Chloride	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Styrene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Toluene	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.2	ug/g
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.05	ug/g
Trichloroethylene	0.05 ug/g	<0.05	<0.05	0.06	<0.05	0.05	ug/g
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	<0.05	<0.05	0.25	ug/g
Vinyl chloride	0.02 ug/g	<0.02	<0.02	<0.02	<0.02	0.02	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	0.05	ug/g
4-Bromofluorobenzene	Surrogate	87.4%	88.8%	88.5%	86.6%		
Dibromofluoromethane	Surrogate	81.5%	85.8%	80.9%	80.5%		
Toluene-d8	Surrogate	98.1%	97.9%	99.0%	98.4%		
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	<7	<7	25	ug/g

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021
Project Description: 21262

	Client ID:	BH115 SS1	BH115 SS2	BH120 SS1	BH120 SS3	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Sample ID:	2133632-01	2133632-02	2133632-03	2133632-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
F2 PHCs (C10-C16)	4 ug/g	<4	<4	<4	<4	10	ug/g
F3 PHCs (C16-C34)	8 ug/g	679	11	31	<8	240	ug/g
F4 PHCs (C34-C50)	6 ug/g	2640	78	64	33	120	ug/g
F4G-sg PHCs (gravimetric)	50 ug/g	6020	-	-	-	120	ug/g
Semi-Volatiles							
Acenaphthene	0.02 ug/g	-	<0.02	-	-	0.072	ug/g
Acenaphthylene	0.02 ug/g	-	<0.02	-	-	0.093	ug/g
Anthracene	0.02 ug/g	-	<0.02	-	-	0.16	ug/g
Benzo [a] anthracene	0.02 ug/g	-	<0.02	-	-	0.36	ug/g
Benzo [a] pyrene	0.02 ug/g	-	<0.02	-	-	0.3	ug/g
Benzo [b] fluoranthene	0.02 ug/g	-	<0.02	-	-	0.47	ug/g
Benzo [g,h,i] perylene	0.02 ug/g	-	<0.02	-	-	0.68	ug/g
Benzo [k] fluoranthene	0.02 ug/g	-	<0.02	-	-	0.48	ug/g
Chrysene	0.02 ug/g	-	<0.02	-	-	2.8	ug/g
Dibenzo [a,h] anthracene	0.02 ug/g	-	<0.02	-	-	0.1	ug/g
Fluoranthene	0.02 ug/g	-	<0.02	-	-	0.56	ug/g
Fluorene	0.02 ug/g	-	<0.02	-	-	0.12	ug/g
Indeno [1,2,3-cd] pyrene	0.02 ug/g	-	<0.02	-	-	0.23	ug/g
1-Methylnaphthalene	0.02 ug/g	-	<0.02	-	-	0.59	ug/g
2-Methylnaphthalene	0.02 ug/g	-	<0.02	-	-	0.59	ug/g
Methylnaphthalene (1&2)	0.03 ug/g	-	<0.03	-	-	0.59	ug/g
Naphthalene	0.01 ug/g	-	<0.01	-	-	0.09	ug/g
Phenanthrene	0.02 ug/g	-	<0.02	-	-	0.69	ug/g
Pyrene	0.02 ug/g	-	<0.02	-	-	1	ug/g

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021
Project Description: 21262

	Client ID:	BH115 SS1	BH115 SS2	BH120 SS1	BH120 SS3	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133632-01	2133632-02	2133632-03	2133632-04	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
2-Fluorobiphenyl	Surrogate	-	54.5%	-	-		
Terphenyl-d14	Surrogate	-	49.2% [2]	-	-		
Pesticides, OC							
Aldrin	0.01 ug/g	-	<0.01	<0.01	<0.01	0.05	ug/g
gamma-BHC (Lindane)	0.01 ug/g	-	<0.01	<0.01	<0.01	0.01	ug/g
alpha-Chlordane	0.01 ug/g	-	<0.01	<0.01	<0.01		
gamma-Chlordane	0.01 ug/g	-	<0.01	<0.01	<0.01		
Chlordane	0.01 ug/g	-	<0.01	<0.01	<0.01	0.05	ug/g
o,p'-DDD	0.01 ug/g	-	<0.01	<0.01	<0.01		
p,p'-DDD	0.02 ug/g	-	<0.02	<0.02	<0.02		
DDD	0.02 ug/g	-	<0.02	<0.02	<0.02	0.05	ug/g
o,p'-DDE	0.01 ug/g	-	<0.01	<0.01	<0.01		
p,p'-DDE	0.01 ug/g	-	<0.01	<0.01	<0.01		
DDE	0.01 ug/g	-	<0.01	<0.01	<0.01	0.05	ug/g
o,p'-DDT	0.01 ug/g	-	<0.01	<0.01	<0.01		
p,p'-DDT	0.01 ug/g	-	<0.01	<0.01	<0.01		
DDT	0.01 ug/g	-	<0.01	<0.01	<0.01	1.4	ug/g
Dieldrin	0.02 ug/g	-	<0.02	<0.02	<0.02	0.05	ug/g
Endrin	0.02 ug/g	-	<0.02	<0.02	<0.02	0.04	ug/g
Endosulfan I	0.01 ug/g	-	<0.01	<0.01	<0.01		
Endosulfan II	0.02 ug/g	-	<0.02	<0.02	<0.02		
Endosulfan I/II	0.02 ug/g	-	<0.02	<0.02	<0.02	0.04	ug/g
Heptachlor	0.01 ug/g	-	<0.01	<0.01	<0.01	0.05	ug/g
Heptachlor epoxide	0.01 ug/g	-	<0.01	<0.01	<0.01	0.04	ug/g

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Client: Landtek Limited

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Project Description: 21262

	Client ID:	BH115 SS1	BH115 SS2	BH120 SS1	BH120 SS3	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133632-01	2133632-02	2133632-03	2133632-04	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hexachlorobenzene	0.01 ug/g	-	<0.01	<0.01	<0.01	0.01	ug/g
Hexachlorobutadiene	0.01 ug/g	-	<0.01	<0.01	<0.01	0.01	ug/g
Hexachloroethane	0.01 ug/g	-	<0.01	<0.01	<0.01	0.01	ug/g
Methoxychlor	0.01 ug/g	-	<0.01	<0.01	<0.01	0.05	ug/g
Decachlorobiphenyl	Surrogate	-	96.0%	92.7%	93.3%		

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Project Description: 21262

	Client ID:	BH121 SS1	BH121 SS3	-	-	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	-	-		
	Sample ID:	2133632-05	2133632-06	-	-	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	78.4	86.9	-	-		
Metals							
Antimony	1.0 ug/g	<1.0	<1.0	-	-	1.3	ug/g
Arsenic	1.0 ug/g	3.8	5.5	-	-	18	ug/g
Barium	1.0 ug/g	49.3	72.6	-	-	220	ug/g
Beryllium	0.5 ug/g	<0.5	0.6	-	-	2.5	ug/g
Boron	5.0 ug/g	7.3	12.3	-	-	36	ug/g
Boron, available	0.5 ug/g	0.6	<0.5	-	-		
Cadmium	0.5 ug/g	<0.5	<0.5	-	-	1.2	ug/g
Chromium	5.0 ug/g	14.1	15.5	-	-	70	ug/g
Chromium (VI)	0.2 ug/g	<0.2	<0.2	-	-	0.66	ug/g
Cobalt	1.0 ug/g	6.8	9.1	-	-	21	ug/g
Copper	5.0 ug/g	21.2	23.5	-	-	92	ug/g
Lead	1.0 ug/g	12.3	9.4	-	-	120	ug/g
Mercury	0.1 ug/g	<0.1	<0.1	-	-	0.27	ug/g
Molybdenum	1.0 ug/g	<1.0	<1.0	-	-	2	ug/g
Nickel	5.0 ug/g	14.3	18.7	-	-	82	ug/g
Selenium	1.0 ug/g	<1.0	<1.0	-	-	1.5	ug/g
Silver	0.3 ug/g	<0.3	<0.3	-	-	0.5	ug/g
Thallium	1.0 ug/g	<1.0	<1.0	-	-	1	ug/g
Uranium	1.0 ug/g	<1.0	<1.0	-	-	2.5	ug/g
Vanadium	10.0 ug/g	20.4	23.0	-	-	86	ug/g
Zinc	20.0 ug/g	51.0	43.0	-	-	290	ug/g

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	Client ID:	BH121 SS1	BH121 SS3	-	-		
	Sample Date:	12-Aug-2021	12-Aug-2021	-	-	**Criteria:**	
	Sample ID:	2133632-05	2133632-06	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
Volatiles							
Acetone	0.50 ug/g	<0.50	<0.50	-	-	0.5	ug/g
Benzene	0.02 ug/g	<0.02	<0.02	-	-	0.02	ug/g
Bromodichloromethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Bromoform	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Bromomethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Carbon Tetrachloride	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Chlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Chloroform	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Dibromochloromethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Dichlorodifluoromethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,2-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,3-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,4-Dichlorobenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,2-Dichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,2-Dichloropropane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-		
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	<0.05	-	-		
1,3-Dichloropropene, total	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Ethylbenzene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g

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		Client ID:	BH121 SS1	BH121 SS3	-	-		
		Sample Date:	12-Aug-2021	12-Aug-2021	-	-	**Criteria:**	
		Sample ID:	2133632-05	2133632-06	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**	
		Matrix:	Soil	Soil	-	-		
	MDL/Units							
Ethylene dibromide (dibromoethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Hexane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	<0.50	-	-	0.5	ug/g
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	<0.50	-	-	0.5	ug/g
Methyl tert-butyl ether	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Methylene Chloride	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Styrene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Tetrachloroethylene	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Toluene	0.05 ug/g	<0.05	<0.05	-	-	0.2	ug/g
1,1,1-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
1,1,2-Trichloroethane	0.05 ug/g	<0.05	<0.05	-	-	0.05	ug/g
Trichloroethylene	0.05 ug/g	<0.05	0.06	-	-	0.05	ug/g
Trichlorofluoromethane	0.05 ug/g	<0.05	<0.05	-	-	0.25	ug/g
Vinyl chloride	0.02 ug/g	<0.02	<0.02	-	-	0.02	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	-	-	0.05	ug/g
4-Bromofluorobenzene	Surrogate	89.0%	87.4%	-	-		
Dibromofluoromethane	Surrogate	81.6%	80.7%	-	-		
Toluene-d8	Surrogate	99.1%	98.4%	-	-		
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	<7	-	-	25	ug/g

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	Client ID:	BH121 SS1	BH121 SS3	-	-	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	-	-		
	Sample ID:	2133632-05	2133632-06	-	-	Reg 153/04 (2011)-Table 1 Residential/Industrial	
	Matrix:	Soil	Soil	-	-		
	MDL/Units						
F2 PHCs (C10-C16)	4 ug/g	<4	<4	-	-	10	ug/g
F3 PHCs (C16-C34)	8 ug/g	27	<8	-	-	240	ug/g
F4 PHCs (C34-C50)	6 ug/g	44	23	-	-	120	ug/g
Pesticides, OC							
Aldrin	0.01 ug/g	-	<0.01	-	-	0.05	ug/g
gamma-BHC (Lindane)	0.01 ug/g	-	<0.01	-	-	0.01	ug/g
alpha-Chlordane	0.01 ug/g	-	<0.01	-	-		
gamma-Chlordane	0.01 ug/g	-	<0.01	-	-		
Chlordane	0.01 ug/g	-	<0.01	-	-	0.05	ug/g
o,p'-DDD	0.01 ug/g	-	<0.01	-	-		
p,p'-DDD	0.02 ug/g	-	<0.02	-	-		
DDD	0.02 ug/g	-	<0.02	-	-	0.05	ug/g
o,p'-DDE	0.01 ug/g	-	<0.01	-	-		
p,p'-DDE	0.01 ug/g	-	<0.01	-	-		
DDE	0.01 ug/g	-	<0.01	-	-	0.05	ug/g
o,p'-DDT	0.01 ug/g	-	<0.01	-	-		
p,p'-DDT	0.01 ug/g	-	<0.01	-	-		
DDT	0.01 ug/g	-	<0.01	-	-	1.4	ug/g
Dieldrin	0.02 ug/g	-	<0.02	-	-	0.05	ug/g
Endrin	0.02 ug/g	-	<0.02	-	-	0.04	ug/g
Endosulfan I	0.01 ug/g	-	<0.01	-	-		
Endosulfan II	0.02 ug/g	-	<0.02	-	-		
Endosulfan I/II	0.02 ug/g	-	<0.02	-	-	0.04	ug/g
Heptachlor	0.01 ug/g	-	<0.01	-	-	0.05	ug/g

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Project Description: 21262

		Client ID:	BH121 SS1	BH121 SS3	-	-		
		Sample Date:	12-Aug-2021	12-Aug-2021	-	-	**Criteria:**	
		Sample ID:	2133632-05	2133632-06	-	-	**Reg 153/04 (2011)-Table 1 Residential/Industrial**	
		Matrix:	Soil	Soil	-	-		
	MDL/Units							
Heptachlor epoxide	0.01 ug/g		-	<0.01	-	-	0.04	ug/g
Hexachlorobenzene	0.01 ug/g		-	<0.01	-	-	0.01	ug/g
Hexachlorobutadiene	0.01 ug/g		-	<0.01	-	-	0.01	ug/g
Hexachloroethane	0.01 ug/g		-	<0.01	-	-	0.01	ug/g
Methoxychlor	0.01 ug/g		-	<0.01	-	-	0.05	ug/g
Decachlorobiphenyl	Surrogate		-	92.7%	-	-		

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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						
F4G-sg PHCs (gravimetric)	ND	50	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						
Pesticides, OC									
Aldrin	ND	0.01	ug/g						
gamma-BHC (Lindane)	ND	0.01	ug/g						
alpha-Chlordane	ND	0.01	ug/g						
gamma-Chlordane	ND	0.01	ug/g						
Chlordane	ND	0.01	ug/g						
o,p'-DDD	ND	0.01	ug/g						
p,p'-DDD	ND	0.02	ug/g						
DDD	ND	0.02	ug/g						
o,p'-DDE	ND	0.01	ug/g						
p,p'-DDE	ND	0.01	ug/g						
DDE	ND	0.01	ug/g						
o,p'-DDT	ND	0.01	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
p,p'-DDT	ND	0.01	ug/g						
DDT	ND	0.01	ug/g						
Dieldrin	ND	0.02	ug/g						
Endrin	ND	0.02	ug/g						
Endosulfan I	ND	0.01	ug/g						
Endosulfan II	ND	0.02	ug/g						
Endosulfan I/II	ND	0.02	ug/g						
Heptachlor	ND	0.01	ug/g						
Heptachlor epoxide	ND	0.01	ug/g						
Hexachlorobenzene	ND	0.01	ug/g						
Hexachlorobutadiene	ND	0.01	ug/g						
Hexachloroethane	ND	0.01	ug/g						
Methoxychlor	ND	0.01	ug/g						
Surrogate: Decachlorobiphenyl	*0.0868*		*ug/g*		*86.8*	*50-140*			
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.03	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	*0.104*		*ug/g*		*50.2*	*50-140*			
Surrogate: Terphenyl-d14	*0.125*		*ug/g*		*62.7*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Carbon Tetrachloride	ND	0.05	ug/g						
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*7.55*		*ug/g*		*94.4*	*50-140*			
Surrogate: Dibromofluoromethane	*8.02*		*ug/g*		*100*	*50-140*			
Surrogate: Toluene-d8	*7.75*		*ug/g*		*96.9*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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)	9	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
F4G-sg PHCs (gravimetric)	4550	50	ug/g	6020			27.8	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.8	1.0	ug/g	2.5			11.9	30	
Barium	61.5	1.0	ug/g	61.4			0.1	30	
Beryllium	0.5	0.5	ug/g	ND			NC	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	ND	5.0	ug/g	11.3			NC	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	14.7	5.0	ug/g	14.4			2.1	30	
Cobalt	5.7	1.0	ug/g	5.6			1.9	30	
Copper	12.9	5.0	ug/g	12.6			2.7	30	
Lead	9.6	1.0	ug/g	9.3			3.3	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	11.9	5.0	ug/g	11.8			1.5	30	
Selenium	1.1	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	21.2	10.0	ug/g	21.3			0.7	30	
Zinc	45.9	20.0	ug/g	45.0			2.1	30	
Pesticides, OC									
Aldrin	ND	0.01	ug/g	ND			NC	40	
gamma-BHC (Lindane)	ND	0.01	ug/g	ND			NC	40	
alpha-Chlordane	ND	0.01	ug/g	ND			NC	40	
gamma-Chlordane	ND	0.01	ug/g	ND			NC	40	
o,p'-DDD	ND	0.01	ug/g	ND			NC	40	
p,p'-DDD	ND	0.02	ug/g	ND			NC	40	
o,p'-DDE	ND	0.01	ug/g	ND			NC	40	
p,p'-DDE	ND	0.01	ug/g	ND			NC	40	
o,p'-DDT	ND	0.01	ug/g	ND			NC	40	
p,p'-DDT	ND	0.01	ug/g	ND			NC	40	
Dieldrin	ND	0.02	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Endrin	ND	0.02	ug/g	ND			NC	40	
Endosulfan I	ND	0.01	ug/g	ND			NC	40	
Endosulfan II	ND	0.02	ug/g	ND			NC	40	
Heptachlor	ND	0.01	ug/g	ND			NC	40	
Heptachlor epoxide	ND	0.01	ug/g	ND			NC	40	
Hexachlorobenzene	ND	0.01	ug/g	ND			NC	40	
Hexachlorobutadiene	ND	0.01	ug/g	ND			NC	40	
Hexachloroethane	ND	0.01	ug/g	ND			NC	40	
Methoxychlor	ND	0.01	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.123*		ug/g		*97.9*	*50-140*			
Physical Characteristics									
% Solids	87.3	0.1	% by Wt.	86.3			1.1	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.141*		ug/g		*54.3*	*50-140*			
Surrogate: Terphenyl-d14	*0.140*		ug/g		*55.8*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	0.068	0.05	ug/g	0.068			0.0	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*12.8*		ug/g		*93.7*	*50-140*			
Surrogate: Dibromofluoromethane	*12.5*		ug/g		*91.7*	*50-140*			
Surrogate: Toluene-d8	*13.4*		ug/g		*98.4*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	60	7	ug/g	ND	85.5	80-120			
F2 PHCs (C10-C16)	90	4	ug/g	ND	93.2	60-140			
F3 PHCs (C16-C34)	212	8	ug/g	ND	97.4	60-140			
F4 PHCs (C34-C50)	162	6	ug/g	ND	104	60-140			
F4G-sg PHCs (gravimetric)	1180	50	ug/g	ND	118	80-120			
Metals									
Antimony	139	1.0	ug/g	ND	111	70-130			
Arsenic	139	1.0	ug/g	2.5	109	70-130			
Barium	204	1.0	ug/g	61.4	114	70-130			
Beryllium	125	0.5	ug/g	ND	99.9	70-130			
Boron, available	4.07	0.5	ug/g	ND	81.3	70-122			
Boron	136	5.0	ug/g	11.3	99.9	70-130			
Cadmium	127	0.5	ug/g	ND	101	70-130			
Chromium (VI)	4.4	0.2	ug/g	ND	87.5	70-130			
Chromium	144	5.0	ug/g	14.4	104	70-130			
Cobalt	132	1.0	ug/g	5.6	101	70-130			
Copper	144	5.0	ug/g	12.6	105	70-130			
Lead	132	1.0	ug/g	9.3	98.5	70-130			
Mercury	1.41	0.1	ug/g	ND	94.2	70-130			
Molybdenum	129	1.0	ug/g	ND	104	70-130			
Nickel	142	5.0	ug/g	11.8	104	70-130			
Selenium	129	1.0	ug/g	ND	103	70-130			
Silver	114	0.3	ug/g	ND	91.3	70-130			
Thallium	124	1.0	ug/g	ND	99.0	70-130			
Uranium	124	1.0	ug/g	ND	99.3	70-130			
Vanadium	152	10.0	ug/g	21.3	104	70-130			
Zinc	186	20.0	ug/g	45.0	113	70-130			
Pesticides, OC									
Aldrin	0.21	0.01	ug/g	ND	85.5	50-140			
gamma-BHC (Lindane)	0.19	0.01	ug/g	ND	77.1	50-140			
alpha-Chlordane	0.19	0.01	ug/g	ND	76.5	50-140			
gamma-Chlordane	0.19	0.01	ug/g	ND	76.4	50-140			
o,p'-DDD	0.19	0.01	ug/g	ND	74.8	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
p,p'-DDD	0.20	0.02	ug/g	ND	78.6	50-140			
o,p'-DDE	0.21	0.01	ug/g	ND	84.7	50-140			
p,p'-DDE	0.19	0.01	ug/g	ND	74.9	50-140			
o,p'-DDT	0.20	0.01	ug/g	ND	79.6	50-140			
p,p'-DDT	0.18	0.01	ug/g	ND	71.3	50-140			
Dieldrin	0.21	0.02	ug/g	ND	85.1	50-140			
Endrin	0.14	0.02	ug/g	ND	57.3	50-140			
Endosulfan I	0.21	0.01	ug/g	ND	83.0	50-140			
Endosulfan II	0.19	0.02	ug/g	ND	75.0	50-140			
Heptachlor	0.20	0.01	ug/g	ND	80.7	50-140			
Heptachlor epoxide	0.21	0.01	ug/g	ND	83.9	50-140			
Hexachlorobenzene	0.22	0.01	ug/g	ND	87.9	50-140			
Hexachlorobutadiene	0.30	0.01	ug/g	ND	119	50-140			
Hexachloroethane	0.21	0.01	ug/g	ND	85.0	50-140			
Methoxychlor	0.14	0.01	ug/g	ND	54.6	50-140			
Surrogate: Decachlorobiphenyl	*0.120*		*ug/g*		*95.8*	*50-140*			
Semi-Volatiles									
Acenaphthene	0.067	0.02	ug/g	ND	53.8	50-140			
Acenaphthylene	0.066	0.02	ug/g	ND	52.7	50-140			
Anthracene	0.070	0.02	ug/g	ND	55.9	50-140			
Benzo [a] anthracene	0.071	0.02	ug/g	ND	56.4	50-140			
Benzo [a] pyrene	0.079	0.02	ug/g	ND	63.4	50-140			
Benzo [b] fluoranthene	0.075	0.02	ug/g	ND	60.0	50-140			
Benzo [g,h,i] perylene	0.064	0.02	ug/g	ND	51.1	50-140			
Benzo [k] fluoranthene	0.061	0.02	ug/g	ND	48.5	50-140			QM-07
Chrysene	0.067	0.02	ug/g	ND	53.3	50-140			
Dibenzo [a,h] anthracene	0.062	0.02	ug/g	ND	49.8	50-140			QM-07
Fluoranthene	0.082	0.02	ug/g	ND	65.8	50-140			
Fluorene	0.078	0.02	ug/g	ND	62.0	50-140			
Indeno [1,2,3-cd] pyrene	0.094	0.02	ug/g	ND	74.8	50-140			
1-Methylnaphthalene	0.083	0.02	ug/g	ND	66.6	50-140			
2-Methylnaphthalene	0.078	0.02	ug/g	ND	62.3	50-140			
Naphthalene	0.074	0.01	ug/g	ND	59.1	50-140			
Phenanthrene	0.075	0.02	ug/g	ND	59.8	50-140			
Pyrene	0.066	0.02	ug/g	ND	52.6	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: 2-Fluorobiphenyl	*0.142*		*ug/g*		*54.6*	*50-140*			
Surrogate: Terphenyl-d14	*0.145*		*ug/g*		*57.8*	*50-140*			
Volatiles									
Acetone	21.1	0.50	ug/g	ND	108	50-140			
Benzene	8.16	0.02	ug/g	ND	101	60-130			
Bromodichloromethane	8.20	0.05	ug/g	ND	102	60-130			
Bromoform	8.13	0.05	ug/g	ND	101	60-130			
Bromomethane	9.41	0.05	ug/g	ND	118	50-140			
Carbon Tetrachloride	8.06	0.05	ug/g	ND	101	60-130			
Chlorobenzene	8.47	0.05	ug/g	ND	105	60-130			
Chloroform	9.30	0.05	ug/g	ND	116	60-130			
Dibromochloromethane	8.02	0.05	ug/g	ND	100	60-130			
Dichlorodifluoromethane	7.77	0.05	ug/g	ND	97.1	50-140			
1,2-Dichlorobenzene	8.54	0.05	ug/g	ND	107	60-130			
1,3-Dichlorobenzene	8.56	0.05	ug/g	ND	107	60-130			
1,4-Dichlorobenzene	8.61	0.05	ug/g	ND	107	60-130			
1,1-Dichloroethane	8.28	0.05	ug/g	ND	104	60-130			
1,2-Dichloroethane	7.86	0.05	ug/g	ND	97.7	60-130			
1,1-Dichloroethylene	7.64	0.05	ug/g	ND	95.6	60-130			
cis-1,2-Dichloroethylene	8.12	0.05	ug/g	ND	101	60-130			
trans-1,2-Dichloroethylene	7.97	0.05	ug/g	ND	99.2	60-130			
1,2-Dichloropropane	8.25	0.05	ug/g	ND	103	60-130			
cis-1,3-Dichloropropylene	8.31	0.05	ug/g	ND	104	60-130			
trans-1,3-Dichloropropylene	8.37	0.05	ug/g	ND	104	60-130			
Ethylbenzene	8.53	0.05	ug/g	ND	106	60-130			
Ethylene dibromide (dibromoethane, 1,2-	8.47	0.05	ug/g	ND	105	60-130			
Hexane	10.0	0.05	ug/g	ND	125	60-130			
Methyl Ethyl Ketone (2-Butanone)	19.4	0.50	ug/g	ND	94.5	50-140			
Methyl Isobutyl Ketone	19.8	0.50	ug/g	ND	102	50-140			
Methyl tert-butyl ether	19.7	0.05	ug/g	ND	98.6	50-140			
Methylene Chloride	8.12	0.05	ug/g	ND	101	60-130			
Styrene	8.70	0.05	ug/g	ND	108	60-130			
1,1,1,2-Tetrachloroethane	8.51	0.05	ug/g	ND	106	60-130			
1,1,2,2-Tetrachloroethane	8.69	0.05	ug/g	ND	108	60-130			
Tetrachloroethylene	8.13	0.05	ug/g	ND	101	60-130			

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 19-Aug-2021

Order Date: 13-Aug-2021

Project Description: 21262

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	8.43	0.05	ug/g	ND	105	60-130			
1,1,1-Trichloroethane	8.06	0.05	ug/g	ND	101	60-130			
1,1,2-Trichloroethane	8.37	0.05	ug/g	ND	104	60-130			
Trichloroethylene	8.39	0.05	ug/g	ND	104	60-130			
Trichlorofluoromethane	8.57	0.05	ug/g	ND	107	50-140			
Vinyl chloride	8.37	0.02	ug/g	ND	105	50-140			
m,p-Xylenes	16.9	0.05	ug/g	ND	105	60-130			
o-Xylene	8.43	0.05	ug/g	ND	105	60-130			
Surrogate: 4-Bromofluorobenzene	*15.8*		*ug/g*		*98.7*	*50-140*			
Surrogate: Dibromofluoromethane	*19.1*		*ug/g*		*120*	*50-140*			
Surrogate: Toluene-d8	*15.9*		*ug/g*		*99.3*	*50-140*			

PARACEL LABORATORIES LTD.

Order #: 2133632

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 19-Aug-2021

Order Date: 13-Aug-2021

Project Description: 21262

Qualifier Notes:

Sample Qualifiers :

2 : Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QC Qualifiers :

QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

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/Solid results are reported on a dry weight basis unless otherwise indicated
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.

PARACEL LABORATORIES LTD.

Paracel ID: 2133632

Paracel Order Number (Lab Use Only)

Chain Of Custody (Lab Use Only) **№ 132508**

Client Name: Nicole Harper & Landtek

Contact Name:

Address: Nebo Rd.

Telephone:

Project Ref: 21262

Quote #:

PO #: 21262

E-mail: nicole@landtek.ca.

Page 1 of 1

Turnaround Time

☐ 1 day ☐ 3 day

☐ 2 day ☒ Regular

Date Required:

Regulation 153/04	Other Regulation
☒ Table 1 ☒ Res/Park ☐ Med/Fine	☐ REG 558 ☐ PWQO
☐ Table 2 ☐ Ind/Comm ☐ Coarse	☐ CCME ☐ MISA
☐ Table 3 ☐ Agri/Other	☐ SU - Sani ☐ SU - Storm
☐ Table ___	Mun:
For RSC: ☐ Yes ☒ No	☐ Other:

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken: Date	Sample Taken: Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)		ot Restr. dw				
1	BH15 SS1	S		3	AUG 12.21		X	X		X	X	X	X						
2	BH15 SS2			3			X	X	X						X				
3	BH20 SS1			3			X	X		X	X	X	X		X				
4	BH20 SS3			3			X	X		X	X	X	X		X				
5	BH21 SS1			3			X	X		X	X	X	X		X				
6	BH21 SS3			3			X	X		X	X	X	X						
7																			
8																			
9																			
10																			

Comments:

Method of Delivery: Walk in

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: AM	Verified By: AM
Relinquished By (Print): Nicole Harper	Date/Time:	Date/Time: 13/8/21 10:00	Date/Time: 13/8/21 10:20
Date/Time: AUG 13.21 9:30am	Temperature: °C	Temperature: 3-6 °C	pH Verified: ☐ By:

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Certificate of Analysis

Landtek Limited

205 Nebo Road, Unit 3
Hamilton, ON L8W2E1
Attn: Nicole Harper

Client PO: 21262
Project: 21262
Custody: 132509

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021

Order #: 2133633

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

Paracel ID	Client ID	Paracel ID	Client ID
2133633-01	BH114 SS1		
2133633-02	BH114 SS2		
2133633-03	BH117 SS1		
2133633-04	BH119 SS5		
2133633-05	BH119 SS1		

Approved By:

Milan Ralitsch, PhD
Senior Technical Manager

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021
Project Description: 21262

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Boron, available	MOE (HWE), EPA 200.8 - ICP-MS	18-Aug-21	18-Aug-21
Chromium, hexavalent - soil	MOE E3056 - Extraction, colourimetric	16-Aug-21	18-Aug-21
Mercury by CVAA	EPA 7471B - CVAA, digestion	18-Aug-21	18-Aug-21
PHC F1	CWS Tier 1 - P&T GC-FID	13-Aug-21	16-Aug-21
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	17-Aug-21	19-Aug-21
REG 153: Metals by ICP/MS, soil	EPA 6020 - Digestion - ICP-MS	17-Aug-21	17-Aug-21
REG 153: PAHs by GC-MS	EPA 8270 - GC-MS, extraction	18-Aug-21	19-Aug-21
REG 153: Pesticides, OC	EPA 8081B - GC-ECD	13-Aug-21	17-Aug-21
REG 153: VOCs by P&T GC-MS	EPA 8260 - P&T GC-MS	13-Aug-21	16-Aug-21
Solids, %	Gravimetric, calculation	17-Aug-21	18-Aug-21

Certificate of Analysis
Client: Landtek Limited
Client PO: 21262

Report Date: 19-Aug-2021
Order Date: 13-Aug-2021
Project Description: 21262

Summary of 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. Regulatory limts displayed in brackets, (), applies to medium and fine textured soils.

Criteria:

Client ID	Analyte	MDL / Units	Result	Reg 153/04 (2011)-Table 2 Residential

PARACEL LABORATORIES LTD.

Order #: 2133633

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 19-Aug-2021

Order Date: 13-Aug-2021

Project Description: 21262

	Client ID:	BH114 SS1	BH114 SS2	BH117 SS1	BH119 SS5	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133633-01	2133633-02	2133633-03	2133633-04	Reg 153/04 (2011)-Table 2 Residential	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	86.9	87.8	81.5	88.8		
Metals							
Antimony	1.0 ug/g	<1.0	-	<1.0	-	(7.5)	ug/g
Arsenic	1.0 ug/g	4.5	-	4.1	-	(18)	ug/g
Barium	1.0 ug/g	65.5	-	83.3	-	(390)	ug/g
Beryllium	0.5 ug/g	0.6	-	0.6	-	(5)	ug/g
Boron	5.0 ug/g	10.5	-	12.2	-	(120)	ug/g
Boron, available	0.5 ug/g	<0.5	-	<0.5	-	(1.5)	ug/g
Cadmium	0.5 ug/g	<0.5	-	<0.5	-	(1.2)	ug/g
Chromium	5.0 ug/g	16.5	-	15.8	-	(160)	ug/g
Chromium (VI)	0.2 ug/g	<0.2	-	<0.2	-	(10)	ug/g
Cobalt	1.0 ug/g	10.9	-	8.8	-	(22)	ug/g
Copper	5.0 ug/g	25.8	-	22.5	-	(180)	ug/g
Lead	1.0 ug/g	9.1	-	7.3	-	(120)	ug/g
Mercury	0.1 ug/g	<0.1	-	<0.1	-	(1.8)	ug/g
Molybdenum	1.0 ug/g	<1.0	-	<1.0	-	(6.9)	ug/g
Nickel	5.0 ug/g	22.7	-	19.5	-	(130)	ug/g
Selenium	1.0 ug/g	<1.0	-	<1.0	-	(2.4)	ug/g
Silver	0.3 ug/g	<0.3	-	<0.3	-	(25)	ug/g
Thallium	1.0 ug/g	<1.0	-	<1.0	-	(1)	ug/g
Uranium	1.0 ug/g	<1.0	-	<1.0	-	(23)	ug/g
Vanadium	10.0 ug/g	22.1	-	22.5	-	(86)	ug/g
Zinc	20.0 ug/g	50.5	-	41.3	-	(340)	ug/g

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Client: Landtek Limited
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Report Date: 19-Aug-2021
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Project Description: 21262

	Client ID:	BH114 SS1	BH114 SS2	BH117 SS1	BH119 SS5	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133633-01	2133633-02	2133633-03	2133633-04	Reg 153/04 (2011)-Table 2 Residential	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Volatiles							
Acetone	0.50 ug/g	-	<0.50	-	<0.50	(28)	ug/g
Benzene	0.02 ug/g	-	<0.02	-	<0.02	(0.17)	ug/g
Bromodichloromethane	0.05 ug/g	-	<0.05	-	<0.05	(1.9)	ug/g
Bromoform	0.05 ug/g	-	<0.05	-	<0.05	(0.26)	ug/g
Bromomethane	0.05 ug/g	-	<0.05	-	<0.05	(0.05)	ug/g
Carbon Tetrachloride	0.05 ug/g	-	<0.05	-	<0.05	(0.12)	ug/g
Chlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	(2.7)	ug/g
Chloroform	0.05 ug/g	-	<0.05	-	<0.05	(0.18)	ug/g
Dibromochloromethane	0.05 ug/g	-	<0.05	-	<0.05	(2.9)	ug/g
Dichlorodifluoromethane	0.05 ug/g	-	<0.05	-	<0.05	(25)	ug/g
1,2-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	(1.7)	ug/g
1,3-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	(6)	ug/g
1,4-Dichlorobenzene	0.05 ug/g	-	<0.05	-	<0.05	(0.097)	ug/g
1,1-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	(0.6)	ug/g
1,2-Dichloroethane	0.05 ug/g	-	<0.05	-	<0.05	(0.05)	ug/g
1,1-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	(0.05)	ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	(2.5)	ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	(0.75)	ug/g
1,2-Dichloropropane	0.05 ug/g	-	<0.05	-	<0.05	(0.085)	ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05		
trans-1,3-Dichloropropylene	0.05 ug/g	-	<0.05	-	<0.05		
1,3-Dichloropropene, total	0.05 ug/g	-	<0.05	-	<0.05	(0.081)	ug/g
Ethylbenzene	0.05 ug/g	-	<0.05	-	<0.05	(1.6)	ug/g

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Client: Landtek Limited
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Project Description: 21262

	Client ID:	BH114 SS1	BH114 SS2	BH117 SS1	BH119 SS5	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133633-01	2133633-02	2133633-03	2133633-04	Reg 153/04 (2011)-Table 2 Residential	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Ethylene dibromide (dibromoethane	0.05 ug/g	-	<0.05	-	<0.05	(0.05)	ug/g
Hexane	0.05 ug/g	-	<0.05	-	<0.05	(34)	ug/g
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	-	<0.50	-	<0.50	(44)	ug/g
Methyl Isobutyl Ketone	0.50 ug/g	-	<0.50	-	<0.50	(4.3)	ug/g
Methyl tert-butyl ether	0.05 ug/g	-	<0.05	-	<0.05	(1.4)	ug/g
Methylene Chloride	0.05 ug/g	-	<0.05	-	<0.05	(0.96)	ug/g
Styrene	0.05 ug/g	-	<0.05	-	<0.05	(2.2)	ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	(0.05)	ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	-	<0.05	-	<0.05	(0.05)	ug/g
Tetrachloroethylene	0.05 ug/g	-	<0.05	-	<0.05	(2.3)	ug/g
Toluene	0.05 ug/g	-	<0.05	-	<0.05	(6)	ug/g
1,1,1-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	(3.4)	ug/g
1,1,2-Trichloroethane	0.05 ug/g	-	<0.05	-	<0.05	(0.05)	ug/g
Trichloroethylene	0.05 ug/g	-	<0.05	-	<0.05	(0.52)	ug/g
Trichlorofluoromethane	0.05 ug/g	-	<0.05	-	<0.05	(5.8)	ug/g
Vinyl chloride	0.02 ug/g	-	<0.02	-	<0.02	(0.022)	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	(25)	ug/g
4-Bromofluorobenzene	Surrogate	-	88.6%	-	89.6%		
Dibromofluoromethane	Surrogate	-	83.3%	-	83.9%		
Toluene-d8	Surrogate	-	98.8%	-	98.3%		
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	-	<7	-	<7	(65)	ug/g

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	Client ID:	BH114 SS1	BH114 SS2	BH117 SS1	BH119 SS5	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021	Reg 153/04 (2011)-Table 2 Residential	
	Sample ID:	2133633-01	2133633-02	2133633-03	2133633-04		
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
F2 PHCs (C10-C16)	4 ug/g	-	<4	-	<4	(150)	ug/g
F3 PHCs (C16-C34)	8 ug/g	-	<8	-	<8	(1,300)	ug/g
F4 PHCs (C34-C50)	6 ug/g	-	<6	-	<6	(5,600)	ug/g
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	-	-	(29)	ug/g
Acenaphthylene	0.02 ug/g	<0.02	-	-	-	(0.17)	ug/g
Anthracene	0.02 ug/g	<0.02	-	-	-	(0.74)	ug/g
Benzo [a] anthracene	0.02 ug/g	<0.02	-	-	-	(0.63)	ug/g
Benzo [a] pyrene	0.02 ug/g	<0.02	-	-	-	(0.3)	ug/g
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	-	-	(0.78)	ug/g
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	-	-	(7.8)	ug/g
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	-	-	(0.78)	ug/g
Chrysene	0.02 ug/g	<0.02	-	-	-	(7.8)	ug/g
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	-	-	(0.1)	ug/g
Fluoranthene	0.02 ug/g	<0.02	-	-	-	(0.69)	ug/g
Fluorene	0.02 ug/g	<0.02	-	-	-	(69)	ug/g
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	-	-	(0.48)	ug/g
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	(3.4)	ug/g
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	(3.4)	ug/g
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	-	-	-	(3.4)	ug/g
Naphthalene	0.01 ug/g	<0.01	-	-	-	(0.75)	ug/g
Phenanthrene	0.02 ug/g	<0.02	-	-	-	(7.8)	ug/g
Pyrene	0.02 ug/g	<0.02	-	-	-	(78)	ug/g
2-Fluorobiphenyl	Surrogate	55.4%	-	-	-		

Certificate of Analysis

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Project Description: 21262

	Client ID:	BH114 SS1	BH114 SS2	BH117 SS1	BH119 SS5	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133633-01	2133633-02	2133633-03	2133633-04	Reg 153/04 (2011)-Table 2 Residential	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Terphenyl-d14	Surrogate	48.6% [2]	-	-	-		
Pesticides, OC							
Aldrin	0.01 ug/g	-	<0.01	<0.01	-	(0.05)	ug/g
gamma-BHC (Lindane)	0.01 ug/g	-	<0.01	<0.01	-	(0.063)	ug/g
alpha-Chlordane	0.01 ug/g	-	<0.01	<0.01	-		
gamma-Chlordane	0.01 ug/g	-	<0.01	<0.01	-		
Chlordane	0.01 ug/g	-	<0.01	<0.01	-	(0.05)	ug/g
o,p'-DDD	0.01 ug/g	-	<0.01	<0.01	-		
p,p'-DDD	0.02 ug/g	-	<0.02	<0.02	-		
DDD	0.02 ug/g	-	<0.02	<0.02	-	(3.3)	ug/g
o,p'-DDE	0.01 ug/g	-	<0.01	<0.01	-		
p,p'-DDE	0.01 ug/g	-	<0.01	<0.01	-		
DDE	0.01 ug/g	-	<0.01	<0.01	-	(0.33)	ug/g
o,p'-DDT	0.01 ug/g	-	<0.01	<0.01	-		
p,p'-DDT	0.01 ug/g	-	<0.01	<0.01	-		
DDT	0.01 ug/g	-	<0.01	<0.01	-	(1.4)	ug/g
Dieldrin	0.02 ug/g	-	<0.02	<0.02	-	(0.05)	ug/g
Endrin	0.02 ug/g	-	<0.02	<0.02	-	(0.04)	ug/g
Endosulfan I	0.01 ug/g	-	<0.01	<0.01	-		
Endosulfan II	0.02 ug/g	-	<0.02	<0.02	-		
Endosulfan I/II	0.02 ug/g	-	<0.02	<0.02	-	(0.04)	ug/g
Heptachlor	0.01 ug/g	-	<0.01	<0.01	-	(0.15)	ug/g
Heptachlor epoxide	0.01 ug/g	-	<0.01	<0.01	-	(0.05)	ug/g
Hexachlorobenzene	0.01 ug/g	-	<0.01	<0.01	-	(0.52)	ug/g

Certificate of Analysis

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Project Description: 21262

	Client ID:	BH114 SS1	BH114 SS2	BH117 SS1	BH119 SS5	Criteria:	
	Sample Date:	12-Aug-2021	12-Aug-2021	12-Aug-2021	12-Aug-2021		
	Sample ID:	2133633-01	2133633-02	2133633-03	2133633-04	Reg 153/04 (2011)-Table 2 Residential	
	Matrix:	Soil	Soil	Soil	Soil		
	MDL/Units						
Hexachlorobutadiene	0.01 ug/g	-	<0.01	<0.01	-	(0.014)	ug/g
Hexachloroethane	0.01 ug/g	-	<0.01	<0.01	-	(0.71)	ug/g
Methoxychlor	0.01 ug/g	-	<0.01	<0.01	-	(0.13)	ug/g
Decachlorobiphenyl	Surrogate	-	93.4%	88.6%	-		

Certificate of Analysis

Client: Landtek Limited

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	Client ID:	BH119 SS1	-	-	-		
	Sample Date:	12-Aug-2021	-	-	-	**Criteria:**	
	Sample ID:	2133633-05	-	-	-	**Reg 153/04 (2011)-Table 2 Residential**	
	Matrix:	Soil	-	-	-		
	MDL/Units						
Physical Characteristics							
% Solids	0.1 % by Wt.	85.6	-	-	-		
Volatiles							
Acetone	0.50 ug/g	<0.50	-	-	-	(28)	ug/g
Benzene	0.02 ug/g	<0.02	-	-	-	(0.17)	ug/g
Bromodichloromethane	0.05 ug/g	<0.05	-	-	-	(1.9)	ug/g
Bromoform	0.05 ug/g	<0.05	-	-	-	(0.26)	ug/g
Bromomethane	0.05 ug/g	<0.05	-	-	-	(0.05)	ug/g
Carbon Tetrachloride	0.05 ug/g	<0.05	-	-	-	(0.12)	ug/g
Chlorobenzene	0.05 ug/g	<0.05	-	-	-	(2.7)	ug/g
Chloroform	0.05 ug/g	<0.05	-	-	-	(0.18)	ug/g
Dibromochloromethane	0.05 ug/g	<0.05	-	-	-	(2.9)	ug/g
Dichlorodifluoromethane	0.05 ug/g	<0.05	-	-	-	(25)	ug/g
1,2-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	(1.7)	ug/g
1,3-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	(6)	ug/g
1,4-Dichlorobenzene	0.05 ug/g	<0.05	-	-	-	(0.097)	ug/g
1,1-Dichloroethane	0.05 ug/g	<0.05	-	-	-	(0.6)	ug/g
1,2-Dichloroethane	0.05 ug/g	<0.05	-	-	-	(0.05)	ug/g
1,1-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	(0.05)	ug/g
cis-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	(2.5)	ug/g
trans-1,2-Dichloroethylene	0.05 ug/g	<0.05	-	-	-	(0.75)	ug/g
1,2-Dichloropropane	0.05 ug/g	<0.05	-	-	-	(0.085)	ug/g
cis-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-		
trans-1,3-Dichloropropylene	0.05 ug/g	<0.05	-	-	-		

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	Client ID:	BH119 SS1	-	-	-		
	Sample Date:	12-Aug-2021	-	-	-	**Criteria:**	
	Sample ID:	2133633-05	-	-	-	**Reg 153/04 (2011)-Table 2 Residential**	
	Matrix:	Soil	-	-	-		
	MDL/Units						
1,3-Dichloropropene, total	0.05 ug/g	<0.05	-	-	-	(0.081)	ug/g
Ethylbenzene	0.05 ug/g	<0.05	-	-	-	(1.6)	ug/g
Ethylene dibromide (dibromoethane	0.05 ug/g	<0.05	-	-	-	(0.05)	ug/g
Hexane	0.05 ug/g	<0.05	-	-	-	(34)	ug/g
Methyl Ethyl Ketone (2-Butanone)	0.50 ug/g	<0.50	-	-	-	(44)	ug/g
Methyl Isobutyl Ketone	0.50 ug/g	<0.50	-	-	-	(4.3)	ug/g
Methyl tert-butyl ether	0.05 ug/g	<0.05	-	-	-	(1.4)	ug/g
Methylene Chloride	0.05 ug/g	<0.05	-	-	-	(0.96)	ug/g
Styrene	0.05 ug/g	<0.05	-	-	-	(2.2)	ug/g
1,1,1,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	(0.05)	ug/g
1,1,2,2-Tetrachloroethane	0.05 ug/g	<0.05	-	-	-	(0.05)	ug/g
Tetrachloroethylene	0.05 ug/g	<0.05	-	-	-	(2.3)	ug/g
Toluene	0.05 ug/g	<0.05	-	-	-	(6)	ug/g
1,1,1-Trichloroethane	0.05 ug/g	<0.05	-	-	-	(3.4)	ug/g
1,1,2-Trichloroethane	0.05 ug/g	<0.05	-	-	-	(0.05)	ug/g
Trichloroethylene	0.05 ug/g	<0.05	-	-	-	(0.52)	ug/g
Trichlorofluoromethane	0.05 ug/g	<0.05	-	-	-	(5.8)	ug/g
Vinyl chloride	0.02 ug/g	<0.02	-	-	-	(0.022)	ug/g
m,p-Xylenes	0.05 ug/g	<0.05	-	-	-		
o-Xylene	0.05 ug/g	<0.05	-	-	-		
Xylenes, total	0.05 ug/g	<0.05	-	-	-	(25)	ug/g
4-Bromofluorobenzene	Surrogate	88.8%	-	-	-		
Dibromofluoromethane	Surrogate	84.5%	-	-	-		
Toluene-d8	Surrogate	97.8%	-	-	-		

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	Client ID:	BH119 SS1	-	-	-	**Criteria:**	
	Sample Date:	12-Aug-2021	-	-	-		
	Sample ID:	2133633-05	-	-	-	**Reg 153/04 (2011)-Table 2 Residential**	
	Matrix:	Soil	-	-	-		
	MDL/Units						
Hydrocarbons							
F1 PHCs (C6-C10)	7 ug/g	<7	-	-	-	(65)	ug/g
F2 PHCs (C10-C16)	4 ug/g	<4	-	-	-	(150)	ug/g
F3 PHCs (C16-C34)	8 ug/g	10	-	-	-	(1,300)	ug/g
F4 PHCs (C34-C50)	6 ug/g	<6	-	-	-	(5,600)	ug/g
Semi-Volatiles							
Acenaphthene	0.02 ug/g	<0.02	-	-	-	(29)	ug/g
Acenaphthylene	0.02 ug/g	<0.02	-	-	-	(0.17)	ug/g
Anthracene	0.02 ug/g	<0.02	-	-	-	(0.74)	ug/g
Benzo [a] anthracene	0.02 ug/g	<0.02	-	-	-	(0.63)	ug/g
Benzo [a] pyrene	0.02 ug/g	<0.02	-	-	-	(0.3)	ug/g
Benzo [b] fluoranthene	0.02 ug/g	<0.02	-	-	-	(0.78)	ug/g
Benzo [g,h,i] perylene	0.02 ug/g	<0.02	-	-	-	(7.8)	ug/g
Benzo [k] fluoranthene	0.02 ug/g	<0.02	-	-	-	(0.78)	ug/g
Chrysene	0.02 ug/g	<0.02	-	-	-	(7.8)	ug/g
Dibenzo [a,h] anthracene	0.02 ug/g	<0.02	-	-	-	(0.1)	ug/g
Fluoranthene	0.02 ug/g	<0.02	-	-	-	(0.69)	ug/g
Fluorene	0.02 ug/g	<0.02	-	-	-	(69)	ug/g
Indeno [1,2,3-cd] pyrene	0.02 ug/g	<0.02	-	-	-	(0.48)	ug/g
1-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	(3.4)	ug/g
2-Methylnaphthalene	0.02 ug/g	<0.02	-	-	-	(3.4)	ug/g
Methylnaphthalene (1&2)	0.03 ug/g	<0.03	-	-	-	(3.4)	ug/g
Naphthalene	0.01 ug/g	<0.01	-	-	-	(0.75)	ug/g
Phenanthrene	0.02 ug/g	<0.02	-	-	-	(7.8)	ug/g

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 19-Aug-2021

Order Date: 13-Aug-2021

Project Description: 21262

	Client ID:	BH119 SS1	-	-	-			
	Sample Date:	12-Aug-2021	-	-	-	**Criteria:**		
	Sample ID:	2133633-05	-	-	-	**Reg 153/04 (2011)-Table 2 Residential**		
	Matrix:	Soil	-	-	-			
	MDL/Units							
Pyrene	0.02 ug/g	<0.02	-	-	-	(78)	ug/g	
2-Fluorobiphenyl	Surrogate	51.8%	-	-	-			
Terphenyl-d14	Surrogate	48.3% [2]	-	-	-			

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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						
Pesticides, OC									
Aldrin	ND	0.01	ug/g						
gamma-BHC (Lindane)	ND	0.01	ug/g						
alpha-Chlordane	ND	0.01	ug/g						
gamma-Chlordane	ND	0.01	ug/g						
Chlordane	ND	0.01	ug/g						
o,p'-DDD	ND	0.01	ug/g						
p,p'-DDD	ND	0.02	ug/g						
DDD	ND	0.02	ug/g						
o,p'-DDE	ND	0.01	ug/g						
p,p'-DDE	ND	0.01	ug/g						
DDE	ND	0.01	ug/g						
o,p'-DDT	ND	0.01	ug/g						
p,p'-DDT	ND	0.01	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
DDT	ND	0.01	ug/g						
Dieldrin	ND	0.02	ug/g						
Endrin	ND	0.02	ug/g						
Endosulfan I	ND	0.01	ug/g						
Endosulfan II	ND	0.02	ug/g						
Endosulfan I/II	ND	0.02	ug/g						
Heptachlor	ND	0.01	ug/g						
Heptachlor epoxide	ND	0.01	ug/g						
Hexachlorobenzene	ND	0.01	ug/g						
Hexachlorobutadiene	ND	0.01	ug/g						
Hexachloroethane	ND	0.01	ug/g						
Methoxychlor	ND	0.01	ug/g						
Surrogate: Decachlorobiphenyl	*0.0868*		*ug/g*		*86.8*	*50-140*			
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g						
Acenaphthylene	ND	0.02	ug/g						
Anthracene	ND	0.02	ug/g						
Benzo [a] anthracene	ND	0.02	ug/g						
Benzo [a] pyrene	ND	0.02	ug/g						
Benzo [b] fluoranthene	ND	0.02	ug/g						
Benzo [g,h,i] perylene	ND	0.02	ug/g						
Benzo [k] fluoranthene	ND	0.02	ug/g						
Chrysene	ND	0.02	ug/g						
Dibenzo [a,h] anthracene	ND	0.02	ug/g						
Fluoranthene	ND	0.02	ug/g						
Fluorene	ND	0.02	ug/g						
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g						
1-Methylnaphthalene	ND	0.02	ug/g						
2-Methylnaphthalene	ND	0.02	ug/g						
Methylnaphthalene (1&2)	ND	0.03	ug/g						
Naphthalene	ND	0.01	ug/g						
Phenanthrene	ND	0.02	ug/g						
Pyrene	ND	0.02	ug/g						
Surrogate: 2-Fluorobiphenyl	*0.104*		*ug/g*		*50.2*	*50-140*			
Surrogate: Terphenyl-d14	*0.125*		*ug/g*		*62.7*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g						
Benzene	ND	0.02	ug/g						
Bromodichloromethane	ND	0.05	ug/g						
Bromoform	ND	0.05	ug/g						
Bromomethane	ND	0.05	ug/g						
Carbon Tetrachloride	ND	0.05	ug/g						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chlorobenzene	ND	0.05	ug/g						
Chloroform	ND	0.05	ug/g						
Dibromochloromethane	ND	0.05	ug/g						
Dichlorodifluoromethane	ND	0.05	ug/g						
1,2-Dichlorobenzene	ND	0.05	ug/g						
1,3-Dichlorobenzene	ND	0.05	ug/g						
1,4-Dichlorobenzene	ND	0.05	ug/g						
1,1-Dichloroethane	ND	0.05	ug/g						
1,2-Dichloroethane	ND	0.05	ug/g						
1,1-Dichloroethylene	ND	0.05	ug/g						
cis-1,2-Dichloroethylene	ND	0.05	ug/g						
trans-1,2-Dichloroethylene	ND	0.05	ug/g						
1,2-Dichloropropane	ND	0.05	ug/g						
cis-1,3-Dichloropropylene	ND	0.05	ug/g						
trans-1,3-Dichloropropylene	ND	0.05	ug/g						
1,3-Dichloropropene, total	ND	0.05	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g						
Hexane	ND	0.05	ug/g						
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g						
Methyl Isobutyl Ketone	ND	0.50	ug/g						
Methyl tert-butyl ether	ND	0.05	ug/g						
Methylene Chloride	ND	0.05	ug/g						
Styrene	ND	0.05	ug/g						
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g						
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g						
Tetrachloroethylene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
1,1,1-Trichloroethane	ND	0.05	ug/g						
1,1,2-Trichloroethane	ND	0.05	ug/g						
Trichloroethylene	ND	0.05	ug/g						
Trichlorofluoromethane	ND	0.05	ug/g						
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*7.55*		*ug/g*		*94.4*	*50-140*			
Surrogate: Dibromofluoromethane	*8.02*		*ug/g*		*100*	*50-140*			
Surrogate: Toluene-d8	*7.75*		*ug/g*		*96.9*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
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)	ND	8	ug/g	ND			NC	30	
F4 PHCs (C34-C50)	ND	6	ug/g	ND			NC	30	
Metals									
Antimony	ND	1.0	ug/g	ND			NC	30	
Arsenic	2.8	1.0	ug/g	2.5			11.9	30	
Barium	61.5	1.0	ug/g	61.4			0.1	30	
Beryllium	0.5	0.5	ug/g	ND			NC	30	
Boron, available	ND	0.5	ug/g	ND			NC	35	
Boron	ND	5.0	ug/g	11.3			NC	30	
Cadmium	ND	0.5	ug/g	ND			NC	30	
Chromium (VI)	ND	0.2	ug/g	ND			NC	35	
Chromium	14.7	5.0	ug/g	14.4			2.1	30	
Cobalt	5.7	1.0	ug/g	5.6			1.9	30	
Copper	12.9	5.0	ug/g	12.6			2.7	30	
Lead	9.6	1.0	ug/g	9.3			3.3	30	
Mercury	ND	0.1	ug/g	ND			NC	30	
Molybdenum	ND	1.0	ug/g	ND			NC	30	
Nickel	11.9	5.0	ug/g	11.8			1.5	30	
Selenium	1.1	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	21.2	10.0	ug/g	21.3			0.7	30	
Zinc	45.9	20.0	ug/g	45.0			2.1	30	
Pesticides, OC									
Aldrin	ND	0.01	ug/g	ND			NC	40	
gamma-BHC (Lindane)	ND	0.01	ug/g	ND			NC	40	
alpha-Chlordane	ND	0.01	ug/g	ND			NC	40	
gamma-Chlordane	ND	0.01	ug/g	ND			NC	40	
o,p'-DDD	ND	0.01	ug/g	ND			NC	40	
p,p'-DDD	ND	0.02	ug/g	ND			NC	40	
o,p'-DDE	ND	0.01	ug/g	ND			NC	40	
p,p'-DDE	ND	0.01	ug/g	ND			NC	40	
o,p'-DDT	ND	0.01	ug/g	ND			NC	40	
p,p'-DDT	ND	0.01	ug/g	ND			NC	40	
Dieldrin	ND	0.02	ug/g	ND			NC	40	
Endrin	ND	0.02	ug/g	ND			NC	40	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Endosulfan I	ND	0.01	ug/g	ND			NC	40	
Endosulfan II	ND	0.02	ug/g	ND			NC	40	
Heptachlor	ND	0.01	ug/g	ND			NC	40	
Heptachlor epoxide	ND	0.01	ug/g	ND			NC	40	
Hexachlorobenzene	ND	0.01	ug/g	ND			NC	40	
Hexachlorobutadiene	ND	0.01	ug/g	ND			NC	40	
Hexachloroethane	ND	0.01	ug/g	ND			NC	40	
Methoxychlor	ND	0.01	ug/g	ND			NC	40	
Surrogate: Decachlorobiphenyl	*0.123*		ug/g		*97.9*	*50-140*			
Physical Characteristics									
% Solids	87.3	0.1	% by Wt.	86.3			1.1	25	
Semi-Volatiles									
Acenaphthene	ND	0.02	ug/g	ND			NC	40	
Acenaphthylene	ND	0.02	ug/g	ND			NC	40	
Anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] anthracene	ND	0.02	ug/g	ND			NC	40	
Benzo [a] pyrene	ND	0.02	ug/g	ND			NC	40	
Benzo [b] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Benzo [g,h,i] perylene	ND	0.02	ug/g	ND			NC	40	
Benzo [k] fluoranthene	ND	0.02	ug/g	ND			NC	40	
Chrysene	ND	0.02	ug/g	ND			NC	40	
Dibenzo [a,h] anthracene	ND	0.02	ug/g	ND			NC	40	
Fluoranthene	ND	0.02	ug/g	ND			NC	40	
Fluorene	ND	0.02	ug/g	ND			NC	40	
Indeno [1,2,3-cd] pyrene	ND	0.02	ug/g	ND			NC	40	
1-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
2-Methylnaphthalene	ND	0.02	ug/g	ND			NC	40	
Naphthalene	ND	0.01	ug/g	ND			NC	40	
Phenanthrene	ND	0.02	ug/g	ND			NC	40	
Pyrene	ND	0.02	ug/g	ND			NC	40	
Surrogate: 2-Fluorobiphenyl	*0.113*		ug/g		*54.3*	*50-140*			
Surrogate: Terphenyl-d14	*0.112*		ug/g		*55.8*	*50-140*			
Volatiles									
Acetone	ND	0.50	ug/g	ND			NC	50	
Benzene	ND	0.02	ug/g	ND			NC	50	
Bromodichloromethane	ND	0.05	ug/g	ND			NC	50	
Bromoform	ND	0.05	ug/g	ND			NC	50	
Bromomethane	ND	0.05	ug/g	ND			NC	50	
Carbon Tetrachloride	ND	0.05	ug/g	ND			NC	50	
Chlorobenzene	ND	0.05	ug/g	ND			NC	50	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chloroform	ND	0.05	ug/g	ND			NC	50	
Dibromochloromethane	ND	0.05	ug/g	ND			NC	50	
Dichlorodifluoromethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,3-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,4-Dichlorobenzene	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
cis-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
trans-1,2-Dichloroethylene	ND	0.05	ug/g	ND			NC	50	
1,2-Dichloropropane	ND	0.05	ug/g	ND			NC	50	
cis-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
trans-1,3-Dichloropropylene	ND	0.05	ug/g	ND			NC	50	
Ethylbenzene	ND	0.05	ug/g	ND			NC	50	
Ethylene dibromide (dibromoethane, 1,2-	ND	0.05	ug/g	ND			NC	50	
Hexane	ND	0.05	ug/g	ND			NC	50	
Methyl Ethyl Ketone (2-Butanone)	ND	0.50	ug/g	ND			NC	50	
Methyl Isobutyl Ketone	ND	0.50	ug/g	ND			NC	50	
Methyl tert-butyl ether	ND	0.05	ug/g	ND			NC	50	
Methylene Chloride	ND	0.05	ug/g	ND			NC	50	
Styrene	ND	0.05	ug/g	ND			NC	50	
1,1,1,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2,2-Tetrachloroethane	ND	0.05	ug/g	ND			NC	50	
Tetrachloroethylene	ND	0.05	ug/g	ND			NC	50	
Toluene	ND	0.05	ug/g	ND			NC	50	
1,1,1-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
1,1,2-Trichloroethane	ND	0.05	ug/g	ND			NC	50	
Trichloroethylene	0.068	0.05	ug/g	0.068			0.0	50	
Trichlorofluoromethane	ND	0.05	ug/g	ND			NC	50	
Vinyl chloride	ND	0.02	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: 4-Bromofluorobenzene	*12.8*		ug/g		*93.7*	*50-140*			
Surrogate: Dibromofluoromethane	*12.5*		ug/g		*91.7*	*50-140*			
Surrogate: Toluene-d8	*13.4*		ug/g		*98.4*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	60	7	ug/g	ND	85.5	80-120			
F2 PHCs (C10-C16)	77	4	ug/g	ND	93.2	60-140			
F3 PHCs (C16-C34)	181	8	ug/g	ND	97.4	60-140			
F4 PHCs (C34-C50)	138	6	ug/g	ND	104	60-140			
Metals									
Antimony	139	1.0	ug/g	ND	111	70-130			
Arsenic	139	1.0	ug/g	2.5	109	70-130			
Barium	204	1.0	ug/g	61.4	114	70-130			
Beryllium	125	0.5	ug/g	ND	99.9	70-130			
Boron, available	4.07	0.5	ug/g	ND	81.3	70-122			
Boron	136	5.0	ug/g	11.3	99.9	70-130			
Cadmium	127	0.5	ug/g	ND	101	70-130			
Chromium (VI)	4.4	0.2	ug/g	ND	87.5	70-130			
Chromium	144	5.0	ug/g	14.4	104	70-130			
Cobalt	132	1.0	ug/g	5.6	101	70-130			
Copper	144	5.0	ug/g	12.6	105	70-130			
Lead	132	1.0	ug/g	9.3	98.5	70-130			
Mercury	1.41	0.1	ug/g	ND	94.2	70-130			
Molybdenum	129	1.0	ug/g	ND	104	70-130			
Nickel	142	5.0	ug/g	11.8	104	70-130			
Selenium	129	1.0	ug/g	ND	103	70-130			
Silver	114	0.3	ug/g	ND	91.3	70-130			
Thallium	124	1.0	ug/g	ND	99.0	70-130			
Uranium	124	1.0	ug/g	ND	99.3	70-130			
Vanadium	152	10.0	ug/g	21.3	104	70-130			
Zinc	186	20.0	ug/g	45.0	113	70-130			
Pesticides, OC									
Aldrin	0.21	0.01	ug/g	ND	85.5	50-140			
gamma-BHC (Lindane)	0.19	0.01	ug/g	ND	77.1	50-140			
alpha-Chlordane	0.19	0.01	ug/g	ND	76.5	50-140			
gamma-Chlordane	0.19	0.01	ug/g	ND	76.4	50-140			
o,p'-DDD	0.19	0.01	ug/g	ND	74.8	50-140			
p,p'-DDD	0.20	0.02	ug/g	ND	78.6	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
o,p'-DDE	0.21	0.01	ug/g	ND	84.7	50-140			
p,p'-DDE	0.19	0.01	ug/g	ND	74.9	50-140			
o,p'-DDT	0.20	0.01	ug/g	ND	79.6	50-140			
p,p'-DDT	0.18	0.01	ug/g	ND	71.3	50-140			
Dieldrin	0.21	0.02	ug/g	ND	85.1	50-140			
Endrin	0.14	0.02	ug/g	ND	57.3	50-140			
Endosulfan I	0.21	0.01	ug/g	ND	83.0	50-140			
Endosulfan II	0.19	0.02	ug/g	ND	75.0	50-140			
Heptachlor	0.20	0.01	ug/g	ND	80.7	50-140			
Heptachlor epoxide	0.21	0.01	ug/g	ND	83.9	50-140			
Hexachlorobenzene	0.22	0.01	ug/g	ND	87.9	50-140			
Hexachlorobutadiene	0.30	0.01	ug/g	ND	119	50-140			
Hexachloroethane	0.21	0.01	ug/g	ND	85.0	50-140			
Methoxychlor	0.14	0.01	ug/g	ND	54.6	50-140			
Surrogate: Decachlorobiphenyl	*0.120*		*ug/g*		*95.8*	*50-140*			
Semi-Volatiles									
Acenaphthene	0.054	0.02	ug/g	ND	53.8	50-140			
Acenaphthylene	0.053	0.02	ug/g	ND	52.7	50-140			
Anthracene	0.056	0.02	ug/g	ND	55.9	50-140			
Benzo [a] anthracene	0.056	0.02	ug/g	ND	56.4	50-140			
Benzo [a] pyrene	0.063	0.02	ug/g	ND	63.4	50-140			
Benzo [b] fluoranthene	0.060	0.02	ug/g	ND	60.0	50-140			
Benzo [g,h,i] perylene	0.051	0.02	ug/g	ND	51.1	50-140			
Benzo [k] fluoranthene	0.048	0.02	ug/g	ND	48.5	50-140			QM-07
Chrysene	0.053	0.02	ug/g	ND	53.3	50-140			
Dibenzo [a,h] anthracene	0.050	0.02	ug/g	ND	49.8	50-140			QM-07
Fluoranthene	0.066	0.02	ug/g	ND	65.8	50-140			
Fluorene	0.062	0.02	ug/g	ND	62.0	50-140			
Indeno [1,2,3-cd] pyrene	0.075	0.02	ug/g	ND	74.8	50-140			
1-Methylnaphthalene	0.067	0.02	ug/g	ND	66.6	50-140			
2-Methylnaphthalene	0.062	0.02	ug/g	ND	62.3	50-140			
Naphthalene	0.059	0.01	ug/g	ND	59.1	50-140			
Phenanthrene	0.060	0.02	ug/g	ND	59.8	50-140			
Pyrene	0.053	0.02	ug/g	ND	52.6	50-140			
Surrogate: 2-Fluorobiphenyl	*0.114*		*ug/g*		*54.6*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: Terphenyl-d14	*0.116*		*ug/g*		*57.8*	*50-140*			
Volatiles									
Acetone	21.1	0.50	ug/g	ND	108	50-140			
Benzene	8.16	0.02	ug/g	ND	101	60-130			
Bromodichloromethane	8.20	0.05	ug/g	ND	102	60-130			
Bromoform	8.13	0.05	ug/g	ND	101	60-130			
Bromomethane	9.41	0.05	ug/g	ND	118	50-140			
Carbon Tetrachloride	8.06	0.05	ug/g	ND	101	60-130			
Chlorobenzene	8.47	0.05	ug/g	ND	105	60-130			
Chloroform	9.30	0.05	ug/g	ND	116	60-130			
Dibromochloromethane	8.02	0.05	ug/g	ND	100	60-130			
Dichlorodifluoromethane	7.77	0.05	ug/g	ND	97.1	50-140			
1,2-Dichlorobenzene	8.54	0.05	ug/g	ND	107	60-130			
1,3-Dichlorobenzene	8.56	0.05	ug/g	ND	107	60-130			
1,4-Dichlorobenzene	8.61	0.05	ug/g	ND	107	60-130			
1,1-Dichloroethane	8.28	0.05	ug/g	ND	104	60-130			
1,2-Dichloroethane	7.86	0.05	ug/g	ND	97.7	60-130			
1,1-Dichloroethylene	7.64	0.05	ug/g	ND	95.6	60-130			
cis-1,2-Dichloroethylene	8.12	0.05	ug/g	ND	101	60-130			
trans-1,2-Dichloroethylene	7.97	0.05	ug/g	ND	99.2	60-130			
1,2-Dichloropropane	8.25	0.05	ug/g	ND	103	60-130			
cis-1,3-Dichloropropylene	8.31	0.05	ug/g	ND	104	60-130			
trans-1,3-Dichloropropylene	8.37	0.05	ug/g	ND	104	60-130			
Ethylbenzene	8.53	0.05	ug/g	ND	106	60-130			
Ethylene dibromide (dibromoethane, 1,2-	8.47	0.05	ug/g	ND	105	60-130			
Hexane	10.0	0.05	ug/g	ND	125	60-130			
Methyl Ethyl Ketone (2-Butanone)	19.4	0.50	ug/g	ND	94.5	50-140			
Methyl Isobutyl Ketone	19.8	0.50	ug/g	ND	102	50-140			
Methyl tert-butyl ether	19.7	0.05	ug/g	ND	98.6	50-140			
Methylene Chloride	8.12	0.05	ug/g	ND	101	60-130			
Styrene	8.70	0.05	ug/g	ND	108	60-130			
1,1,1,2-Tetrachloroethane	8.51	0.05	ug/g	ND	106	60-130			
1,1,2,2-Tetrachloroethane	8.69	0.05	ug/g	ND	108	60-130			
Tetrachloroethylene	8.13	0.05	ug/g	ND	101	60-130			
Toluene	8.43	0.05	ug/g	ND	105	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1,1-Trichloroethane	8.06	0.05	ug/g	ND	101	60-130			
1,1,2-Trichloroethane	8.37	0.05	ug/g	ND	104	60-130			
Trichloroethylene	8.39	0.05	ug/g	ND	104	60-130			
Trichlorofluoromethane	8.57	0.05	ug/g	ND	107	50-140			
Vinyl chloride	8.37	0.02	ug/g	ND	105	50-140			
m,p-Xylenes	16.9	0.05	ug/g	ND	105	60-130			
o-Xylene	8.43	0.05	ug/g	ND	105	60-130			
Surrogate: 4-Bromofluorobenzene	*15.8*		*ug/g*		*98.7*	*50-140*			
Surrogate: Dibromofluoromethane	*19.1*		*ug/g*		*120*	*50-140*			
Surrogate: Toluene-d8	*15.9*		*ug/g*		*99.3*	*50-140*			

PARACEL LABORATORIES LTD.

Order #: 2133633

Certificate of Analysis

Client: Landtek Limited

Client PO: 21262

Report Date: 19-Aug-2021

Order Date: 13-Aug-2021

Project Description: 21262

Qualifier Notes:

Sample Qualifiers :

2 : Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QC Qualifiers :

QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

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/Solid results are reported on a dry weight basis unless otherwise indicated
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.

PARACEL LABORATORIES LTD.

Paracel ID: 2133633

Paracel Order Number (Lab Use Only)

Chain Of Custody

(Lab Use Only)

№ 132509

Client Name: Candtl	Project Ref: 21262
Contact Name: Nicole Harper	Quote #:
Address: Nebo	PO #: 21262
	E-mail:
Telephone:	

Page 1 of 1

Turnaround Time

☐ 1 day ☐ 3 day

☐ 2 day ☒ Regular

Date Required:

Regulation 153/04

☐ Table 1 ☒ Res/Park ☒ Med/Fine

☒ Table 2 ☐ Ind/Comm ☐ Coarse

☐ Table 3 ☐ Agri/Other

☐ Table ___

For RSC: ☐ Yes ☒ No

Other Regulation

☐ REG 558 ☐ PWQO

☐ CCME ☐ MISA

☐ SU - Sani ☐ SU - Storm

Mun:

☐ Other:

Matrix Type: **S** (Soil/Sed.) **GW** (Ground Water) **SW** (Surface Water) **SS** (Storm/Sanitary Sewer) **P** (Paint) **A** (Air) **O** (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals by ICP	Hg	CrVI	B (HWS)		OC Pesticides				
1	BH114 SS1	S		2	Au 12.21		~~X~~	~~X~~	~~X~~	X	X	X	V		~~X~~				
2	BH 114 SS2.	↓		3	↓		X	X	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		X				
3	BH117 SS1	↓		2	↓					X	X	X	X		X				
4	BH119 SS5	↓		2	↓		X	X											
5	BH119 SS1	S		2	↓		X	X	X										
6																			
7																			
8																			
9																			
10																			

Comments:

Method of Delivery: Walk in

Relinquished By (Sign): Nicole Harper	Received By Driver/Depot:	Received at Lab: Am	Verified By: Am
Relinquished By (Print): Nicole Harper	Date/Time:	Date/Time: 13/8/21 10:00	Date/Time: 13/8/21 10:20
Date/Time: AUG 13 21 9:30am	Temperature: °C	Temperature: 3.6 °C	pH Verified: ☐ By:

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Certificate of Analysis

Landtek Limited
205 Nebo Road, Unit 3
Hamilton, ON L8W 2E1
Attn: Lauren Blair

Client PO:
Project: 21263
Custody: 141304, 141380

Report Date: 11-Jan-2024
Order Date: 4-Apr-2023

Revised Report

Order #: 2314190

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

Paracel ID	Client ID
2314190-05	MW119-20
2314190-06	MW118-20
2314190-07	MW117-20
2314190-09	MW120-S
2314190-10	MW120-D
2314190-11	MW121-S
2314190-12	MW121-D
2314190-13	MW111-20
2314190-15	MW101-20
2314190-17	DUP A
2314190-18	DUP B
2314190-19	Trip Blank

Approved By:

Milan Ralitsch, PhD
Senior Technical Manager

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Anions	EPA 300.1 - IC	11-Apr-23	11-Apr-23
Chromium, hexavalent - water	MOE E3056 - colourimetric	6-Apr-23	6-Apr-23
Cyanide, free	MOE E3015 - Auto Colour	10-Apr-23	10-Apr-23
Mercury by CVAA	EPA 245.2 - Cold Vapour AA	10-Apr-23	11-Apr-23
pH	EPA 150.1 - pH probe @25 °C	10-Apr-23	10-Apr-23
PHC F1	CWS Tier 1 - P&T GC-FID	5-Apr-23	6-Apr-23
PHCs F2 to F4	CWS Tier 1 - GC-FID, extraction	6-Apr-23	10-Apr-23
REG 153: Metals by ICP/MS, water	EPA 200.8, ICP-MS	6-Apr-23	6-Apr-23
REG 153: PAHs by GC-MS	EPA 625 - GC-MS, extraction	5-Apr-23	10-Apr-23
REG 153: VOCs by P&T GC-MS	EPA 624 - P&T GC-MS	6-Apr-23	6-Apr-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 -T1 Groundwater	-
MW119-20	Chloride	1.0 mg/L	904	790000 ug/L	-
MW119-20	Lead	0.2 ug/L	2.5	1.9 ug/L	-
MW118-20	Uranium	0.2 ug/L	13.6	8.9 ug/L	-
MW118-20	Trichloroethylene	0.5 ug/L	5.3	0.5 ug/L	-
MW117-20	Boron	10.0 ug/L	7330	1700 ug/L	-
MW117-20	Lead	0.2 ug/L	2.4	1.9 ug/L	-
MW117-20	Molybdenum	0.5 ug/L	28.7	23 ug/L	-
MW117-20	Sodium	200 ug/L	770000	490000 ug/L	-
MW120-S	Copper	0.5 ug/L	5.2	5 ug/L	-
MW120-S	Trichloroethylene	0.5 ug/L	7.7	0.5 ug/L	-
MW120-S	F2 PHCs (C10-C16)	100 ug/L	262	150 ug/L	-
MW120-S	F3 PHCs (C16-C34)	100 ug/L	552	500 ug/L	-
MW120-D	Uranium	0.2 ug/L	33.3	8.9 ug/L	-
MW120-D	Trichloroethylene	0.5 ug/L	3.7	0.5 ug/L	-
MW121-S	Trichloroethylene	0.5 ug/L	4.6	0.5 ug/L	-
MW121-D	Boron	10.0 ug/L	3440	1700 ug/L	-
MW121-D	Trichloroethylene	0.5 ug/L	4.6	0.5 ug/L	-
MW111-20	Boron	10.0 ug/L	2360	1700 ug/L	-
MW111-20	Benzo [a] pyrene	0.01 ug/L	<0.03 [1]	0.01 ug/L	-
MW111-20	Benzo [b] fluoranthene	0.05 ug/L	<0.14 [1]	0.1 ug/L	-
MW111-20	Benzo [k] fluoranthene	0.05 ug/L	<0.14 [1]	0.1 ug/L	-
MW111-20	Chrysene	0.05 ug/L	<0.14 [1]	0.1 ug/L	-

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 -T1 Groundwater	-
MW111-20	Phenanthrene	0.05 ug/L	<0.14 [1]	0.1 ug/L	-
DUP A	Trichloroethylene	0.5 ug/L	7.8	0.5 ug/L	-
DUP B	Trichloroethylene	0.5 ug/L	3.9	0.5 ug/L	-

PARACEL LABORATORIES LTD.

Order #: 2314190

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW119-20	MW118-20	MW117-20	MW120-S	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-05	2314190-06	2314190-07	2314190-09		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
General Inorganics							
Cyanide, free	2 ug/L	<2	<2	<2	<2	5 ug/L	-
pH	0.1 pH Units	7.0	7.0	7.2	7.2	5.00 - 9.00 pH Units	-
Anions							
Chloride	1.0 mg/L	904	84.9	623	466	790000 ug/L	-
Metals							
Mercury	0.1 ug/L	<0.1	<0.1	<0.1	<0.1	0.1 ug/L	-
Antimony	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.5 ug/L	-
Arsenic	1.0 ug/L	2.7	<1.0	1.3	<1.0	13 ug/L	-
Barium	1.0 ug/L	51.9	10.7	14.7	57.4	610 ug/L	-
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Boron	10.0 ug/L	153	1370	7330	101	1700 ug/L	-
Cadmium	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.5 ug/L	-
Chromium	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	11 ug/L	-
Chromium (VI)	10 ug/L	<10	<10	<10	<10	25 ug/L	-
Cobalt	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	3.8 ug/L	-
Copper	0.5 ug/L	<0.5	<0.5	1.8	5.2	5 ug/L	-
Lead	0.2 ug/L	2.5	<0.2	2.4	<0.2	1.9 ug/L	-
Molybdenum	0.5 ug/L	<0.5	5.4	28.7	3.3	23 ug/L	-
Nickel	1.0 ug/L	<1.0	1.3	<1.0	1.0	14 ug/L	-
Selenium	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	5 ug/L	-
Silver	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.3 ug/L	-
Sodium	200 ug/L	129000	157000	770000	272000	490000 ug/L	-
Thallium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Uranium	0.2 ug/L	<0.2	13.6	<0.2	6.9	8.9 ug/L	-
Vanadium	0.5 ug/L	<0.5	0.8	<0.5	<0.5	3.9 ug/L	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW119-20	MW118-20	MW117-20	MW120-S	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-05	2314190-06	2314190-07	2314190-09		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Metals							
Zinc	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	160 ug/L	-
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	2700 ug/L	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	5 ug/L	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.89 ug/L	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.2 ug/L	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	590 ug/L	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.6 ug/L	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.6 ug/L	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-

	Client ID:	MW119-20	MW118-20	MW117-20	MW120-S	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-05	2314190-06	2314190-07	2314190-09		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Volatiles							
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.2 ug/L	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	5 ug/L	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	400 ug/L	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	640 ug/L	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0	15 ug/L	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	5 ug/L	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.1 ug/L	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.8 ug/L	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Trichloroethylene	0.5 ug/L	<0.5	5.3	<0.5	7.7	0.5 ug/L	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	150 ug/L	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Xylenes, total	0.05 ug/L	<0.5	<0.5	<0.5	<0.5	72 ug/L	-
Toluene-d8	Surrogate	105%	105%	103%	105%	-	-
4-Bromofluorobenzene	Surrogate	109%	110%	107%	109%	-	-
Dibromofluoromethane	Surrogate	76.2%	76.5%	76.4%	80.8%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25	420 ug/L	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	262	150 ug/L	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW119-20	MW118-20	MW117-20	MW120-S	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-05	2314190-06	2314190-07	2314190-09		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Hydrocarbons							
F3 PHCs (C16-C34)	100 ug/L	<100	202	<100	552	500 ug/L	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100	500 ug/L	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	4.1 ug/L	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	1 ug/L	-
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	0.1 ug/L	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	0.2 ug/L	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	0.01 ug/L	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	0.1 ug/L	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	0.2 ug/L	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	0.1 ug/L	-
Chrysene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	0.1 ug/L	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	0.2 ug/L	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	0.4 ug/L	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	120 ug/L	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	0.2 ug/L	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	2 ug/L	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	2 ug/L	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	<0.10	2 ug/L	-
Naphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	7 ug/L	-
Phenanthrene	0.05 ug/L	<0.05	<0.05	<0.05	<0.05	0.1 ug/L	-
Pyrene	0.01 ug/L	<0.01	<0.01	<0.01	<0.01	0.2 ug/L	-
2-Fluorobiphenyl	Surrogate	87.9%	85.1%	83.0%	81.3%	-	-
Terphenyl-d14	Surrogate	98.6%	100%	102%	99.7%	-	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW120-D	MW121-S	MW121-D	MW111-20	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-10	2314190-11	2314190-12	2314190-13		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
General Inorganics							
Cyanide, free	2 ug/L	<2	<2	<2	<2	5 ug/L	-
pH	0.1 pH Units	7.3	7.1	7.2	7.6	5.00 - 9.00 pH Units	-
Anions							
Chloride	1.0 mg/L	583	41.8	552	47.4	790000 ug/L	-
Metals							
Mercury	0.1 ug/L	<0.1	<0.1	<0.1	<0.1	0.1 ug/L	-
Antimony	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.5 ug/L	-
Arsenic	1.0 ug/L	<1.0	<1.0	<1.0	2.1	13 ug/L	-
Barium	1.0 ug/L	44.7	42.4	39.9	42.2	610 ug/L	-
Beryllium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Boron	10.0 ug/L	1170	91.8	3440	2360	1700 ug/L	-
Cadmium	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.5 ug/L	-
Chromium	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	11 ug/L	-
Chromium (VI)	10 ug/L	<10	<10	<10	<10	25 ug/L	-
Cobalt	0.5 ug/L	<0.5	<0.5	0.5	<0.5	3.8 ug/L	-
Copper	0.5 ug/L	<0.5	3.8	<0.5	<0.5	5 ug/L	-
Lead	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	1.9 ug/L	-
Molybdenum	0.5 ug/L	15.1	<0.5	7.0	22.1	23 ug/L	-
Nickel	1.0 ug/L	1.0	<1.0	<1.0	<1.0	14 ug/L	-
Selenium	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	5 ug/L	-
Silver	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.3 ug/L	-
Sodium	200 ug/L	151000	49000	147000	123000	490000 ug/L	-
Thallium	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Uranium	0.2 ug/L	33.3	<0.2	<0.2	<0.2	8.9 ug/L	-
Vanadium	0.5 ug/L	0.8	<0.5	<0.5	0.9	3.9 ug/L	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW120-D	MW121-S	MW121-D	MW111-20	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-10	2314190-11	2314190-12	2314190-13		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Metals							
Zinc	5.0 ug/L	<5.0	5.4	<5.0	<5.0	160 ug/L	-
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	2700 ug/L	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	5 ug/L	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.89 ug/L	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.2 ug/L	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	590 ug/L	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.6 ug/L	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.6 ug/L	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.2 ug/L	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW120-D	MW121-S	MW121-D	MW111-20	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-10	2314190-11	2314190-12	2314190-13		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Volatiles							
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	5 ug/L	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	400 ug/L	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	640 ug/L	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0	15 ug/L	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	5 ug/L	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.1 ug/L	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.8 ug/L	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Trichloroethylene	0.5 ug/L	3.7	4.6	4.6	<0.5	0.5 ug/L	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	150 ug/L	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Xylenes, total	0.05 ug/L	<0.5	<0.5	<0.5	<0.5	72 ug/L	-
4-Bromofluorobenzene	Surrogate	106%	109%	108%	106%	-	-
Dibromofluoromethane	Surrogate	76.2%	78.0%	77.3%	71.1%	-	-
Toluene-d8	Surrogate	103%	104%	104%	104%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	<25	420 ug/L	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	<100	150 ug/L	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW120-D	MW121-S	MW121-D	MW111-20	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-10	2314190-11	2314190-12	2314190-13		
	Matrix:	Ground Water	Ground Water	Ground Water	Ground Water		
	MDL/Units						
Hydrocarbons							
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	<100	500 ug/L	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	<100	500 ug/L	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	4.1 ug/L	-
Acenaphthylene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	1 ug/L	-
Anthracene	0.01 ug/L	<0.01	<0.01	<0.01	<0.03 [1]	0.1 ug/L	-
Benzo [a] anthracene	0.01 ug/L	<0.01	<0.01	<0.01	<0.03 [1]	0.2 ug/L	-
Benzo [a] pyrene	0.01 ug/L	<0.01	<0.01	<0.01	<0.03 [1]	0.01 ug/L	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	0.1 ug/L	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	0.2 ug/L	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	0.1 ug/L	-
Chrysene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	0.1 ug/L	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	0.2 ug/L	-
Fluoranthene	0.01 ug/L	<0.01	<0.01	<0.01	<0.03 [1]	0.4 ug/L	-
Fluorene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	120 ug/L	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	0.2 ug/L	-
1-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	2 ug/L	-
2-Methylnaphthalene	0.05 ug/L	<0.05	<0.05	<0.05	<0.14 [1]	2 ug/L	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	<0.10	<0.10	<0.28 [1]	2 ug/L	-
Naphthalene	0.05 ug/L	3.50	<0.05	<0.05	<0.14 [1]	7 ug/L	-
Phenanthrene	0.05 ug/L	0.10	<0.05	<0.05	<0.14 [1]	0.1 ug/L	-
Pyrene	0.01 ug/L	<0.01	<0.01	<0.01	<0.03 [1]	0.2 ug/L	-
2-Fluorobiphenyl	Surrogate	85.4%	81.6%	89.7%	83.0% [1]	-	-
Terphenyl-d14	Surrogate	104%	97.2%	108%	103% [1]	-	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW101-20	DUP A	DUP B	Trip Blank	**Criteria:**	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	28-Mar-23 11:30	**Reg 153/04 -T1 Groundwater**	-
	Sample ID:	2314190-15	2314190-17	2314190-18	2314190-19		
	Matrix:	Ground Water	Ground Water	Ground Water	Water		
	MDL/Units						
General Inorganics							
Cyanide, free	2 ug/L	<2	-	-	-	5 ug/L	-
pH	0.1 pH Units	7.1	-	-	-	5.00 - 9.00 pH Units	-
Anions							
Chloride	1.0 mg/L	16.5	-	-	-	790000 ug/L	-
Metals							
Mercury	0.1 ug/L	<0.1	-	-	-	0.1 ug/L	-
Antimony	0.5 ug/L	<0.5	-	-	-	1.5 ug/L	-
Arsenic	1.0 ug/L	<1.0	-	-	-	13 ug/L	-
Barium	1.0 ug/L	244	-	-	-	610 ug/L	-
Beryllium	0.5 ug/L	<0.5	-	-	-	0.5 ug/L	-
Boron	10.0 ug/L	383	-	-	-	1700 ug/L	-
Cadmium	0.2 ug/L	<0.2	-	-	-	0.5 ug/L	-
Chromium	1.0 ug/L	<1.0	-	-	-	11 ug/L	-
Chromium (VI)	10 ug/L	<10	-	-	-	25 ug/L	-
Cobalt	0.5 ug/L	<0.5	-	-	-	3.8 ug/L	-
Copper	0.5 ug/L	<0.5	-	-	-	5 ug/L	-
Lead	0.2 ug/L	<0.2	-	-	-	1.9 ug/L	-
Molybdenum	0.5 ug/L	<0.5	-	-	-	23 ug/L	-
Nickel	1.0 ug/L	<1.0	-	-	-	14 ug/L	-
Selenium	1.0 ug/L	<1.0	-	-	-	5 ug/L	-
Silver	0.2 ug/L	<0.2	-	-	-	0.3 ug/L	-
Sodium	200 ug/L	14000	-	-	-	490000 ug/L	-
Thallium	0.5 ug/L	<0.5	-	-	-	0.5 ug/L	-
Uranium	0.2 ug/L	<0.2	-	-	-	8.9 ug/L	-
Vanadium	0.5 ug/L	<0.5	-	-	-	3.9 ug/L	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW101-20	DUP A	DUP B	Trip Blank	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	28-Mar-23 11:30	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-15	2314190-17	2314190-18	2314190-19		
	Matrix:	Ground Water	Ground Water	Ground Water	Water		
	MDL/Units						
Metals							
Zinc	5.0 ug/L	<5.0	-	-	-	160 ug/L	-
Volatiles							
Acetone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	2700 ug/L	-
Benzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Bromodichloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Bromoform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	5 ug/L	-
Bromomethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.89 ug/L	-
Carbon Tetrachloride	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.2 ug/L	-
Chlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Chloroform	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Dibromochloromethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	2 ug/L	-
Dichlorodifluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	590 ug/L	-
1,2-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,3-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,4-Dichlorobenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,2-Dichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
cis-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.6 ug/L	-
trans-1,2-Dichloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.6 ug/L	-
1,2-Dichloropropane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
cis-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-Dichloropropylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
1,3-Dichloropropene, total	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW101-20	DUP A	DUP B	Trip Blank	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	28-Mar-23 11:30	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-15	2314190-17	2314190-18	2314190-19		
	Matrix:	Ground Water	Ground Water	Ground Water	Water		
	MDL/Units						
Volatiles							
Ethylene dibromide (dibromoethane,	0.2 ug/L	<0.2	<0.2	<0.2	<0.2	0.2 ug/L	-
Hexane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	5 ug/L	-
Methyl Ethyl Ketone (2-Butanone)	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	400 ug/L	-
Methyl Isobutyl Ketone	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	640 ug/L	-
Methyl tert-butyl ether	2.0 ug/L	<2.0	<2.0	<2.0	<2.0	15 ug/L	-
Methylene Chloride	5.0 ug/L	<5.0	<5.0	<5.0	<5.0	5 ug/L	-
Styrene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1,1,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	1.1 ug/L	-
1,1,2,2-Tetrachloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Tetrachloroethylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.8 ug/L	-
1,1,1-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
1,1,2-Trichloroethane	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
Trichloroethylene	0.5 ug/L	<0.5	7.8	3.9	<0.5	0.5 ug/L	-
Trichlorofluoromethane	1.0 ug/L	<1.0	<1.0	<1.0	<1.0	150 ug/L	-
Vinyl chloride	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	0.5 ug/L	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	<0.5	-	-
Xylenes, total	0.05 ug/L	<0.5	<0.5	<0.5	<0.5	72 ug/L	-
4-Bromofluorobenzene	Surrogate	108%	110%	109%	108%	-	-
Toluene-d8	Surrogate	104%	105%	105%	103%	-	-
Dibromofluoromethane	Surrogate	74.6%	81.2%	84.0%	86.3%	-	-
Hydrocarbons							
F1 PHCs (C6-C10)	25 ug/L	<25	-	-	-	420 ug/L	-
F2 PHCs (C10-C16)	100 ug/L	<100	-	-	-	150 ug/L	-

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

	Client ID:	MW101-20	DUP A	DUP B	Trip Blank	Criteria:	
	Sample Date:	04-Apr-23 09:00	04-Apr-23 09:00	04-Apr-23 09:00	28-Mar-23 11:30	Reg 153/04 -T1 Groundwater	-
	Sample ID:	2314190-15	2314190-17	2314190-18	2314190-19		
	Matrix:	Ground Water	Ground Water	Ground Water	Water		
	MDL/Units						
Hydrocarbons							
F3 PHCs (C16-C34)	100 ug/L	<100	-	-	-	500 ug/L	-
F4 PHCs (C34-C50)	100 ug/L	<100	-	-	-	500 ug/L	-
Semi-Volatiles							
Acenaphthene	0.05 ug/L	<0.05	-	-	-	4.1 ug/L	-
Acenaphthylene	0.05 ug/L	<0.05	-	-	-	1 ug/L	-
Anthracene	0.01 ug/L	<0.01	-	-	-	0.1 ug/L	-
Benzo [a] anthracene	0.01 ug/L	<0.01	-	-	-	0.2 ug/L	-
Benzo [a] pyrene	0.01 ug/L	<0.01	-	-	-	0.01 ug/L	-
Benzo [b] fluoranthene	0.05 ug/L	<0.05	-	-	-	0.1 ug/L	-
Benzo [g,h,i] perylene	0.05 ug/L	<0.05	-	-	-	0.2 ug/L	-
Benzo [k] fluoranthene	0.05 ug/L	<0.05	-	-	-	0.1 ug/L	-
Chrysene	0.05 ug/L	<0.05	-	-	-	0.1 ug/L	-
Dibenzo [a,h] anthracene	0.05 ug/L	<0.05	-	-	-	0.2 ug/L	-
Fluoranthene	0.01 ug/L	<0.01	-	-	-	0.4 ug/L	-
Fluorene	0.05 ug/L	<0.05	-	-	-	120 ug/L	-
Indeno [1,2,3-cd] pyrene	0.05 ug/L	<0.05	-	-	-	0.2 ug/L	-
1-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-	2 ug/L	-
2-Methylnaphthalene	0.05 ug/L	<0.05	-	-	-	2 ug/L	-
Methylnaphthalene (1&2)	0.10 ug/L	<0.10	-	-	-	2 ug/L	-
Naphthalene	0.05 ug/L	<0.05	-	-	-	7 ug/L	-
Phenanthrene	0.05 ug/L	<0.05	-	-	-	0.1 ug/L	-
Pyrene	0.01 ug/L	<0.01	-	-	-	0.2 ug/L	-
2-Fluorobiphenyl	Surrogate	88.9%	-	-	-	-	-
Terphenyl-d14	Surrogate	109%	-	-	-	-	-

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics								
Cyanide, free	ND	2	ug/L					
Hydrocarbons								
F1 PHCs (C6-C10)	ND	25	ug/L					
F2 PHCs (C10-C16)	ND	100	ug/L					
F3 PHCs (C16-C34)	ND	100	ug/L					
F4 PHCs (C34-C50)	ND	100	ug/L					
Metals								
Mercury	ND	0.1	ug/L					
Antimony	ND	0.5	ug/L					
Arsenic	ND	1.0	ug/L					
Barium	ND	1.0	ug/L					
Beryllium	ND	0.5	ug/L					
Boron	ND	10.0	ug/L					
Cadmium	ND	0.2	ug/L					
Chromium (VI)	ND	10	ug/L					
Chromium	ND	1.0	ug/L					
Cobalt	ND	0.5	ug/L					
Copper	ND	0.5	ug/L					
Lead	ND	0.2	ug/L					
Molybdenum	ND	0.5	ug/L					
Nickel	ND	1.0	ug/L					
Selenium	ND	1.0	ug/L					
Silver	ND	0.2	ug/L					
Sodium	ND	200	ug/L					
Thallium	ND	0.5	ug/L					
Uranium	ND	0.2	ug/L					
Vanadium	ND	0.5	ug/L					
Zinc	ND	5.0	ug/L					
Semi-Volatiles								
Acenaphthene	ND	0.05	ug/L					
Acenaphthylene	ND	0.05	ug/L					
Anthracene	ND	0.01	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzo [a] anthracene	ND	0.01	ug/L					
Benzo [a] pyrene	ND	0.01	ug/L					
Benzo [b] fluoranthene	ND	0.05	ug/L					
Benzo [g,h,i] perylene	ND	0.05	ug/L					
Benzo [k] fluoranthene	ND	0.05	ug/L					
Chrysene	ND	0.05	ug/L					
Dibenzo [a,h] anthracene	ND	0.05	ug/L					
Fluoranthene	ND	0.01	ug/L					
Fluorene	ND	0.05	ug/L					
Indeno [1,2,3-cd] pyrene	ND	0.05	ug/L					
1-Methylnaphthalene	ND	0.05	ug/L					
2-Methylnaphthalene	ND	0.05	ug/L					
Methylnaphthalene (1&2)	ND	0.10	ug/L					
Naphthalene	ND	0.05	ug/L					
Phenanthrene	ND	0.05	ug/L					
Pyrene	ND	0.01	ug/L					
Surrogate: 2-Fluorobiphenyl	*7.53*		*%*	*75.3*	*50-140*			
Surrogate: Terphenyl-d14	*11.1*		*%*	*111*	*50-140*			
Volatiles								
Acetone	ND	5.0	ug/L					
Benzene	ND	0.5	ug/L					
Bromodichloromethane	ND	0.5	ug/L					
Bromoform	ND	0.5	ug/L					
Bromomethane	ND	0.5	ug/L					
Carbon Tetrachloride	ND	0.2	ug/L					
Chlorobenzene	ND	0.5	ug/L					
Chloroform	ND	0.5	ug/L					
Dibromochloromethane	ND	0.5	ug/L					
Dichlorodifluoromethane	ND	1.0	ug/L					
1,2-Dichlorobenzene	ND	0.5	ug/L					
1,3-Dichlorobenzene	ND	0.5	ug/L					
1,4-Dichlorobenzene	ND	0.5	ug/L					

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethane	ND	0.5	ug/L					
1,2-Dichloroethane	ND	0.5	ug/L					
1,1-Dichloroethylene	ND	0.5	ug/L					
cis-1,2-Dichloroethylene	ND	0.5	ug/L					
trans-1,2-Dichloroethylene	ND	0.5	ug/L					
1,2-Dichloropropane	ND	0.5	ug/L					
cis-1,3-Dichloropropylene	ND	0.5	ug/L					
trans-1,3-Dichloropropylene	ND	0.5	ug/L					
1,3-Dichloropropene, total	ND	0.5	ug/L					
Ethylbenzene	ND	0.5	ug/L					
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L					
Hexane	ND	1.0	ug/L					
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L					
Methyl Isobutyl Ketone	ND	5.0	ug/L					
Methyl tert-butyl ether	ND	2.0	ug/L					
Methylene Chloride	ND	5.0	ug/L					
Styrene	ND	0.5	ug/L					
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L					
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L					
Tetrachloroethylene	ND	0.5	ug/L					
Toluene	ND	0.5	ug/L					
1,1,1-Trichloroethane	ND	0.5	ug/L					
1,1,2-Trichloroethane	ND	0.5	ug/L					
Trichloroethylene	ND	0.5	ug/L					
Trichlorofluoromethane	ND	1.0	ug/L					
Vinyl chloride	ND	0.5	ug/L					
m,p-Xylenes	ND	0.5	ug/L					
o-Xylene	ND	0.5	ug/L					
Xylenes, total	ND	0.5	ug/L					
Surrogate: 4-Bromofluorobenzene	*87.4*		*%*	*109*	*50-140*			
Surrogate: Dibromofluoromethane	*66.5*		*%*	*83.1*	*50-140*			
Surrogate: Toluene-d8	*82.9*		*%*	*104*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	15.4	1.0	mg/L	15.4			0.1	10	
General Inorganics									
Cyanide, free	ND	2	ug/L	ND			NC	20	
pH	7.1	0.1	pH Units	7.1			0.4	10	
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND			NC	30	
Metals									
Mercury	ND	0.1	ug/L	ND			NC	20	
Antimony	1.1	0.5	ug/L	ND			NC	20	
Arsenic	ND	1.0	ug/L	ND			NC	20	
Barium	64.1	1.0	ug/L	64.9			1.1	20	
Beryllium	ND	0.5	ug/L	ND			NC	20	
Boron	178	100	ug/L	184			3.0	20	
Cadmium	ND	0.2	ug/L	ND			NC	20	
Chromium (VI)	ND	10	ug/L	ND			NC	20	
Chromium	ND	1.0	ug/L	ND			NC	20	
Cobalt	ND	0.5	ug/L	ND			NC	20	
Copper	1.3	0.5	ug/L	2.9			NC	20	
Lead	0.9	0.2	ug/L	ND			NC	20	
Molybdenum	ND	0.5	ug/L	ND			NC	20	
Nickel	1.7	1.0	ug/L	1.8			7.0	20	
Selenium	ND	1.0	ug/L	ND			NC	20	
Silver	ND	0.2	ug/L	ND			NC	20	
Sodium	77000	2000	ug/L	79800			3.6	20	
Thallium	0.9	0.5	ug/L	ND			NC	20	
Uranium	23.7	0.2	ug/L	22.4			5.8	20	
Vanadium	0.5	0.5	ug/L	ND			NC	20	
Zinc	ND	5.0	ug/L	ND			NC	20	
Volatiles									
Acetone	ND	5.0	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Benzene	ND	0.5	ug/L	ND			NC	30	
Bromodichloromethane	1.50	0.5	ug/L	1.56			3.9	30	
Bromoform	ND	0.5	ug/L	ND			NC	30	
Bromomethane	ND	0.5	ug/L	ND			NC	30	
Carbon Tetrachloride	ND	0.2	ug/L	ND			NC	30	
Chlorobenzene	ND	0.5	ug/L	ND			NC	30	
Chloroform	1.52	0.5	ug/L	1.39			8.9	30	
Dibromochloromethane	0.56	0.5	ug/L	0.67			17.9	30	
Dichlorodifluoromethane	ND	1.0	ug/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.5	ug/L	ND			NC	30	
1,2-Dichloropropane	ND	0.5	ug/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.5	ug/L	ND			NC	30	
Ethylbenzene	ND	0.5	ug/L	ND			NC	30	
Ethylene dibromide (dibromoethane, 1,2-)	ND	0.2	ug/L	ND			NC	30	
Hexane	ND	1.0	ug/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	5.0	ug/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	5.0	ug/L	ND			NC	30	
Methyl tert-butyl ether	ND	2.0	ug/L	ND			NC	30	
Methylene Chloride	ND	5.0	ug/L	ND			NC	30	
Styrene	ND	0.5	ug/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L	ND			NC	30	
Tetrachloroethylene	ND	0.5	ug/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Toluene	ND	0.5	ug/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.5	ug/L	ND			NC	30	
Trichloroethylene	4.47	0.5	ug/L	4.62			3.3	30	
Trichlorofluoromethane	ND	1.0	ug/L	ND			NC	30	
Vinyl chloride	ND	0.5	ug/L	ND			NC	30	
m,p-Xylenes	ND	0.5	ug/L	ND			NC	30	
o-Xylene	ND	0.5	ug/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*86.6*		*%*		*108*	*50-140*			
Surrogate: Dibromofluoromethane	*74.3*		*%*		*92.8*	*50-140*			
Surrogate: Toluene-d8	*82.6*		*%*		*103*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	26.5	1.0	mg/L	15.4	110	77-123			
General Inorganics									
Cyanide, free	22.7	2	ug/L	ND	101	70-130			
Hydrocarbons									
F1 PHCs (C6-C10)	577	25	ug/L	ND	94.9	68-117			
F2 PHCs (C10-C16)	1220	100	ug/L	ND	73.7	60-140			
F3 PHCs (C16-C34)	4200	100	ug/L	ND	113	60-140			
F4 PHCs (C34-C50)	2920	100	ug/L	ND	109	60-140			
Metals									
Mercury	2.92	0.1	ug/L	ND	97.4	70-130			
Antimony	44.0	0.5	ug/L	ND	88.0	70-130			
Arsenic	52.4	1.0	ug/L	ND	105	70-130			
Barium	111	1.0	ug/L	64.9	92.8	70-130			
Beryllium	44.2	0.5	ug/L	ND	88.4	70-130			
Boron	54.9	10.0	ug/L	ND	110	80-120			
Cadmium	45.8	0.2	ug/L	ND	91.7	70-130			
Chromium (VI)	199	10	ug/L	ND	99.5	70-130			
Chromium	49.3	1.0	ug/L	ND	98.6	70-130			
Cobalt	47.0	0.5	ug/L	ND	93.9	70-130			
Copper	47.3	0.5	ug/L	2.9	88.7	70-130			
Lead	40.9	0.2	ug/L	ND	81.9	70-130			
Molybdenum	49.2	0.5	ug/L	ND	98.5	70-130			
Nickel	47.8	1.0	ug/L	1.8	92.0	70-130			
Selenium	59.6	1.0	ug/L	ND	119	70-130			
Silver	39.6	0.2	ug/L	ND	79.2	70-130			
Sodium	913	200	ug/L	ND	91.3	80-120			
Thallium	43.5	0.5	ug/L	ND	86.9	70-130			
Uranium	70.3	0.2	ug/L	22.4	95.8	70-130			
Vanadium	50.5	0.5	ug/L	ND	101	70-130			
Zinc	58.5	5.0	ug/L	ND	117	70-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Semi-Volatiles									
Acenaphthene	9.61	0.05	ug/L	ND	96.1	50-140			
Acenaphthylene	9.86	0.05	ug/L	ND	98.6	50-140			
Anthracene	11.9	0.01	ug/L	ND	119	50-140			
Benzo [a] anthracene	12.7	0.01	ug/L	ND	127	50-140			
Benzo [a] pyrene	11.4	0.01	ug/L	ND	114	50-140			
Benzo [b] fluoranthene	12.1	0.05	ug/L	ND	121	50-140			
Benzo [g,h,i] perylene	11.8	0.05	ug/L	ND	118	50-140			
Benzo [k] fluoranthene	12.5	0.05	ug/L	ND	125	50-140			
Chrysene	13.0	0.05	ug/L	ND	130	50-140			
Dibenzo [a,h] anthracene	12.0	0.05	ug/L	ND	120	50-140			
Fluoranthene	12.6	0.01	ug/L	ND	126	50-140			
Fluorene	11.0	0.05	ug/L	ND	110	50-140			
Indeno [1,2,3-cd] pyrene	12.6	0.05	ug/L	ND	126	50-140			
1-Methylnaphthalene	8.48	0.05	ug/L	ND	84.8	50-140			
2-Methylnaphthalene	8.40	0.05	ug/L	ND	84.0	50-140			
Naphthalene	8.43	0.05	ug/L	ND	84.3	50-140			
Phenanthrene	11.8	0.05	ug/L	ND	118	50-140			
Pyrene	13.3	0.01	ug/L	ND	133	50-140			
Surrogate: 2-Fluorobiphenyl	*7.89*		*%*		*78.9*	*50-140*			
Surrogate: Terphenyl-d14	*9.45*		*%*		*94.5*	*50-140*			
Volatiles									
Acetone	113	5.0	ug/L	ND	113	50-140			
Benzene	43.3	0.5	ug/L	ND	108	50-140			
Bromodichloromethane	44.7	0.5	ug/L	ND	112	50-140			
Bromoform	51.4	0.5	ug/L	ND	129	50-140			
Bromomethane	35.3	0.5	ug/L	ND	88.2	50-140			
Carbon Tetrachloride	43.1	0.2	ug/L	ND	108	50-140			
Chlorobenzene	45.8	0.5	ug/L	ND	115	50-140			
Chloroform	46.1	0.5	ug/L	ND	115	50-140			
Dibromochloromethane	49.2	0.5	ug/L	ND	123	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Dichlorodifluoromethane	30.4	1.0	ug/L	ND	76.1	50-140			
1,2-Dichlorobenzene	46.2	0.5	ug/L	ND	116	50-140			
1,3-Dichlorobenzene	48.4	0.5	ug/L	ND	121	50-140			
1,4-Dichlorobenzene	49.2	0.5	ug/L	ND	123	50-140			
1,1-Dichloroethane	40.6	0.5	ug/L	ND	101	50-140			
1,2-Dichloroethane	43.8	0.5	ug/L	ND	109	50-140			
1,1-Dichloroethylene	35.8	0.5	ug/L	ND	89.5	50-140			
cis-1,2-Dichloroethylene	42.1	0.5	ug/L	ND	105	50-140			
trans-1,2-Dichloroethylene	40.1	0.5	ug/L	ND	100	50-140			
1,2-Dichloropropane	45.2	0.5	ug/L	ND	113	50-140			
cis-1,3-Dichloropropylene	46.1	0.5	ug/L	ND	115	50-140			
trans-1,3-Dichloropropylene	50.8	0.5	ug/L	ND	127	50-140			
Ethylbenzene	43.5	0.5	ug/L	ND	109	50-140			
Ethylene dibromide (dibromoethane, 1,2-)	49.6	0.2	ug/L	ND	124	50-140			
Hexane	53.8	1.0	ug/L	ND	134	50-140			
Methyl Ethyl Ketone (2-Butanone)	130	5.0	ug/L	ND	130	50-140			
Methyl Isobutyl Ketone	137	5.0	ug/L	ND	137	50-140			
Methyl tert-butyl ether	123	2.0	ug/L	ND	121	50-140			
Methylene Chloride	35.4	5.0	ug/L	ND	88.6	50-140			
Styrene	44.0	0.5	ug/L	ND	110	50-140			
1,1,1,2-Tetrachloroethane	48.8	0.5	ug/L	ND	122	50-140			
1,1,2,2-Tetrachloroethane	50.5	0.5	ug/L	ND	126	50-140			
Tetrachloroethylene	52.5	0.5	ug/L	ND	131	50-140			
Toluene	46.3	0.5	ug/L	ND	116	50-140			
1,1,1-Trichloroethane	44.5	0.5	ug/L	ND	111	50-140			
1,1,2-Trichloroethane	46.7	0.5	ug/L	ND	117	50-140			
Trichloroethylene	46.7	0.5	ug/L	7.83	97.2	50-140			
Trichlorofluoromethane	32.3	1.0	ug/L	ND	80.8	50-140			
Vinyl chloride	28.3	0.5	ug/L	ND	70.3	50-140			
m,p-Xylenes	80.6	0.5	ug/L	ND	101	50-140			
o-Xylene	41.6	0.5	ug/L	ND	104	50-140			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Surrogate: 4-Bromofluorobenzene	*90.2*		*%*		*113*	*50-140*			
Surrogate: Dibromofluoromethane	*86.3*		*%*		*108*	*50-140*			
Surrogate: Toluene-d8	*79.6*		*%*		*99.5*	*50-140*			

Qualifier Notes:

Login Qualifiers :

Sample - Filtered and preserved by Paracel upon receipt at the laboratory - Metals, Cr6+

Applies to Samples: MW111-20

Sample - Received with >5% sediment, directed by client to decant and analyze without sediment

Applies to Samples: MW111-20

Sample Qualifiers :

1: Elevated Reporting Limits due to limited sample volume.

QC Qualifiers:

Sample Data Revisions:

None

Certificate of Analysis

Report Date: 11-Jan-2024

Client: **Landtek Limited**

Order Date: 4-Apr-2023

Client PO:

Project Description: 21263

Work Order Revisions / Comments:

REVISION 1 - This report includes a revised sample ID as per the COC.

REVISION 2 - This report includes an updated sample list 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

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.

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Paracel ID: 2314190

Chain Of Custody
(Lab Use Only)

№ 141304

Page 1 of 2

Client Name: Landtek	Project Ref: 21263	Turnaround Time
Contact Name: Lauren Blair	Quote #:	☐ 1 day ☐ 3 day
Address: 205 Nebo Rd, Hamilton	PO #:	☐ 2 day ☒ Regular
Telephone:	E-mail: nicole@landtek.ca lauren@landtek.ca	Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm Mun: ☐ Other:

☒ Table 1 ☒ Res/Park ☐ Med/Fine ☐ Table 2 ☐ Ind/Comm ☒ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table

For RSC: ☒ Yes ☐ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals (and Inorganics)	Hg	CrVI	B (HWS)
1	MW102-S	GW		9	April 4		X	X	X	X	X	X	X
2	MW102-D						X	X	X	X	X	X	X
3	MW103						X	X	X	X	X	X	X
4	MW106						X	X	X	X	X	X	✓
5	MW119-20						X	X	X	X	X	X	X
6	MW118-20						X	X	X	X	X	X	X
7	MW117-20						X	X	X	X	X	X	✓
8	MW4-23						X	X	X	X	X	X	X
9	MW120-S						X	X	X	X	X	X	X
10	MW120-D						X	X	X	X	X	X	✓

Comments: MW103 high sediment

Method of Delivery: Walk In

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: C-Ply	Verified By: C-Ply
Relinquished By (Print): Lauren Blair	Date/Time:	Date/Time: 04/04/23 16:46	Date/Time: 04/05/23 9:20
Date/Time: April 4, 2023	Temperature: °C	Temperature: 13.1 °C	pH Verified: ☑ By: CP

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Paracel ID: 2314190

Chain Of Custody
(Lab Use Only)
№ 141380

Client Name: Landtek	Project Ref: 21263	Page 2 of 2
Contact Name: Lauren Blair	Quote #:	Turnaround Time
Address: 205 Nebo Rd, Hamilton	PO #:	☐ 1 day ☐ 3 day
	E-mail: nicole@landtekca lauren@landtekca	☐ 2 day ☒ Regular
Telephone:		Date Required:

☒ REG 153/04 ☐ REG 406/19

Other Regulation: ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm ☐ Mun: ☐ Other:

☒ Table 1 ☒ Res/Park ☐ Med/Fine ☐ Table 2 ☐ Ind/Comm ☒ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table ___

For RSC: ☒ Yes ☐ No

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analysis

	Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken Date	Sample Taken Time	PHCs F1-F4+BTEX	VOCs	PAHs	Metals and inorganics	Hg	CrVI	B (HWS)
1	MW121-S	GW		9	April 4		X	✓	X	X	X	X	✓
2	MW121-D	↓		↓	↓		X	✓	X	X	X	X	✓
3	MW111-20						X	✓	X	X	X	X	✓
4	MW1D-23						X	✓	X	X	X	X	✓
5	MW101-20						X	✓	X	X	X	X	✓
6	MW122D-23			✓			X	X	X	X	X	X	X
7	Dup A			2				X					
8	Dup B	↓		2	↓			X					
9	Trip Blank	O		1				X					
10													

Comments: MW111-20 high sediment

Method of Delivery: Walk In

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: C—Ply	Verified By:
Relinquished By (Print): Lauren Blair	Date/Time:	Date/Time: 04/04/23 16:46	Date/Time:
Date/Time: April 4, 2023	Temperature: °C	Temperature: 13.1 °C	pH Verified: ✓ By: CP

Chain of Custody (Env) xlsx

Revision 4.0