# Phase 2 Ground Investigation

Park Gerry at Park Rd, Camborne, TR14 8QB

**28 February 2024**

Wheal Jane Consultancy

Old Mine Offices, Wheal Jane, Baldhu, Truro, Cornwall, TR3 6EE

01872 560200

www.wheal-jane-consultancy.co.uk

consultancy@wheal-jane.co.uk

SI21655/PH2

# DOCUMENT CONTROL SHEET

| | |
|---|---|
| **Client** | Mei Loci |
| **Project Title** | Park Gerry at Park Rd, Camborne, TR14 8QB |
| **Document Title** | Phase 2 Site Investigation |
| **Document No.** | SI21655/PH2 |

| Date | Status | Revision | Prepared By | Approved By |
|---|---|---|---|---|
| 28 February 2024 | Final | 1 | TG/SLW/MV | WJC |

# CONTENTS

**FIGURES**



**APPENDICES**



**TABLES**

# EXECUTIVE SUMMARY


| Objectives | |
|---|---|
| Wheal Jane Consultancy was commissioned by Mei Loci to undertake an intrusive investigation on the site of a recreational development | |
| **Site Investigation** | |
| **Previous Investigations** | A phase 1 environmental risk assessment was undertaken by Wheal Jane Consultancy in November 2022.<br>A phase 2 ground investigation was undertaken by Wheal Jane Consultancy in June 2023. |
| **Site Works** | Samples were taken during an intrusive investigation from 6no. windowless sampling (WS) boreholes during the first site investigation (Site Visit 1) and from 6no. hand excavated trial pits (Site Visit 2). |
| **Ground Conditions** | Full ground profiles were obtained, showing topsoil overlaying cohesive weathered Mylor Slate Formation. |
| **Water** | Water was encountered during the site investigation in exploratory hole WS03 at a depth of 4.50mBGL. However, due to the extensive mine workings in the area lowering the water table, this is considered likely to be a small area of perched water. |

**Conclusions**

- The site was subject to a Phase 2 Ground Investigation to determine the level and risk of potential contamination.
- It can be concluded that arsenic levels within WS02 and HP01, in the northwestern corner of the site, present an unacceptable level of risk and targeted remediation will be required in this area of the site.
- Following favourable bioaccessibility testing, all other potential contaminants, including heavy metals, hydrocarbons, and ground gasses, across the remainder of the site, are within acceptable levels.
- Due to the contamination being present within a single area of the site, it is highly likely that a zoned remediation strategy, targeted specifically in the far extent of the northwestern corner of the site will be suitable.
- The site is likely to be suitable for its intended use, as long as the recommendations set out in this report are adhered to.

**Recommendations**

- A Phase 3 Remediation Strategy Report should be compiled which outlines the scope of remedial works required to reduce the level of contamination to such condition that the site can be deemed suitable for its proposed residential use.
- It is likely that a zoned remediation strategy localised within the far northwestern extent of the site will be suitable for the proposed development.
- Once the remediation strategy has been fully implemented and the work concluded to the required specifications, a Phase 4 Verification Report and Certificate must be produced.
- A flow chart detailing the phased approach to land contamination, as set out in CLR11, is contained to the rear of the report.

- The site is situated in an area where greater than 30% of the properties are above the action level. As the site is open-air, risk from radon build-up can be considered lower, however any enclosed structure on site will require full radon protection measures.
- Suitable safety measures should be taken by those working on site to mitigate the risks associated with contaminated media including undertaking the appropriate risk assessments and ensuring all workers are wearing the correct PPE.
- Waste removed from site shall be disposed of at a suitable facility with the appropriate Waste Transfer Notices obtained for future records. Asbestos waste should be handled by a suitable waste contractor.

# 1 INTRODUCTION

## 1.1 Instruction

1.1.1 Wheal Jane Consultancy (WJC) was commissioned by Mei Loci, to undertake a Phase 2 Ground Investigation at a site known as Park Gerry at Park Rd, Camborne, TR14 8QB.

1.1.2 This report has been prepared by Wheal Jane Consultancy solely for the benefit of the client. It shall not be relied upon or transferred to any third party without the prior written authorisation of WJC.

## 1.2 Scope and Objectives

1.2.1 The objective of the initial investigation is to quantify any land contamination based on in-situ data collected from the actual site which will then be interpreted and evaluated.

1.2.2 The objective of the second site investigation is to further delineate and constrain the area of the site which may require remediation.

1.2.3 This investigation was developed to target the possible contamination related to the site's historic use and/or natural geology.

1.2.4 The objective of this investigation is also to evaluate the geotechnical parameters of the sub-surface material in order to aid foundation design.

1.2.5 The conclusions and recommendations of this report are valid for a period of 12 months from the date of issue. Outside of this time frame the report will require reviewing by a suitably qualified geoenvironmental engineer / environmental scientist, to ensure that the report complies with any changes to industry standards, policies and/or guidelines.

1.2.6 It is recommended that a copy of this report be submitted to the local authority for checking, prior to commissioning any further work which may be required.

1.2.7 This assessment has been undertaken with guidance from BS10175:2011 and Environment Agency report CLR11, and as such represents a Phase 2 Ground Investigation.

## 1.3 Limitations

1.3.1 Field work consisted of discrete sampling across the site, to assess the character and degree of contamination. Conditions of the ground at locations not included within the investigation may be different from the tested locations.

1.3.2 This report considers site conditions at the time of the ground investigation, but ground conditions may change with time. If future work discovers ground conditions that vary

significantly from the findings available in this report, the conclusions should be reviewed in the context of the new information.

1.3.3 Findings were assessed in the context of standards and methodology current at the time of reporting.

1.3.4 The findings and conclusions in this report are based upon information derived from a variety of sources. WJC cannot accept liability for the accuracy or completeness of any information derived from third party sources.

# 2 THE SITE

## 2.1 Site Location and Layout

2.1.1 The site is located approximately 1.10 km South-West of the Camborne (East) A30 junction. The site is situated within Camborne town. The site is approximately centred on National Grid Reference SX 165280 40640.

2.1.2 The site is irregular in shape and covers an area of 3.79 ha.

2.1.3 A site location plan (SLP) is contained in Figure 2.1, to the rear of the report.

2.1.4 The current site plan is contained in Figure 2.2, to the rear of the report.

## 2.2 Surrounding area

| Direction | Land Use |
|---|---|
| North | Residential |
| East | Residential |
| South | Residential |
| West | Residential |

## 2.3 Proposed Development

2.3.1 It is proposed to redevelop the public park extensively, adding areas to play sports, a skate park, flower beds, and pathways. For more information see PA22/00625/PREAPP.

2.3.2 The proposed site plan is contained in Figure 2.3, to the rear of the report.

# 3 SITE INVESTIGATION

## 3.1 Phase 1 Findings

3.1.1 A Phase 1 Desk Study was undertaken by Wheal Jane Consultancy in November 2022 (Ref: 21441/PH1; dated 15/11/2022).

3.1.2 The risks identified in the desk study were summarised within the Conceptual Site Model (CSM). It was concluded that an investigation would be required involving soil sampling and testing; focussing specifically on heavy metals, hydrocarbons, and ground gasses.

## 3.2 Site Works

3.2.1 Two intrusive site investigations were conducted on 29/06/23 (Site Visit 1), and 30/01/2024 (Site Visit 2). The investigations were overseen by geoenvironmental engineers from Wheal Jane Consultancy.

3.2.2 The following table summarises the intrusive investigation techniques employed during the site investigation in June 2023:

**Table 3.1:** Site Works June 2023

| Exploratory Hole Type | Exploratory Hole ID | Hole Depths (mBGL) | Comments |
|---|---|---|---|
| Windowless Sample Borehole | WS01 – WS06 | 1.50 – 5.00 | Undertaken for site coverage. |
| Dynamic Probe | DP01 – DP02 | DP01 – DP02 | To determine depth to Bedrock. |

3.2.3 The following table summarises the intrusive investigation techniques employed during the site investigation in January 2024;

**Table 3.2:** Site Works January 2024

| Exploratory Hole Type | Exploratory Hole ID | Hole Depths (mBGL) | Comments |
|---|---|---|---|
| Hand Excavated Trial Pit | HP01 – HP06 | 0.75 – 1.20 | Undertaken to further constrain areas of contamination on site. |

3.2.4 Exploratory hole logs are included as Appendix A.

3.2.5 A plan showing the location of the exploratory holes is provided as Figure 3.1.

## 3.3 Windowless Sample Boring

3.3.1 6no. Windowless Sample Boreholes, designated WS01 – WS06 were advanced to depths of between 1.50 – 5.00mBGL using a premier 110 windowless sampler on the 29/06/23. Standard Penetration Tests (SPTs) and representative soil samples were taken at regular intervals for environmental analysis and logged on site by a suitably qualified Geoenvironmental Engineer.

3.3.2 The locations of all exploratory holes can be seen on the exploratory hole location plan, contained as Figure 3.1.

## 3.4 Dynamic Probe

3.4.1 2no. Dynamic Probe tests, designated, DP01 – DP02 were advanced to depths of between 7.00 – 14.00mBGL using a premier 110 windowless sampler on the 29/06/23.

3.4.2 DP01 was advanced from the base of WS01 and DP02 was advanced from the base of WS05.

3.4.3 The locations of all exploratory holes can be seen on the exploratory hole location plan, contained as Figure 3.1.

## 3.5 Installations and Monitoring

3.5.1 Gas and groundwater monitoring standpipes were installed in the following exploratory holes in order to allow long term monitoring;

**Table 3.3:** Borehole Installations

| Exploratory Hole | Seal (mBGL) | Filter Zone (mBGL) |
|---|---|---|
| WS01 | 0 - 1.00 mBGL | 1.00 – 5.00 mBGL |
| WS03 | 0 - 1.00 mBGL | 1.00 – 5.00 mBGL |
| WS04 | 0 - 1.00 mBGL | 1.00 – 3.00 mBGL |

3.5.2 Gas and Groundwater monitoring commenced on the 05/07/23, with further visits on the 12/07/23, 19/07/23 and 26/07/23.

3.5.3 In addition to groundwater levels, the following parameters were measured and recorded using a G505363 ground gas meter:

- % Vol of; $O_2$, $H_2S$, $CO_2$, $CH_4$, CO,
- Flow Rate

- Flow equalisation time
- Barometric pressure (incl. trend)

3.5.1 The results are included as Appendix C.

## 3.6 Hand Excavated Trial Pitting

3.6.1 6no. Hand Excavated Trial Pits , designated, HP01 – HP06 were advanced to depths of between 0.75 – 1.20 mBGL using insulated hand tools on the 30/01/24.

3.6.2 The locations of all exploratory holes can be seen on the exploratory hole location plan, contained as Figure 3.1.

## 3.7 Chemical Sampling and Testing

3.7.1 The proposed end use of the site is recreational, and the subsequent data analysis will be conducted using this setting to test for levels of contaminants against generic assessment criteria.

3.7.2 The Phase 1 report highlighted heavy metals and hydrocarbons as the primary contaminants of concern. The sampling undertaken was designed to obtain site-wite representation.

3.7.3 All retrieved samples were logged in accordance with BS5930;2015 and BS EN ISO 14689. Collection of media for environmental testing was obtained, stored in plastic tubs and glass jars and kept within a temperature controlled cool box before being dispatched for testing.

3.7.4 Samples were taken during 'Site Visit 1' at varying depths and tested for potential contaminants including the following;

- Heavy Metals (As, B, Cd, Cr, Cu, Hg, Pb, Ni, Se, Zn)
- Sulphates
- Polyaromatic Hydrocarbons
- pH
- Total Petroleum Hydrocarbons

3.7.1 All samples were tested by a UKAS and MCERT accredited laboratory.

3.7.2 The results are included as Appendix C.

3.7.3 Samples were taken during 'Site Visit 2' at varying depths, and tested for potential contaminants including the following;

- Heavy Metals (As, B, Cd, Cr, Cu, Hg, Pb, Ni, Se, Zn)
- Sulphates
- Polyaromatic Hydrocarbons
- pH
- Total Petroleum Hydrocarbons

3.7.4 All samples were tested by a UKAS and MCERT accredited laboratory.

3.7.5 The results are included as Appendix C.

# 4 GROUND CONDITIONS

## 4.1 General

4.1.1 The BGS 1:50,000-scale bedrock geological map Sheet 352, Falmouth of the area shows the site to be underlain by the Mylor Slate Formation.

4.1.2 The following table represents a summary of the strata encountered beneath the site;

**Table 4.1:** Ground Conditions

| Strata | Depth Encountered (mBGL) | | Typical Thickness (m) | Brief Description & Comments |
|---|---|---|---|---|
| | From | To | | |
| Topsoil | 0 | 0.10 – 0.45 | 0.20 | Turf over light brown, clayey, silty, sandy, TOPSOIL. Sand is fine to coarse, frequent rootlets |
| Cohesive Weather Mylor Slate Formation | 0.10 – 0.45 | 1.50 – 5.00 | Unproven | Light orangish brown and mottled reddish brown, clayey becoming very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, f-c, of metasedimentary rock and quartz. Occasional rounded cobbles up to 7.5cm. |

## 4.2 Topsoil

4.2.1 Topsoil was encountered across the entirety of the site to depths of between 0.10 – 0.45mBGl.

4.2.2 The unit can be generally described as Turf over light brown, clayey, silty, sandy, TOPSOIL. Sand is fine to coarse, frequent rootlets.

## 4.3 Cohesive Weathered Mylor Slate Formation

4.3.1 Material described as cohesive weather Mylor Slate Formation was encountered across the site to depths of up to 5.00mBGL.

4.3.2 The unit may be generally described as Light orangish brown and mottled reddish brown, clayey becoming very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-

rounded, f-c, of metasedimentary rock and quartz. Occasional rounded cobbles up to 7.5cm.

4.3.3 Standard Penetration Tests (SPTs) were completed at regular intervals within the cohesive weathered Mylor Slate Formation can be summarised below:

**Table 4.2:** Standard Penetration Tests within the cohesive weathered Mylor Slate Formation.

| Depth (mBGL) | SPT 'N' Value | | |
|---|---|---|---|
| | Min | Max | Average |
| 1.00 | 8 | 13 | ***10.7*** |
| 2.00 | 8 | 84 | ***30.3*** |
| 3.00 | 9 | 61 | ***23.3*** |
| 4.00 | 4 | 14 | ***10*** |
| 5.00 | 8 | 26 | ***19.3*** |

## 4.4 Water

4.4.1 Water was encountered the following exploratory holes:

**Table 4.3:** Water Encountered

| Exploratory Hole | Water Level (mBGL) | Stratum |
|---|---|---|
| WS03 | 4.50 | Cohesive Weathered Mylor Slate Formation |

4.4.2 Due to the extensive mine workings in the area lowering the water table, this is considered likely to be a small area of perched water.

## 4.5 Contamination Indications

4.5.1 There were no visual or olfactory signs of contamination noted on site.

# 5 GEOTECHNICAL ASSESSMENT

## 5.1 Introduction

5.1.1 It is proposed to redevelop the public park extensively, adding areas to play sports, a skate park, flower beds, and pathways

5.1.2 At the time of writing this report, no definitive structural loads have been provided by the client.

## 5.2 Chemical Attack on Buried Concrete

5.2.1 Chemical testing indicates water soluble sulphate contents of 1.4- 55.9mg/l, with pH values of 6.0 -7.9.

5.2.2 Based on the above results the site may be classified as falling into the Design Sulphate Class DS-1. The Aggressive Chemical Environment for Concrete (ACEC) class is based upon the pH and mobility of groundwater. The results indicate that the soils on site fall into class AC-1s.

# 6 CONTAMINATION ASSESSMENT

## 6.1 Comparison with Generic Assessment Criteria (GACs) (Site Visit 1)

6.1.1 The laboratory results are contained as Appendix C.

6.1.2 Results from the environmental testing can be compared against Generic Assessment Criteria (GAC) to form the basis of a GQRA. The GAC's used are taken from the LQM/CIEH 'Suitable 4 Use Levels' publication. In the absence of a suitable S4UL value (such as Lead), reference has been made to DEFRA's Category 4 Screening Levels (C4SL) where deemed justifiable. Given the proposed land use for this site, the public park parameters have been chosen for the appropriate set of criteria. A comparison table can be found below.

*Table 6.1: Comparison of soil results against GAC's (Public Park 2.5% organic matter; based on the average value recorded – all values in mg/kg unless stated)*

| Contaminant | GAC's: S4UL's – Public Park (unless stated) | Minimum | Maximum | Exceedances |
|---|---|---|---|---|
| **Metals** | | | | |
| Arsenic | 170 | 3.2 | 13000 | **7** |
| Boron | 46000 | 0.3 | 1.1 | 0 |
| Cadmium | 560 | <0.2 | 0.4 | 0 |
| Chromium (III) | 33000 | 62 | 360 | 0 |
| Chromium (VI) | 220 | <1.8 | 14 | 0 |
| Copper | 44000 | 32 | 11000 | 0 |
| Lead | 1300 (C4SL) | 3 | 920 | 0 |
| Mercury (inorganic) | 240 | <0.3 | <0.3 | 0 |
| Nickel | 800 | 37 | 130 | 0 |
| Selenium | 1800 | <1.0 | <1.0 | 0 |
| Zinc | 170000 | 190 | 1500 | 0 |
| **General** | | | | |
| pH | N/A | 6 | 7.8 | - |
| Organic Matter % | N/A | 0.3 | 6.6 | - |

| | | | | |
|---|---|---|---|---|
| Sulphates (water soluble, g/l) | N/A | 0.056 | 0.1348 | - |
| Cyanide (total) | 23 (USEPA) | <1.0 | <1.0 | 0 |
| Phenols | 380 | <1.0 | <1.0 | 0 |
| **Organics** | | | | |
| **Polycyclic Aromatic Hydrocarbons (PAH, 16)** | | | | |
| Naphthalene | 1900 | <0.05 | <0.05 | 0 |
| Acenaphthylene | 30000 | <0.05 | 0.07 | 0 |
| Acenaphthene | 30000 | <0.05 | <0.05 | 0 |
| Fluorene | 20000 | <0.05 | <0.05 | 0 |
| Phenanthrene | 62000 | <0.05 | 0.55 | 0 |
| Anthracene | 150000 | <0.05 | 0.14 | 0 |
| Fluoranthene | 63000 | <0.05 | 1.7 | 0 |
| Pyrene | 15000 | <0.05 | 1.5 | 0 |
| Benzo(a)anthracene | 56 | <0.05 | 0.74 | 0 |
| Chrysene | 110 | <0.05 | 0.79 | 0 |
| Benzo(b)fluoranthene | 15 | <0.05 | 0.99 | 0 |
| Benzo(k)fluoranthene | 410 | <0.05 | 0.37 | 0 |
| Benzo(a)pyrene | 12 | <0.05 | 0.75 | 0 |
| Indeno (123-cd) pyrene | 170 | <0.05 | 0.5 | 0 |
| Dibenzo(ah)anthracene | 1.3 | <0.05 | 0.13 | 0 |
| Benzo(ghi)perylene | 15000 | <0.05 | 0.6 | 0 |
| **Total Petroleum Hydrocarbons (TPH)** | | | | |
| Benzene | 100 | <0.005 | <0.005 | 0 |
| Toluene | 95000 | <0.005 | <0.005 | 0 |
| Ethylbenzene | 22000 | <0.005 | <0.005 | 0 |
| o-xylene | 24000 | <0.005 | <0.005 | 0 |
| m & p-xylene | 24000 | <0.005 | <0.005 | 0 |
| Methyl Tertiary Butyl Ether (MTBE) (EIC/AGS/CL:AIRE) | 120 | <0.005 | <0.005 | 0 |

| | | | | |
|---|---|---|---|---|
| Aliphatic >C5-C6 | 130000 | < 0.10 | < 0.10 | 0 |
| Aliphatic >C6-C8 | 220000 | < 0.10 | < 0.10 | 0 |
| Aliphatic >C8-C10 | 18000 | < 0.10 | < 0.10 | 0 |
| Aliphatic >C10-C12 | 23000 | < 1.0 | < 1.0 | 0 |
| Aliphatic >C12-C16 | 25000 | < 2.0 | < 2.0 | 0 |
| Aliphatic >C16-C21 | 480000 | < 8.0 | < 8.0 | 0 |
| Aliphatic >C21-C35 | 480000 | < 8.0 | < 8.0 | 0 |
| Aromatic >C5-C7 | 84000 | < 0.10 | < 0.10 | 0 |
| Aromatic >C7-C8 | 95000 | < 0.10 | < 0.10 | 0 |
| Aromatic >C8-C10 | 8500 | < 0.10 | < 0.10 | 0 |
| Aromatic >C10-C12 | 9700 | < 1.0 | < 1.0 | 0 |
| Aromatic >C12-C16 | 10000 | < 2.0 | < 2.0 | 0 |
| Aromatic >C16-C21 | 7700 | < 10.0 | 16 | 0 |
| Aromatic >C21-C35 | 7800 | < 10.0 | 19 | 0 |

6.1.3 Soil pH values ranged from 6 to 7.9, with an average of 6.7.

6.1.4 Soil Organic Matter (SOM) testing was undertaken on 5no. samples. An average value of 4.22% was calculated, resulting in a value of 2.5% SOM being adopted for risk assessment purposes.

6.1.5 Elevated levels of arsenic were noted across the site. Exceedances were within all horizons encountered. A maximum arsenic level of 13000mg/kg was recorded in WS02 at 0.50 mBGL within the cohesive weathered Mylor Slate Formation.

6.1.6 The average soil concentrations for arsenic were entered into the CLEA software. This enabled the ratio of Average Daily Exposure to each contaminant with the relevant Health Criteria Value to be determined. This corresponded with the exceedances reported above when the soil guideline values were used. Site specific data was also entered into the software to model the conditions in a representative manner. Several land use categories are available within CLEA, the most appropriate in this case is the

residential with homegrown produce scenario. Values for average soil pH and soil organic matter were also included (6.7 and 2.5% respectively).

6.1.7 The bioaccessibility of arsenic was tested on samples from WS03 and WS04 at depths of 0.20 and 0.30 mBGL respectively. This type of testing shows the extent to which ingested contaminants are able to be absorbed by the body. The testing produced maximum bioaccessible fraction values of 0.8% for arsenic. The CLEA Software (Environment Agency) was then used to produce new site-specific assessment criteria for arsenic in the soil. The site-specific parameters listed below were entered into the software based on the plans and original site investigation.

6.1.8 **Table 6.2**: CLEA Software Inputs

| **CLEA Inputs** | |
|---|---|
| Land Use Setting | Public Open Space (Park) |
| Receptor | Female resident |
| Building | - |
| Soil Type | Sandy Loam |
| pH | 6.70% |
| Soil Organic Matter | 2.50% |
| Relative Bioaccessibility Arsenic | 0.80% |

6.1.9 A revised site-specific assessment criterion of 4600 mg/kg for arsenic in the soil was produced by the software. The average value for arsenic on site is 1244 mg/kg, which is

within the new the site-specific assessment criterion. However, a single exceedance in WS02, recording 13000 mg/kg of arsenic, is not mitigated.

6.1.10 No elevated levels of TPH were recorded.

6.1.11 No elevated levels of PAH were recorded.

## 6.2 Ground Gas Risk

6.2.1 To assess the risk posed by ground gases at the site 4no. rounds of gas monitoring were undertaken following the intrusive investigation at one-week intervals.

6.2.2 Concentrations of $CH_4$, $CO_2$, CO, $H_2S$ and $O_2$ were recorded using a G505363 gas extraction monitor.

6.2.3 The measured concentrations of potential ground gases (volume in air) and flow rates (l/hr) have been used to calculate Gas Screening Values (GSVs). These have also been compared to CIRIA Report 665.

6.2.4 It is recommended that the gas risk should be assessed by the consideration of pathways as follows:

- Future site users' exposure in open areas, including any, outbuildings or excavations for garden features.

6.2.5 The following table tabulates the ground gas parameters that have been recorded over 6nr rounds of gas monitoring. Full results are contained in Appendix C.

**Table 6.3:** Minimum and Maximum values taken from the 4no. gas monitoring visits.

| | Minimum | Maximum |
|---|---|---|
| Flow rate (l/hr) | 0.1 | 0.4 |
| $CH_4$ (%v/v) | ND | ND |
| $CO_2$ (%v/v) | 0.5 | 1.3 |
| CO (ppmv) | ND | 1 |
| $H_2S$ (%v/v) | ND | ND |
| $O_2$ (%v/v) | 19.3 | 20.6 |

6.2.6 The maximum concentrations observed at the site were used to calculate the Gas Screening Value using the formula:

6.2.7 GSV (l/hr) = concentration of gas (% v/v converted to decimal) * flow rate (l/hr)

6.2.8 Carbon dioxide: 0.013 * 0.10 = 0.0013/hr (where flow rate is recorded as zero use limit of detection)

6.2.9 No concentration was observed for methane or hydrogen sulphide.

6.2.10 A single detectable instance of Carbon Monoxide (CO) was recorded, at a level of 1ppm during the first round of gas monitoring in WS04. No further CO was detected in any other boreholes or during any future monitoring visits. It can therefore be concluded that CO levels are unlikely to pose a significant risk to site users.

6.2.11 The type of development proposed is residential and owing to the likely foundation design it is considered that Situation A should be used to assess the risk to the site, according to the CIRIA guidance document (C659, 'Assessing risks posed by hazardous ground gases to buildings'). A clear ventilated underfloor void is not likely to be included in the building plans. From the Gas Screening Value calculated, 0.0013l/hr, the site is classified as 'Characteristic Situation' 1 (CS1) (Very Low Risk) In Table 8.5 of CIRIA 665. Special protection measures are therefore not required for this development.

6.2.12 The alternative assessment method, Situation B, is for low rise developments with a ventilated underfloor void. Using the gas screening value obtained above and the typical maximum gas concentrations (methane and carbon dioxide) the site should be categorised as 'green'.

## 6.3 Comparison with Generic and Site-specific Assessment Criteria (Site Visit 2)

6.3.1 A second site visit was undertaken to further constrain the areas affected by contamination on site. The initial site investigation revealed a single instance of abnormally high concentrations of arsenic from within exploratory borehole WS02 in the

northwest region of the site that exceeded the Site-specific Assessment Criterion of 4600 mg/kg, generated by CLEA.

6.3.2 The sampling strategy for the second visit was designed to increase the sample density within the northwestern region of the site, in doing so further constraining the extent of the elevated arsenic concentrations.

6.3.3 The locations of all exploratory holes and adopted sampling strategies from 'Site Visit 1' and 'Site Visit 2' can be seen on the exploratory hole location plan, contained as Figure 3.1.

6.3.4 Results from the second round of environmental testing can be compared against Generic Assessment Criteria (GAC's) and the newly generated Site-specific Assessment Criteria (SAC's) to form the basis of a GQRA. The GAC's used are taken from the LQM/CIEH 'Suitable 4 Use Levels' publication. In the absence of a suitable S4UL value (such as Lead), reference has been made to DEFRA's Category 4 Screening Levels (C4SL) where deemed justifiable. Given the proposed land use for this site, the public park parameters have been chosen for the appropriate set of criteria. A comparison table can be found below.

6.3.5 The laboratory results are contained as Appendix C.

*Table 6.4: Comparison of soil results against GAC's and SAC's (Public Park 2.5% organic matter; based on the average value recorded – all values in mg/kg unless stated)*

| Contaminant | GAC's and SAC's: S4UL's – Public Park (unless stated) | Minimum | Maximum | Exceedances |
|---|---|---|---|---|
| **Metals** | | | | |
| Arsenic | 4600 (site-specific) | 17.0 | 5300 | **1** |
| Boron | 46000 | <0.2 | 0.9 | 0 |
| Cadmium | 560 | <0.2 | 1.8 | 0 |
| Chromium (III) | 33000 | 59 | 290 | 0 |
| Chromium (VI) | 220 | <1.8 | <1.8 | 0 |
| Copper | 44000 | 47 | 5000 | 0 |
| Lead | 1300 (C4SL) | 7.4 | 700 | 0 |
| Mercury (inorganic) | 240 | <0.3 | <0.3 | 0 |

| | | | | |
|---|---|---|---|---|
| Nickel | 800 | 23 | 140 | 0 |
| Selenium | 1800 | <1.0 | 2.10 | 0 |
| Zinc | 170000 | 160 | 1400 | 0 |
| **General** | | | | |
| pH | N/A | 7.1 | 7.9 | - |
| Organic Matter % | N/A | 0.3 | 6.6 | - |
| Sulphates (water soluble, g/l) | N/A | 5.04 | 7.03 | - |
| Cyanide (total) | 23 (USEPA) | <1.0 | <1.0 | 0 |
| Phenols | 380 | <1.0 | <1.0 | 0 |
| **Organics** | | | | |
| **Polycyclic Aromatic Hydrocarbons (PAH, 16)** | | | | |
| Naphthalene | 1900 | <0.05 | <0.05 | 0 |
| Acenaphthylene | 30000 | <0.05 | <0.05 | 0 |
| Acenaphthene | 30000 | <0.05 | <0.05 | 0 |
| Fluorene | 20000 | <0.05 | <0.05 | 0 |
| Phenanthrene | 62000 | <0.05 | <0.05 | 0 |
| Anthracene | 150000 | <0.05 | <0.05 | 0 |
| Fluoranthene | 63000 | <0.05 | <0.05 | 0 |
| Pyrene | 15000 | <0.05 | <0.05 | 0 |
| Benzo(a)anthracene | 56 | <0.05 | <0.05 | 0 |
| Chrysene | 110 | <0.05 | <0.05 | 0 |
| Benzo(b)fluoranthene | 15 | <0.05 | <0.05 | 0 |
| Benzo(k)fluoranthene | 410 | <0.05 | <0.05 | 0 |
| Benzo(a)pyrene | 12 | <0.05 | <0.05 | 0 |
| Indeno (123-cd) pyrene | 170 | <0.05 | <0.05 | 0 |
| Dibenzo(ah)anthracene | 1.3 | <0.05 | <0.05 | 0 |
| Benzo(ghi)perylene | 15000 | <0.05 | <0.05 | 0 |
| **Total Petroleum Hydrocarbons (TPH)** | | | | |

| | | | | |
|---|---|---|---|---|
| Benzene | 100 | <0.005 | <0.005 | 0 |
| Toluene | 95000 | <0.005 | <0.005 | 0 |
| Ethylbenzene | 22000 | <0.005 | <0.005 | 0 |
| o-xylene | 24000 | <0.005 | <0.005 | 0 |
| m & p-xylene | 24000 | <0.005 | <0.005 | 0 |
| Methyl Tertiary Butyl Ether (MTBE) (EIC/AGS/CL:AIRE) | 120 | <0.005 | <0.005 | 0 |
| Aliphatic >C5-C6 | 130000 | < 0.020 | < 0.020 | 0 |
| Aliphatic >C6-C8 | 220000 | < 0.020 | < 0.020 | 0 |
| Aliphatic >C8-C10 | 18000 | < 0.050 | < 0.050 | 0 |
| Aliphatic >C10-C12 | 23000 | < 1.0 | < 1.0 | 0 |
| Aliphatic >C12-C16 | 25000 | < 2.0 | < 2.0 | 0 |
| Aliphatic >C16-C21 | 480000 | < 8.0 | < 8.0 | 0 |
| Aliphatic >C21-C35 | 480000 | < 8.0 | < 8.0 | 0 |
| Aromatic >C5-C7 | 84000 | < 0.010 | < 0.010 | 0 |
| Aromatic >C7-C8 | 95000 | < 0.010 | < 0.010 | 0 |
| Aromatic >C8-C10 | 8500 | < 0.050 | < 0.050 | 0 |
| Aromatic >C10-C12 | 9700 | < 1.0 | < 1.0 | 0 |
| Aromatic >C12-C16 | 10000 | < 2.0 | < 2.0 | 0 |
| Aromatic >C16-C21 | 7700 | < 10.0 | < 10.0 | 0 |
| Aromatic >C21-C35 | 7800 | < 10.0 | < 10.0 | 0 |

## 6.4 Conceptual Site Model Matrix

*Table 6.5: Preliminary Conceptual Model Matrix*

| Preliminary Conceptual Model | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Source(s)** | **Contaminant(s)** | **Pathway(s)** | **Receptor(s)** | **Probability** | **Consequence** | **Risk Assessment** |
| **On Site** | Natural Geology | Radon gas | Ingress into proposed buildings | Future site users | High Likelihood | Minor | **Moderate / Low Risk.** – Development is within an area where greater than 30% of properties are above the action level. However, due to the lack of permanent residents or dwellings in the proposed development, the risks associated with the build-up of Radon gas are significantly lower. |
| | | Arsenic | Dermal contact<br>Soil and dust ingestion and inhalation | Future site users<br>Site workers<br>Site flora and fauna | Likely | Medium | **Moderate Risk** – Laboratory testing revealed elevated concentrations of arsenic above generic guideline values, resulting in bioaccessibility testing being undertaken.<br>The bioaccessibility testing resulted in a new site-specific assessment criterion of 4600 mg/kg for Arsenic. As a result of this, exceedances of arsenic are now noted in WS02 and HP01. |
| **Off Site** | Infilled Land/Mine Wastage | Heavy Metals | Dermal contact<br>Soil and dust ingestion and inhalation | Future site users<br>Site workers | Likely | Medium | **Moderate Risk –** Estimated levels of arsenic within the soil were estimated at |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | Site flora and fauna | | | >120mg/kg in Envirocheck data and 200-400mg/kg using the Tellus SW Map.<br>As discussed above, the bioaccessibility testing resulted in a new site-specific assessment criterion of 4600 mg/kg for Arsenic. As a result of this, exceedances of arsenic are now noted in WS02 and HP01. |
| Historic Mining Works/Shafts | Total Petroleum Hydrocarbons (TPH)<br>Polycyclic Aromatic Hydrocarbons (PAH)<br>Heavy Metals | Dermal contact<br>Soil and dust ingestion and inhalation<br>Ground & surface waters | Future site users<br>Site workers<br>Site flora and fauna | Likely | Medium | **Moderate Risk –** The closest historic works were located 150m W, at Wheal Gerry. The closest shaft is located 75m to the NE.<br>As discussed above, the bioaccessibility testing resulted in a new site-specific assessment criterion of 4600 mg/kg for Arsenic. As a result of this, exceedances of arsenic are now noted in WS02 and HP01. |
| Landfill | Ground Gas: Methane, Carbon Dioxide, Leachate | Dermal contact<br>Soil and dust ingestion and inhalation<br>Ground & surface waters<br>Ingress into proposed buildings | Future site users<br>Site workers<br>Site flora and fauna | Unlikely | Medium | **Low Risk** – Gas monitoring wells were installed on site and weekly monitoring visits were undertaken. No harmful quantities of ground gasses were detected. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Pollution Incidents | Various | Dermal contact<br>Soil and dust ingestion and inhalation<br>Ground & surface waters | Future site users<br>Site workers<br>Site flora and fauna | Low Likelihood | Low | **Low Risk**– There is one recorded pollution incident with 500m of the site, occurring in 1999 due to firefighting run-off. The incident was classified as category 3 (Minor Impact), but due to its proximity to the site, as well as occurring on an equal elevation, a contaminated pathway may be present. However, due to the isolated nature and low severity of the incident, this is considered a low risk to human health. |
| Industrial Land Use | Total Petroleum Hydrocarbons (TPH)<br>Polycyclic Aromatic Hydrocarbons (PAH) | Dermal contact<br>Soil and dust ingestion and inhalation<br>Ground & surface waters | Future site users<br>Site workers<br>Site flora and fauna | Unlikely | Medium | **Low Risk-** There is an abundance of contemporary industrial land use in the surrounding area.<br>No exceedances of TPH or PAH were detected during laboratory testing. |
| Gas Storage | Ground Gas: Methane<br>Total Petroleum Hydrocarbons (TPH)<br>Polycyclic Aromatic Hydrocarbons (PAH) | Dermal contact<br>Soil and dust ingestion and inhalation<br>Ground & surface waters<br>Ingress into proposed buildings | Future site users<br>Site workers<br>Site flora and fauna | Unlikely | Medium | **Low Risk-** Beginning on the earliest Map (1879) a Gas Storage cylinder has been present on the 2m N of the site.<br>No exceedances of TPH or PAH were detected during laboratory testing. No harmful quantities of methane were detected during ground gas monitoring. |

| | | | | | | |
|---|---|---|---|---|---|---|
| Military Centre | Total Petroleum Hydrocarbons (TPH)<br>Polycyclic Aromatic Hydrocarbons (PAH) | Dermal contact<br>Soil and dust ingestion and inhalation<br>Ground & surface waters | Future site users<br>Site workers<br>Site flora and fauna | Unlikely | Mild | **Low Risk:** The earliest maps indicate the northern edge of the site is bordered with a military facility, containing an Armoury, Drill Yard, and Flagstaff.<br>No exceedances of TPH or PAH were detected during laboratory testing. |
| Fuel Station | Ground Gas: Methane<br>Total Petroleum Hydrocarbons (TPH)<br>Polycyclic Aromatic Hydrocarbons (PAH) | Dermal contact<br>Soil and dust ingestion and inhalation<br>Ground & surface waters<br>Ingress into proposed buildings | Future site users<br>Site workers<br>Site flora and fauna | Unlikely | Medium | **Low Risk** – An Active Fuel Station is present 213m S of the site. Due to the distance and intervening hardstanding, it is unlikely a contaminated pathway exists, and this is therefore considered a low risk to human health. |

# 7 CONCLUSIONS

7.1.1 The site was subject to a Phase 2 Ground Investigation to determine the level and risk of potential contamination.

7.1.2 It can be concluded that arsenic levels within WS02 and HP01, in the northwestern corner of the site, present an unacceptable level of risk and targeted remediation will be required in this area of the site.

7.1.3 Following favourable bioaccessibility testing, all other potential contaminants, including heavy metals, hydrocarbons, and ground gasses, across the remainder of the site, are within acceptable levels.

7.1.4 Due to the contamination being present within a single area of the site, it is highly likely that a zoned remediation strategy, targeted specifically in the far extent of the northwestern corner of the site will be suitable.

7.1.5 The site is likely to be suitable for its intended use, as long as the recommendations set out in this report are adhered to.

# 8 RECOMMENDATIONS

8.1.1 A Phase 3 Remediation Strategy Report should be compiled which outlines the scope of remedial works required to reduce the level of contamination to such condition that the site can be deemed suitable for its proposed residential use.

8.1.2 It is likely that a zoned remediation strategy localised within the far northwestern extent of the site will be suitable for the proposed development.

8.1.3 Once the remediation strategy has been fully implemented and the work concluded to the required specifications, a Phase 4 Verification Report and Certificate must be produced.

8.1.4 A flow chart detailing the phased approach to land contamination, as set out in CLR11, is contained to the rear of the report.

8.1.5 The site is situated in an area where greater than 30% of the properties are above the action level. As the site is open-air, risk from radon build-up can be considered lower, however any enclosed structure on site will require full radon protection measures.

8.1.6 Suitable safety measures should be taken by those working on site to mitigate the risks associated with contaminated media including undertaking the appropriate risk assessments and ensuring all workers are wearing the correct PPE.

8.1.7 Waste removed from site shall be disposed of at a suitable facility with the appropriate Waste Transfer Notices obtained for future records. Asbestos waste should be handled by a suitable waste contractor.

# 9 REFERENCE LIST

9.1.1 BSI (2011) BS 10175:2011 Investigation of Potentially Contaminated Sites - Code of Practice. London, British Standards Institution

9.1.2 BSI (2015) BS5930:2015. Code of Practice for Site Investigations. London, British Standards Institution

9.1.3 British Research Establishment (BRE) (2005) Special Digest 1 Concrete in Aggressive Ground. 3rd edn. Watford, BRE

9.1.4 Chartered Institute of Environmental Health (CIEH) and Contaminated Land: Applications in Real Environments (CL:AIRE) (2008) Guidance on Comparing Soil Contamination Data with a Critical Concentration. London, CIEH

9.1.5 CIRIA (2001) CIRIA C552 - Contaminated land risk assessment: A guide to good practice. London, CIRIA

9.1.6 CIRIA (2007) CIRIA C665 - Assessing Risks Posed by Hazardous Ground Gases to Buildings. London, CIRIA

9.1.7 Contaminated Land: Applications in Real Environments (CL:AIRE), Association of Geotechnical and Geo-environmental Specialists (AGS) and The Environmental Industries Commission (EIC) (2010) Soil Generic Assessment Criteria for Human Health Risk Assessment. London, CL:AIRE

9.1.8 Contaminated Land: Applications in Real Environments (CL:AIRE) (2012) A Pragmatic Approach to Ground Gas Risk Assessment. Research Bulletin 17

9.1.9 Contaminated Land: Applications in Real Environments (CL:AIRE) (2016) CAR SOIL: Control of Asbestos Regulations 2012. Interpretation for Managing and Working with Asbestos in Soil and Construction and Demolition Materials.

9.1.10 Environment Agency (2004) Contaminated Land Report 11 - Model Procedures for the Management of Land Contamination. Bristol, Environment Agency

9.1.11 Environment Agency (2009) Updated Technical Background to the CLEA Model. Science Report SC050021/SR3. Bristol: Environment Agency

9.1.12 Environment Agency (2009) Human Health Toxicological Assessment of Contaminants in Soil. Science Report SC050021/SR2. Bristol: Environment Agency

9.1.13 Great Britain. Environmental Protection Act (1990). London, The Stationery Office

9.1.14 Great Britain. Water Act (2003) London, The Stationery Office

9.1.15 Great Britain. Environmental Permitting Regulations (2007). London, The Stationery Office

9.1.16 Great Britain. Environmental Damage (Prevention and Remediation) Regulations (2009). London, The Stationery Office

9.1.17 Great Britain. The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015. London, The Stationery Office

9.1.18 National House Building Council (NHBC), Environment Agency and Chartered Institute of Environmental Health (CIEH) (2008) Research & Development Publication 66: Guidance for the Safe Development of Housing on Land Affected by Contamination. Amersham, NHBC

9.1.19 Royal Institution of Chartered Surveyors (RICS) (2012) Japanese Knotweed and Residential Property. Coventry, RICS

# 10 NOTES

10.1.1 This report is concerned solely with the property, as defined by this report, or parts thereof examined.

10.1.2 The report should not be used in connection with adjacent properties.

10.1.3 In respect of site works, Wheal Jane Consultancy cannot accept any liabilities for any additional mine workings found outside the limits of any areas examined.

10.1.4 The information supplied by third parties which has been used in compiling this Phase 2 ground investigation report, is derived from a number of statutory and non-statutory sources. While every effort is made by the supplier to ensure accuracy, the supplier cannot guarantee the accuracy or completeness of such information or data, nor to identify all the factors that may be relevant.

10.1.5 The conclusions and recommendations relate to the type and extent of development outlined in this report for this specific property only and should not be taken as suitable for any other form or extent of development on this property without further consultation with Wheal Jane Consultancy.

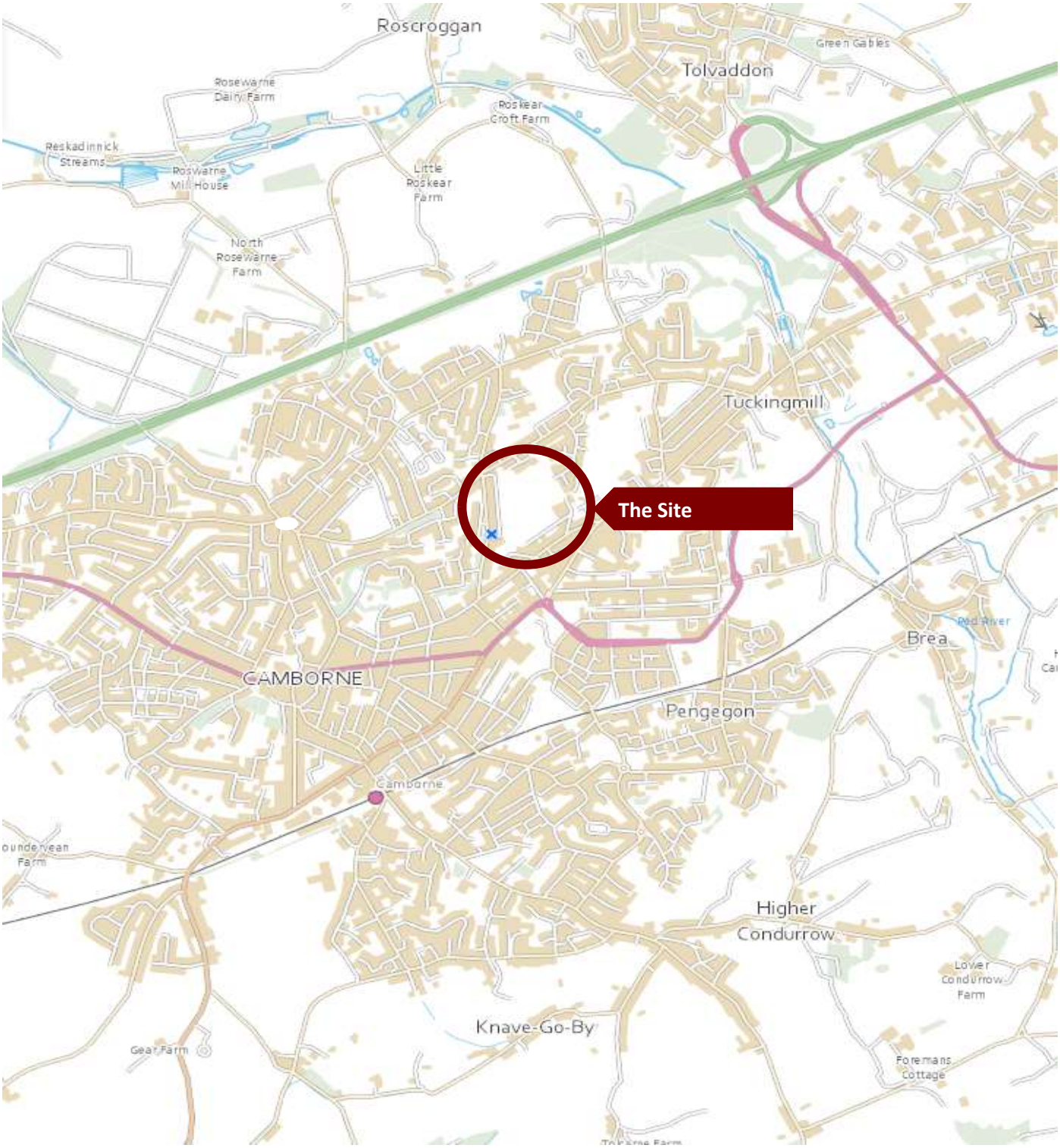
10.1.6 This report is confidential to the client, the client's legal and professional advisors, and may not be reproduced or distributed without our permission other than to directly facilitate the sale or development of the property concerned.

10.1.7 We have no liability toward any person not party to commissioning this report.

10.1.8 Unless otherwise expressly stated, nothing in this report shall create or confer any rights or other benefits pursuant to the Contracts (Rights of Third Parties) Act 1999 in favour of any person other than the person commissioning this report.

10.1.9 This report is not an asbestos inspection that may fall within the control of Control of Asbestos Regulations 2006.

# FIGURES:




Title: **Site Location Plan**

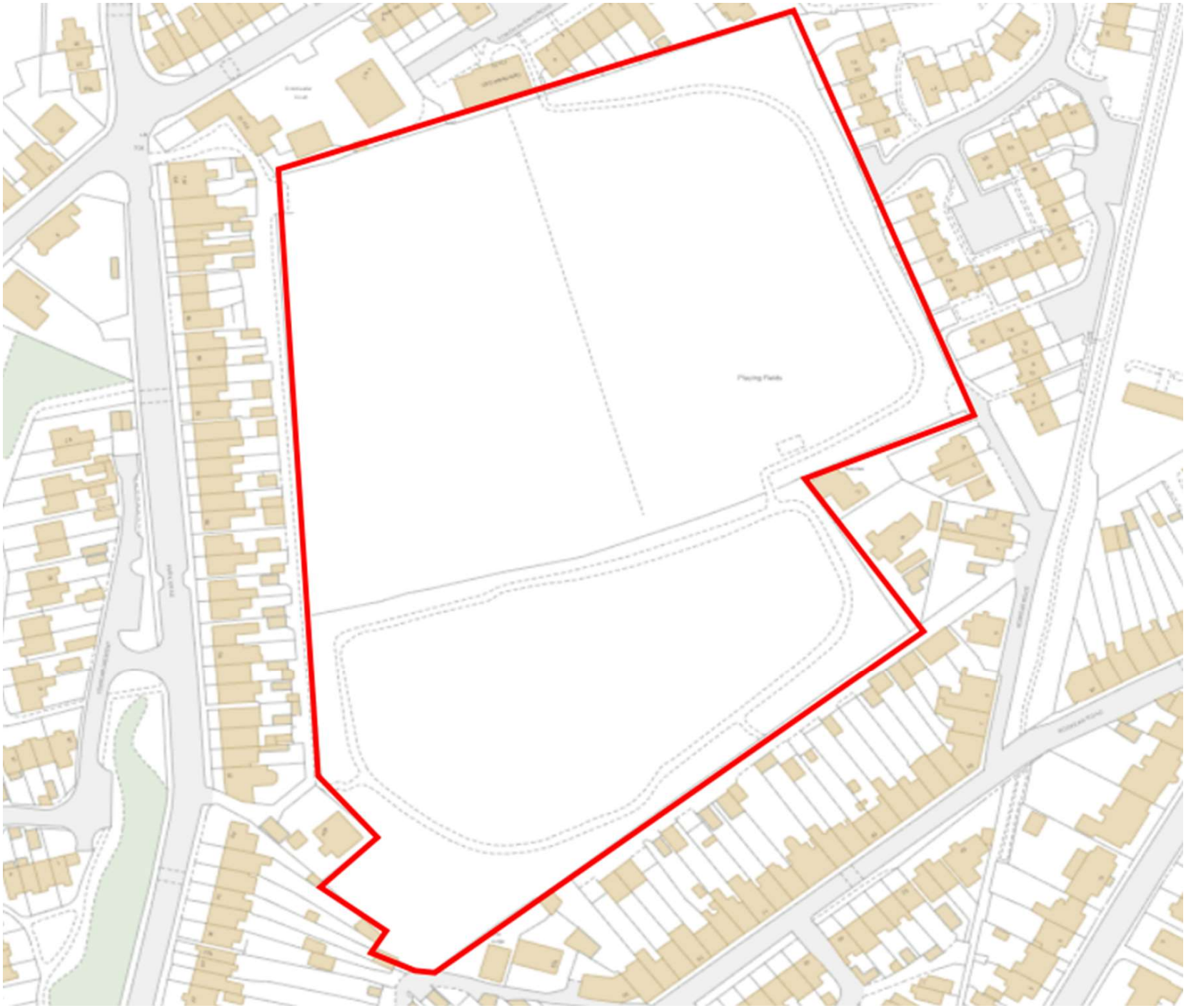
Project: **Park Gerry**

Client: **Mei Loci**

Report Title: **Site Investigation - Handpitting**

Date: **28/02/2024** Ref: **21999** Figure: **2.1**

WHEAL JANE CONSULTANCY
GEOTECHNICAL, ENVIRONMENTAL & MINING SERVICES



N

Legend:

WHEAL JANE CONSULTANCY
GEOTECHNICAL, ENVIRONMENTAL & MINING SERVICES

Title:

**Current Site Layout**

Project:

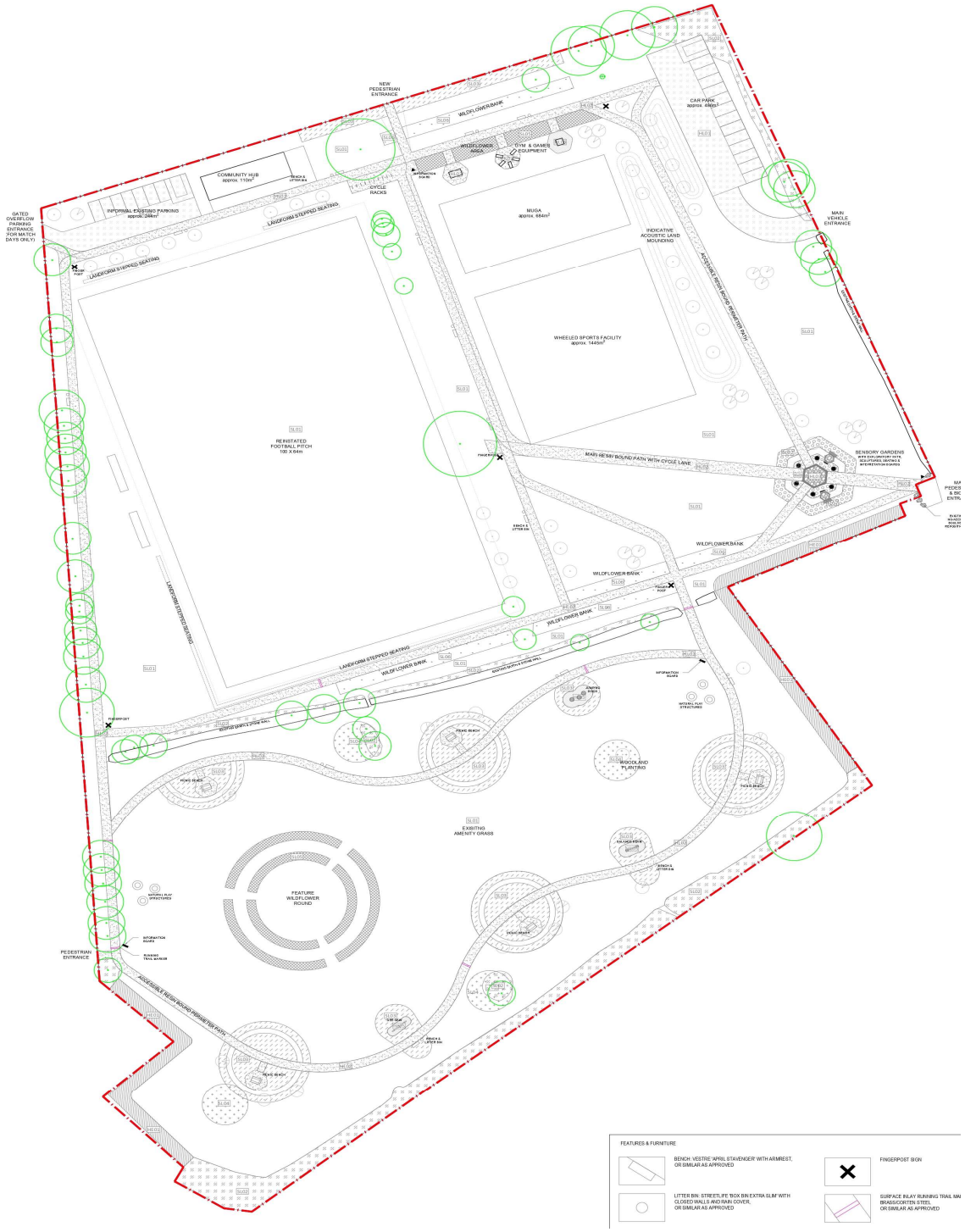
**Park Gerry**

**21999**

Client:

**Mei Loci**

| | |
|---|---|
| Date: | 28/02/2024 |
| Scale: | NTS |
| Drawn by: | TG |
| Revision: | A |
| Figure: | 2.2 |




N

Legend:

WHEAL JANE CONSULTANCY
GEOTECHNICAL, ENVIRONMENTAL & MINING SERVICES

Title:

**Proposed Site Layout**

Project:

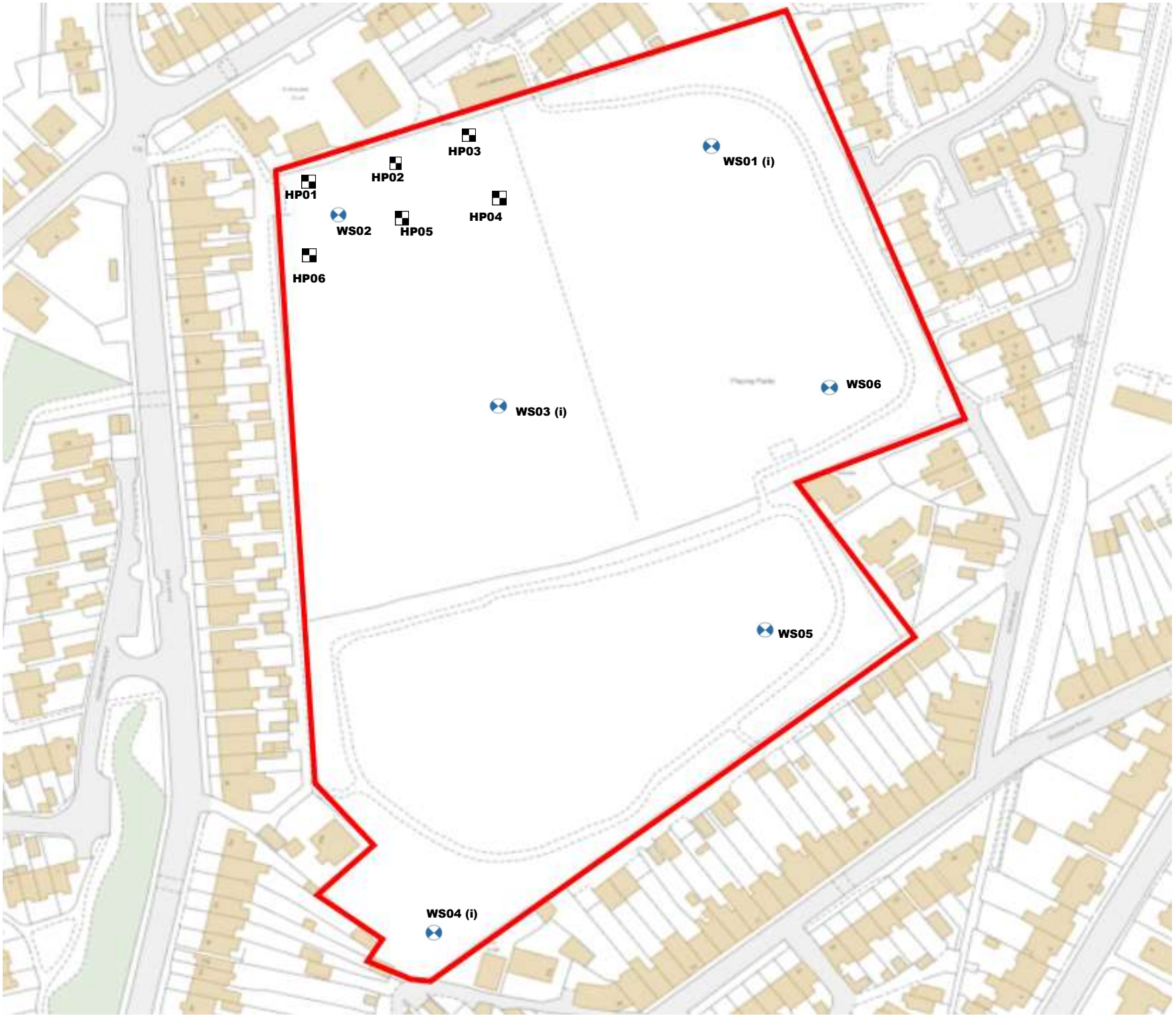
**Park Gerry**

**21999**

Client:

**Mei Loci**

| | |
|---|---|
| Date: | 28/02/2024 |
| Scale: | NTS |
| Drawn by: | Mei Loci |
| Revision: | A |
| Figure: | 2.3 |




N

Legend:

**Windowless Sample Borehole**
**(i) Indicates Gas Monitoring Installation**

WHEAL JANE CONSULTANCY
GEOTECHNICAL, ENVIRONMENTAL & MINING SERVICES

Title:

**Exploratory Hole Location Plan**

Project:

**Park Gerry**

**21999**

Client:

**Mei Loci**

| | |
|---|---|
| Date: | 28/02/2024 |
| Scale: | NTS |
| Drawn by: | MV |
| Revision: | A |
| Figure: | 3.1 |

# APPENDIX A

## Exploratory Hole Logs

Wheal Jane Consultancy
Environment & mining services

| Site | Number |
|---|---|
| Park Gerry, Camborne | **WS01** |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Windowless Sample Borehole | | | Mei Loci | 21665 |
| | **Location** Park Gerry | **Dates** 29/06/2023 | **Engineer** WJC | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) | Turf over light brown, clayey, silty, sandy, TOPSOIL. Sand is fine to coarse, frequent rootlets | | |
| 0.10 | ES | | | | 0.15 | | | |
| | | | | | | Light orangish brown and mottled reddish brown, clayey becoming very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, f-c, of metasedimentary rock and quartz. Occasional rounded cobbles up to 7.5cm. | | |
| 0.50 | ES | | | | | | | |
| 1.00-1.45 | SPT N=11 | | 1,2/2,3,3,3 | | | | | |
| 1.20 | ES | | | | | | | |
| 2.00-2.45 | SPT N=10 | | 1,2/2,2,3,3 | | | | | |
| | | | | | (4.85) | | | |
| 3.00-3.45 | SPT N=9 | | 1,1/1,2,3,3 | | | | | |
| 4.00-4.45 | SPT N=4 | | 1,1/1,1,1,1 | | | | | |
| 4.50 | ES | | | | | | | |
| 5.00-5.45 | SPT N=8 | | 2,2/2,2,2,2 | | 5.00 | | | |

**Remarks**
No groundwater encountered
Gas monitoring standpipe and metal cover installed in WS01
Hole continued with DP01

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SLW |

**Figure No.** 21665.WS01

Wheal Jane Consultancy
Environment & mining services

| Site | Number |
|---|---|
| Park Gerry, Camborne | **WS02** |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Windowless Sample Borehole | | | Mei Loci | 21665 |
| | **Location** Park Gerry | **Dates** 29/06/2023 | **Engineer** WJC | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) | Turf over light brown, clayey, silty, sandy, TOPSOIL. Sand is fine to coarse, frequent rootlets | | |
| 0.10 | ES | | | | 0.15 | | | |
| | | | | | | Light orangish brown and mottled reddish brown, clayey becoming very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse, of metasedimentary rock and quartz. Occasional rounded cobbles up to 7.5cm. | | |
| 0.50 | ES | | | | | | | |
| | | | | | (1.55) | | | |
| 1.00-1.45 | SPT N=10 | | 1,1/2,2,2,4 | | | | | |
| 1.50 | ES | | | | | | | |
| 1.70-2.15 | SPT N=0 | | 24,50/ | | 1.70 | | | |
| | | | | | | Complete at 1.70m | | |

**Remarks**
Hole complete at refusal
No groundwater encountered

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SLW |

**Figure No.** 21665.WS02

Wheal Jane Consultancy
Environment & mining services

| Site | Number |
|---|---|
| Park Gerry, Camborne | WS03 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Windowless Sample Borehole | | | Mei Loci | 21665 |
| | **Location** Park Gerry | **Dates** 29/06/2023 | **Engineer** WJC | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| 0.20 | ES | | | | (0.40) | Turf over light brown, clayey, silty, sandy, TOPSOIL. Sand is fine to coarse, frequent rootlets | | |
| 0.60 | ES | | | | 0.40 | Light orangish brown becoming dark grey, clayey becoming very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse, of metasedimentary rock and quartz. Occasional rounded cobbles up to 7.5cm. | | |
| 1.00-1.45 | SPT N=11 | | 1,2/2,3,3,3 | | | | | |
| 1.00 | ES | | | | | | | |
| 2.00-2.45 | SPT N=12 | | 3,3/3,3,3,3 | | | | | |
| 3.00-3.45 | SPT N=11 | | 3,3/3,2,3,3 | | (4.60) | | | |
| 4.00-4.45 | SPT N=12 | | 3,3/3,3,3,3 | | | | | |
| 4.50 | ES | | Water strike(1) at 4.50m. | | | | | ▽1 |
| 5.00-5.45 | SPT N=24 | | 5,5/5,6,5,8 | | 5.00 | | | |

**Remarks**
Hole complete at depth
Gas monitoring standpipe and metal cover installed in WS03
Groundwater encountered at 4.50mBGL

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SLW |

**Figure No.** 21665.WS03

Wheal Jane Consultancy
Environment & mining services

| Site | Number |
|---|---|
| Park Gerry, Camborne | **WS04** |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Windowless Sample Borehole | | | Mei Loci | 21665 |
| | **Location** Park Gerry | **Dates** 29/06/2023 | **Engineer** WJC | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.10) 0.10 | Turf over light brown, clayey, silty, sandy, TOPSOIL. Sand is fine to coarse, frequent rootlets | | |
| 0.30 | ES | | | | | Light orangish brown and mottled reddish brown, clayey becoming very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, f-c, of metasedimentary rock and quartz. Occasional rounded cobbles up to 7.5cm. | | |
| 0.70 | ES | | | | | | | |
| 1.00-1.45 | SPT N=11 | | 1,2/2,3,3,3 | | | | | |
| | | | | | (2.90) | | | |
| 2.00-2.45 | SPT N=18 | | 2,3/3,4,5,6 | | | | | |
| 2.50 | ES | | | | | | | |
| 3.00-3.45 | SPT N=61 | | 8,11/13,14,16,18 | | 3.00 | Complete at 3.00m | | |

**Remarks**
Hole complete at refusal
Gas monitoring standpipe and metal cover installed in WS04
No groundwater encountered

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SLW |

**Figure No.** 21665.WS04

Wheal Jane Consultancy
Environment & mining services

| Site | Number |
|---|---|
| Park Gerry, Camborne | **WS05** |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Windowless Sample Borehole | | | Mei Loci | 21665 |
| | **Location** Park Gerry | **Dates** 29/06/2023 | **Engineer** WJC | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.10) 0.10 | Turf over light brown, clayey, silty, sandy, TOPSOIL. Sand is fine to coarse, frequent rootlets | | |
| 0.10 | ES | | | | | Light orangish brown becoming dark grey, clayey becoming very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse, of metasedimentary rock and quartz. Occasional rounded cobbles up to 7.5cm. | | |
| 0.40 | ES | | | | | | | |
| 0.80 | ES | | | | | | | |
| 1.00-1.45 | SPT N=8 | | 1,2/2,2,2,2 | | | | | |
| 2.00-2.45 | SPT N=8 | | 1,1/1,2,2,3 | | (4.90) | | | |
| 3.00-3.45 | SPT N=12 | | 2,2/3,3,3,3 | | | | | |
| 4.00-4.45 | SPT N=14 | | 3,4/3,4,3,4 | | | | | |
| 4.70 | ES | | | | | | | |
| 5.00-5.45 | SPT N=26 | | 3,4/5,5,7,9 | | 5.00 | | | |

**Remarks**
No groundwater encountered
Gas monitoring standpipe and metal cover installed in WS05
Hole complete at depth

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SLW |

**Figure No.** 21665.WS05

Wheal Jane Consultancy
Environment & mining services

| Site | Number |
|---|---|
| Park Gerry, Camborne | **WS06** |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Windowless Sample Borehole | | | Mei Loci | 21665 |
| | **Location** Park Gerry | **Dates** 29/06/2023 | **Engineer** WJC | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.15) 0.15 | Turf over light brown, clayey, silty, sandy, TOPSOIL. Sand is fine to coarse, frequent rootlets | | |
| 0.10 | ES | | | | | Light orangish brown becoming dark grey, clayey becoming very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse, of metasedimentary rock and quartz. Occasional rounded cobbles up to 7.5cm. Quartz vein encountered at 1.60mBGL | | |
| 0.60 | ES | | | | (1.45) | | | |
| 1.00-1.45 | SPT N=13 | | 1,1/2,3,3,5 | | | | | |
| 1.20 | ES | | | | | | | |
| | | | | | 1.60 | Complete at 5.00m | | |
| 1.80-2.25 | SPT N=84 | | 11,13/19,28,37 | | | | | |

**Remarks**
Hole backfilled with arising on completion
No groundwater encountered
Hole complete at refusal

| Scale (approx) | Logged By |
|---|---|
| 1:25 | SLW |

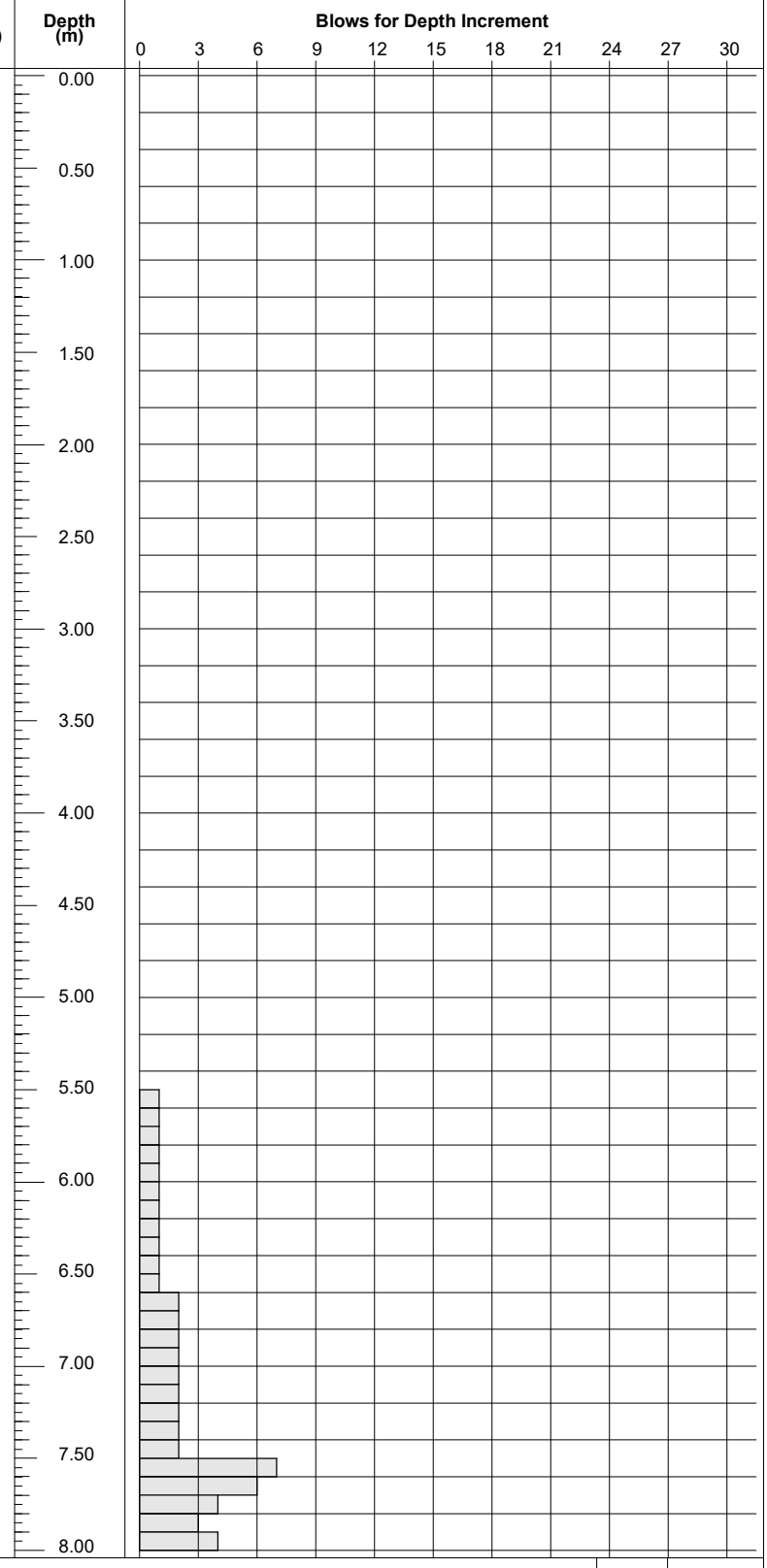
**Figure No.** 21665.WS06

Wheal Jane Consultancy
Environment & mining services

| Site | Probe Number |
|---|---|
| Park Gerry, Camborne | DP01 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe, advanced from base of WS01 starting at a depth of 5.5m | | | Mei Loci | 21665 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | Park Gerry | 29/06/2023 | WJC | 1/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) |
|---|---|---|---|
| 5.50-5.60 | 1 | | |
| 5.60-5.70 | 1 | | |
| 5.70-5.80 | 1 | | |
| 5.80-5.90 | 1 | | |
| 5.90-6.00 | 1 | | |
| 6.00-6.10 | 1 | | |
| 6.10-6.20 | 1 | | |
| 6.20-6.30 | 1 | | |
| 6.30-6.40 | 1 | | |
| 6.40-6.50 | 1 | | |
| 6.50-6.60 | 1 | | |
| 6.60-6.70 | 2 | | |
| 6.70-6.80 | 2 | | |
| 6.80-6.90 | 2 | | |
| 6.90-7.00 | 2 | | |
| 7.00-7.10 | 2 | | |
| 7.10-7.20 | 2 | | |
| 7.20-7.30 | 2 | | |
| 7.30-7.40 | 2 | | |
| 7.40-7.50 | 2 | | |
| 7.50-7.60 | 7 | | |
| 7.60-7.70 | 6 | | |
| 7.70-7.80 | 4 | | |
| 7.80-7.90 | 3 | | |
| 7.90-8.00 | 4 | | |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:40 | SLW |

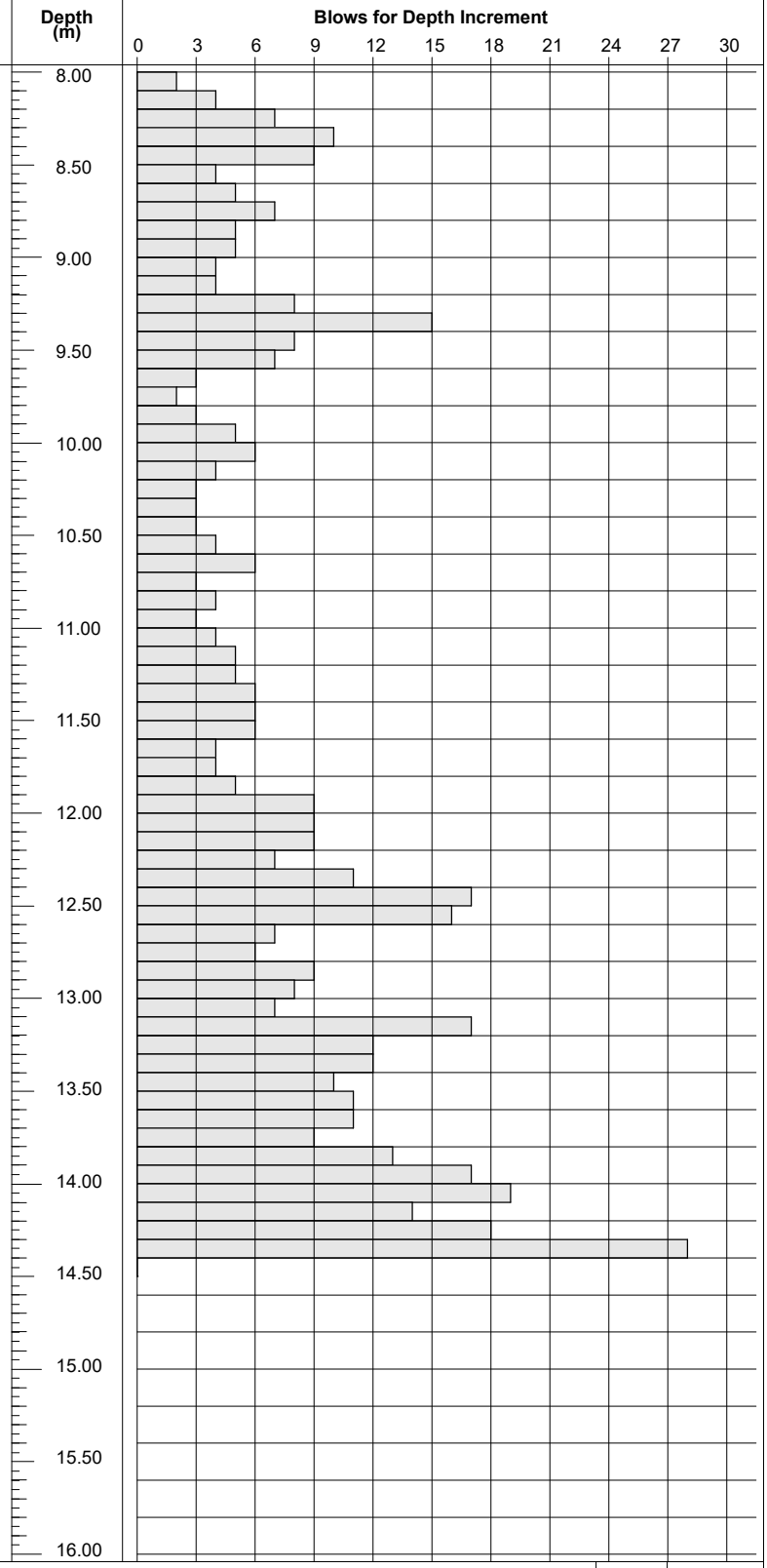
**Figure No.** 21665.DP01

Wheal Jane Consultancy
Environment & mining services

| Site | Probe Number |
|---|---|
| Park Gerry, Camborne | DP01 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe, advanced from base of WS01 starting at a depth of 5.5m | | | Mei Loci | 21665 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | Park Gerry | 29/06/2023 | WJC | 2/2 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) |
|---|---|---|---|
| 8.00-8.10 | 2 | | |
| 8.10-8.20 | 4 | | |
| 8.20-8.30 | 7 | | |
| 8.30-8.40 | 10 | | |
| 8.40-8.50 | 9 | | |
| 8.50-8.60 | 4 | | |
| 8.60-8.70 | 5 | | |
| 8.70-8.80 | 7 | | |
| 8.80-8.90 | 5 | | |
| 8.90-9.00 | 5 | | |
| 9.00-9.10 | 4 | | |
| 9.10-9.20 | 4 | | |
| 9.20-9.30 | 8 | | |
| 9.30-9.40 | 15 | | |
| 9.40-9.50 | 8 | | |
| 9.50-9.60 | 7 | | |
| 9.60-9.70 | 3 | | |
| 9.70-9.80 | 2 | | |
| 9.80-9.90 | 3 | | |
| 9.90-10.00 | 5 | | |
| 10.00-10.10 | 6 | | |
| 10.10-10.20 | 4 | | |
| 10.20-10.30 | 3 | | |
| 10.30-10.40 | 3 | | |
| 10.40-10.50 | 3 | | |
| 10.50-10.60 | 4 | | |
| 10.60-10.70 | 6 | | |
| 10.70-10.80 | 3 | | |
| 10.80-10.90 | 4 | | |
| 10.90-11.00 | 3 | | |
| 11.00-11.10 | 4 | | |
| 11.10-11.20 | 5 | | |
| 11.20-11.30 | 5 | | |
| 11.30-11.40 | 6 | | |
| 11.40-11.50 | 6 | | |
| 11.50-11.60 | 6 | | |
| 11.60-11.70 | 4 | | |
| 11.70-11.80 | 4 | | |
| 11.80-11.90 | 5 | | |
| 11.90-12.00 | 9 | | |
| 12.00-12.10 | 9 | | |
| 12.10-12.20 | 9 | | |
| 12.20-12.30 | 7 | | |
| 12.30-12.40 | 11 | | |
| 12.40-12.50 | 17 | | |
| 12.50-12.60 | 16 | | |
| 12.60-12.70 | 7 | | |
| 12.70-12.80 | 6 | | |
| 12.80-12.90 | 9 | | |
| 12.90-13.00 | 8 | | |
| 13.00-13.10 | 7 | | |
| 13.10-13.20 | 17 | | |
| 13.20-13.30 | 12 | | |
| 13.30-13.40 | 12 | | |
| 13.40-13.50 | 10 | | |
| 13.50-13.60 | 11 | | |
| 13.60-13.70 | 11 | | |
| 13.70-13.80 | 9 | | |
| 13.80-13.90 | 13 | | |
| 13.90-14.00 | 17 | | |
| 14.00-14.10 | 19 | | |
| 14.10-14.20 | 14 | | |
| 14.20-14.30 | 18 | | |
| 14.30-14.40 | 28 | | |
| 14.40-14.50 | 0 | | |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:40 | SLW |

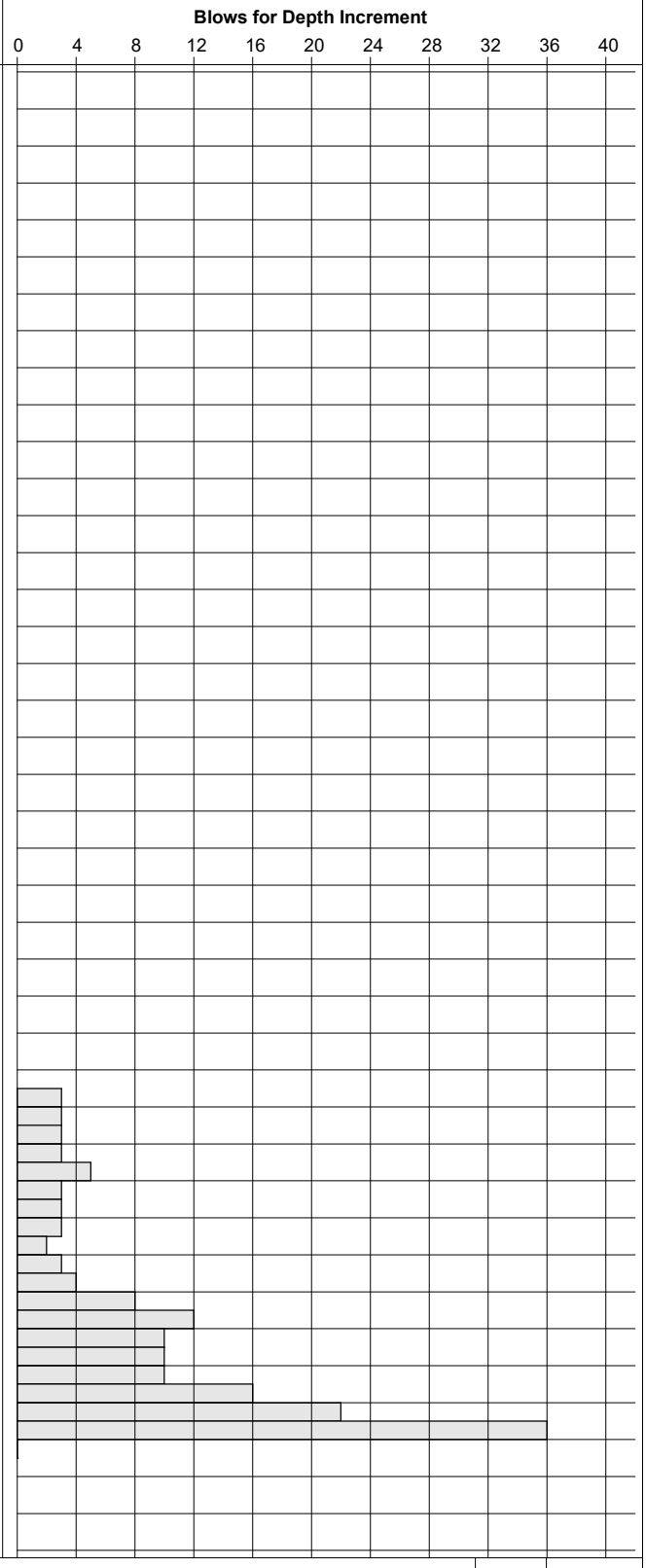
**Figure No.**
21665.DP01

Wheal Jane Consultancy
Environment & mining services

| Site | Probe Number |
|---|---|
| Park Gerry, Camborne | DP02 |

| Method | Cone Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Dynamic Probe, advanced from base of WS05 starting at a depth of 5.5m | | | Mei Loci | 21665 |
| | **Location** | **Dates** | **Engineer** | **Sheet** |
| | Park Gerry | 29/06/2023 | WJC | 1/1 |

| Depth (m) | Blows for Depth Increment | Field Records | Level (mOD) |
|---|---|---|---|
| 5.50-5.60 | 3 | | |
| 5.60-5.70 | 3 | | |
| 5.70-5.80 | 3 | | |
| 5.80-5.90 | 3 | | |
| 5.90-6.00 | 5 | | |
| 6.00-6.10 | 3 | | |
| 6.10-6.20 | 3 | | |
| 6.20-6.30 | 3 | | |
| 6.30-6.40 | 2 | | |
| 6.40-6.50 | 3 | | |
| 6.50-6.60 | 4 | | |
| 6.60-6.70 | 8 | | |
| 6.70-6.80 | 12 | | |
| 6.80-6.90 | 10 | | |
| 6.90-7.00 | 10 | | |
| 7.00-7.10 | 10 | | |
| 7.10-7.20 | 16 | | |
| 7.20-7.30 | 22 | | |
| 7.30-7.40 | 36 | | |
| 7.40-7.50 | 0 | | |




**Remarks**

| Scale (approx) | Logged By |
|---|---|
| 1:40 | SLW |

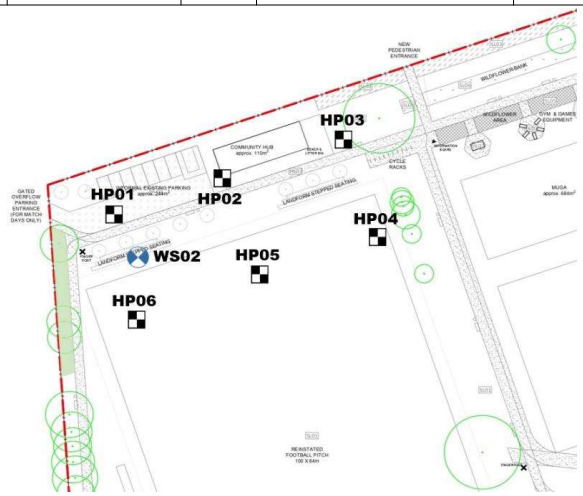
**Figure No.** 21665.DP02

Wheal Jane Consultancy
Environment & mining services

| Site | Trial Pit Number |
|---|---|
| Park Gerry Handpitting | HP01 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Excavated using insulated hand tools. | 0.40 m diameter x 1.05 m deep | | Mei Loci | 21999 |
| | **Location** Park Gerry | **Dates** 30/01/2024 | **Engineer** | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | Grass over light brown, clayey, silty, sandy TOPSOIL. Sand is fine to coarse, frequent rootlets. | | |
| 0.20 | ES | | | | 0.30 | Light orangish-brown and mottled reddish-brown, clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse of metasedimentary mudstone and quartz. Sand is fine to coarse. Occasional rounded cobbles up to 6 cm. | | |
| 0.50 | ES | | | | (0.75) | | | |
| 1.00 | ES | | | | 1.05 | Complete at 1.05m | | |




**Remarks**

Hole backfilled with arisings upon completion.
Sidewalls were stable with no collapse.
Hole complete at depth.
No groundwater encountered.

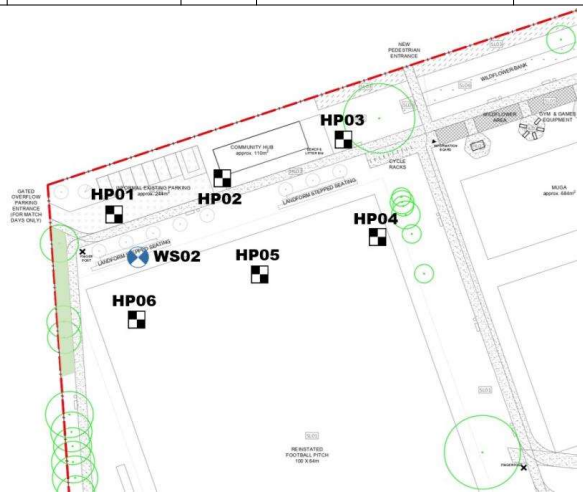
| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:10 | TG | 21999.HP01 |

Wheal Jane Consultancy
Environment & mining services

| Site | Trial Pit Number |
|---|---|
| Park Gerry Handpitting | HP02 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Excavated using insulated hand tools. | 0.40 m diameter x 1.00 m deep | | Mei Loci | 21999 |
| | **Location** Park Gerry | **Dates** 30/01/2024 | **Engineer** | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| 0.10 | ES | | | | (0.25) | Grass over light brown, clayey, silty, sandy TOPSOIL. Sand is fine to coarse, frequent rootlets. | | |
| 0.40 | ES | | | | 0.25 | Light orangish-brown and mottled reddish-brown, clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse of metasedimentary mudstone and quartz. Sand is fine to coarse. Occasional rounded cobbles up to 6 cm. | | |
| 0.80 | ES | | | | (0.75) | | | |
| | | | | | 1.00 | Complete at 1.00m | | |




**Remarks**

Hole backfilled with arisings upon completion.
Sidewalls were stable with no collapse.
Hole complete at depth.
No groundwater encountered.

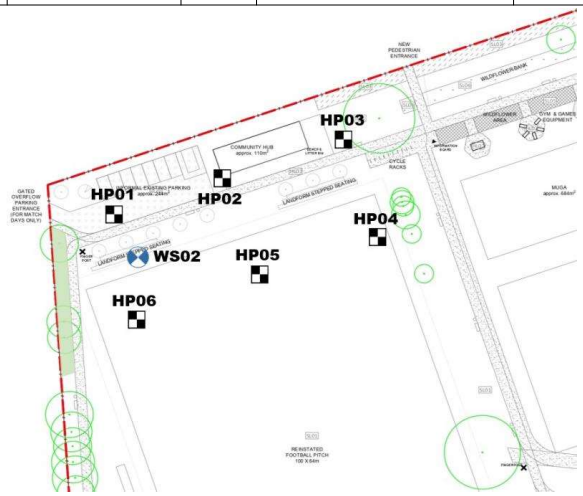
| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:10 | TG | 21999.HP02 |

Wheal Jane Consultancy
Environment & mining services

| Site | Trial Pit Number |
|---|---|
| Park Gerry Handpitting | HP03 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Excavated using insulated hand tools. | 0.40 m diameter x 1.20 m deep | | Mei Loci | 21999 |
| | **Location** Park Gerry | **Dates** 30/01/2024 | **Engineer** | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.25) | Grass over light brown, clayey, silty, sandy TOPSOIL. Sand is fine to coarse, frequent rootlets. | | |
| 0.15 | ES | | | | 0.25 | Light orangish-brown and mottled reddish-brown, very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse of metasedimentary mudstone and quartz. Sand is fine to coarse. Occasional rounded cobbles up to 6 cm. | | |
| 0.60 | ES | | | | (0.95) | | | |
| 1.20 | ES | | | | 1.20 | Complete at 1.20m | | |




**Remarks**

Hole backfilled with arisings upon completion.
Sidewalls were stable with no collapse.
Hole complete at depth.
No groundwater encountered.

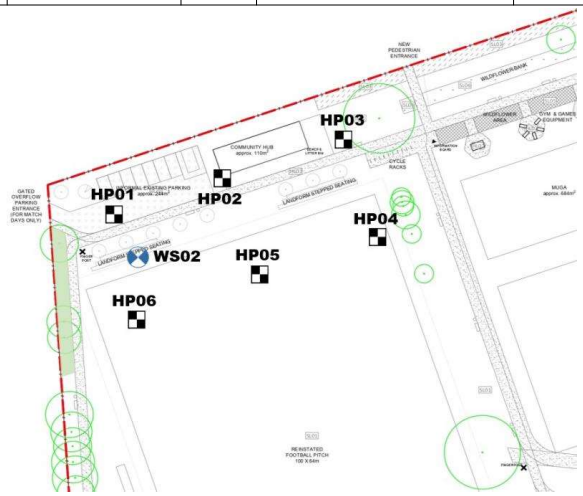
| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:10 | TG | 21999.HP03 |

Wheal Jane Consultancy
Environment & mining services

| Site | Trial Pit Number |
|---|---|
| Park Gerry Handpitting | HP04 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Excavated using insulated hand tools. | 0.40 m diameter x 0.90 m deep | | Mei Loci | 21999 |
| | **Location** Park Gerry | **Dates** 30/01/2024 | **Engineer** | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | Grass over light brown, clayey, silty, sandy TOPSOIL. Sand is fine to coarse, frequent rootlets. | | |
| 0.20 | ES | | | | 0.30 | Light orangish-brown and mottled reddish-brown, clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse of metasedimentary mudstone and quartz. Sand is fine to coarse. Occasional rounded cobbles up to 6 cm. | | |
| 0.50 | ES | | | | (0.60) | | | |
| 0.90 | ES | | | | 0.90 | Complete at 0.90m | | |




**Remarks**

Hole backfilled with arisings upon completion.
Sidewalls were stable with no collapse.
Hole complete at depth.
No groundwater encountered.

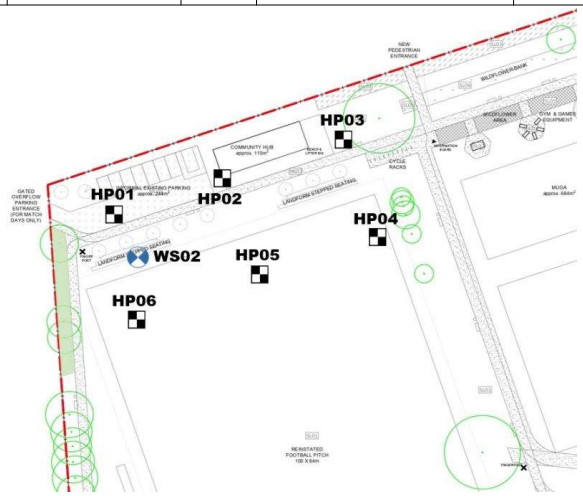
| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:10 | TG | 21999.HP04 |

Wheal Jane Consultancy
Environment & mining services

| Site | Trial Pit Number |
|---|---|
| Park Gerry Handpitting | HP05 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Excavated using insulated hand tools. | 0.40 m diameter x 0.75 m deep | | Mei Loci | 21999 |
| | **Location** Park Gerry | **Dates** 30/01/2024 | **Engineer** | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| 0.10 | ES | | | | (0.20) 0.20 | Grass over light brown, clayey, silty, sandy TOPSOIL. Sand is fine to coarse, frequent rootlets. | | |
| 0.40 | ES | | | | (0.55) | Light orangish-brown and mottled reddish-brown, clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse of metasedimentary mudstone and quartz. Sand is fine to coarse. Occasional rounded cobbles up to 6 cm. | | |
| 0.75 | ES | | | | 0.75 | Complete at 0.75m | | |




**Remarks**

Hole backfilled with arisings upon completion.
Sidewalls were stable with no collapse.
Hole complete at depth.
No groundwater encountered.

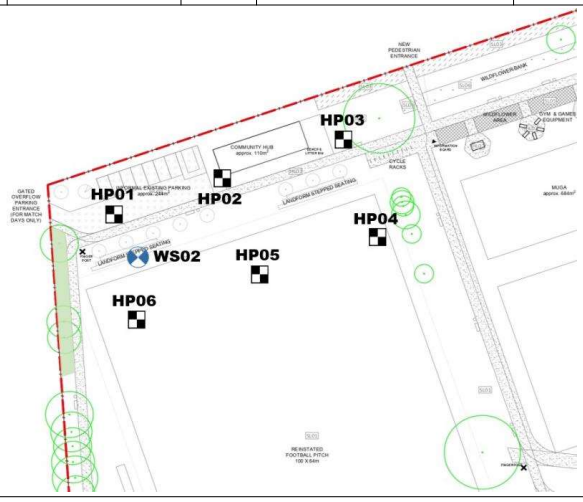
| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:10 | TG | 21999.HP05 |

Wheal Jane Consultancy
Environment & mining services

| Site | Trial Pit Number |
|---|---|
| Park Gerry Handpitting | HP06 |

| Excavation Method | Dimensions | Ground Level (mOD) | Client | Job Number |
|---|---|---|---|---|
| Excavated using insulated hand tools. | 0.40 m diameter x 1.00 m deep | | Mei Loci | 21999 |
| | **Location** Park Gerry | **Dates** 30/01/2024 | **Engineer** | **Sheet** 1/1 |

| Depth (m) | Sample / Tests | Water Depth (m) | Field Records | Level (mOD) | Depth (m) (Thickness) | Description | Legend | Water |
|---|---|---|---|---|---|---|---|---|
| | | | | | (0.30) | Grass over light brown, clayey, silty, sandy TOPSOIL. Sand is fine to coarse, frequent rootlets. | | |
| 0.25 | ES | | | | 0.30 | Light orangish-brown and mottled reddish-brown, very clayey, slightly sandy, gravelly SILT. Gravel is sub-angular to sub-rounded, fine to coarse of metasedimentary mudstone and quartz. Sand is fine to coarse. Occasional rounded cobbles up to 6 cm. | | |
| 0.60 | ES | | | | (0.70) | | | |
| 0.90 | ES | | | | 1.00 | Complete at 1.00m | | |




**Remarks**

Hole backfilled with arisings upon completion.
Sidewalls were stable with no collapse.
Hole complete at depth.
No groundwater encountered.

| Scale (approx) | Logged By | Figure No. |
|---|---|---|
| 1:10 | TG | 21999.HP06 |

# APPENDIX B

## Ground Gas Monitoring Results

**Park Gerry, Camborne – Monitoring**

**Gas/Groundwater Monitoring Results**

**Job Ref:**

| Date: | 05/07/2023 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| All measurements taken after 120 seconds. | | | | | | | | | |
| | | | | | | | | | |
| Borehole | $O_2$ % | $CO_2$ % | $CH_4$ % | CO ppm | $H_2S$ ppm | Depth to water (m bgl) | Depth to base (m bgl) | Flow Rate | Atmospheric Pressure |
| WS01 | 19.9 | 1.3 | 0 | 0 | 0 | DRY | 5.24 | 0.1 | 1006 |
| WS03 | 20.2 | 0.9 | 0 | 0 | 0 | DRY | 5.03 | 0.2 | 1008 |
| WS04 | 20.4 | 0.5 | 0 | 1 | 0 | DRY | 3.06 | 0.2 | 1008 |

**No.1 Pentire Avenue, Newquay – Monitoring**

**Gas/Groundwater Monitoring Results**

**Job Ref:**

| Date: | 12/07/2023 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| All measurements taken after 120 seconds. | | | | | | | | | |
| | | | | | | | | | |
| Borehole | $O_2$ % | $CO_2$ % | $CH_4$ % | CO ppm | $H_2S$ ppm | Depth to water (m bgl) | Depth to base (m bgl) | Flow Rate | Atmospheric Pressure |
| BH01 | 19.8 | 1.1 | 0 | 0 | 0 | DRY | 5.24 | 0.4 | 1011 |
| BH02 | 19.9 | 1.1 | 0 | 0 | 0 | DRY | 5.03 | 0.4 | 1009 |
| BH03 | 20.6 | 0.5 | 0 | 0 | 0 | DRY | 3.06 | 0.4 | 1008 |

**Park Gerry, Camborne – Monitoring**

**Gas/Groundwater Monitoring Results**

**Job Ref:**

| Date: | 19/07/2023 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| All measurements taken after 120 seconds. | | | | | | | | | |
| | | | | | | | | | |
| Borehole | $O_2$ % | $CO_2$ % | $CH_4$ % | CO ppm | $H_2S$ ppm | Depth to water (m bgl) | Depth to base (m bgl) | Flow Rate (l/h) | Atmospheric Pressure (mbar) |
| BH01 | 19.3 | 1.2 | 0 | 0 | 0 | DRY | 5.24 | 0.4 | 1014 |
| BH02 | 19.6 | 1.2 | 0 | 0 | 0 | DRY | 5.03 | 0.3 | 1015 |
| BH03 | 20.3 | 0.7 | 0 | 0 | 0 | DRY | 3.06 | 0.3 | 1009 |

**Park Gerry, Camborne – Monitoring**

**Gas/Groundwater Monitoring Results**

**Job Ref:**

| Date: | 26/07/2023 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| All measurements taken after 120 seconds. | | | | | | | | | |
| | | | | | | | | | |
| Borehole | $O_2$ % | $CO_2$ % | $CH_4$ % | CO ppm | $H_2S$ ppm | Depth to water (m bgl) | Depth to base (m bgl) | Flow Rate (l/h) | Atmospheric Pressure (mbar) |
| BH01 | 20.0 | 1.3 | 0 | 0 | 0 | DRY | 5.24 | 0.3 | 1003 |
| BH02 | 20.0 | 1.3 | 0 | 0 | 0 | DRY | 5.03 | 0.3 | 1002 |
| BH03 | 20.4 | 0.8 | 0 | 0 | 0 | DRY | 3.06 | 0.3 | 1002 |

# APPENDIX C

## Chemical Laboratory Results

**Sebastian Lea Wurzbach**
Wheal Jane Services
Old Mine Offices
Wheal Jane
Baldhu
Truro
Cornwall
TR3 6EE

**t:** 01872 560200
**f:** 01872 560826
**e:** swurzbach@wheal-jane.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

**t:** 01923 225404
**f:** 01923 237404
**e:** reception@i2analytical.com

# Analytical Report Number : 23-43534

| | | | |
|---|---|---|---|
| **Project / Site name:** | Park Gerry | **Samples received on:** | 05/07/2023 |
| **Your job number:** | 21665 | **Samples instructed on/ Analysis started on:** | 06/07/2023 |
| **Your order number:** | 21665 | **Analysis completed by:** | 17/07/2023 |
| **Report Issue Number:** | 1 | **Report issued on:** | 17/07/2023 |
| **Samples Analysed:** | 15 soil samples | | |

Izabela Wójcik
**Signed:**

Izabela Wójcik
Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

**Analytical Report Number: 23-43534**
**Project / Site name: Park Gerry**
**Your Order No: 21665**

| Lab Sample Number | | | | 2738960 | 2738961 | 2738962 | 2738963 | 2738964 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS01 | WS01 | WS02 | WS02 | WS02 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.10 | 0.50 | 0.10 | 0.50 | 1.50 |
| **Date Sampled** | | | | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 7.1 | 9.4 | 5 | 11 | 14 |
| Total mass of sample received | kg | 0.001 | NONE | 0.8 | 0.9 | 0.9 | 0.8 | 0.9 |

**General Inorganics**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 6 | - | - | 7.8 | - |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Thiocyanate as SCN | mg/kg | 5 | NONE | < 5.0 | - | - | < 5.0 | - |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 960 | 370 | 1200 | 3900 | 1400 |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | 14 | 7.8 | 18 | 40 | 110 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 0.0068 | 0.0039 | 0.0089 | 0.02 | 0.056 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | 6.8 | 3.9 | 8.9 | 20 | 55.9 |
| Sulphide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | 1.1 | < 1.0 |
| Organic Matter (automated) | % | 0.1 | MCERTS | 6.6 | - | - | 2.5 | - |

**Total Phenols**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | - | < 1.0 | - |

**Speciated PAHs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | < 0.05 | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | < 0.05 | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | < 0.05 | - |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | < 0.05 | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.09 | - | - | < 0.05 | - |
| Anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | < 0.05 | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.24 | - | - | < 0.05 | - |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.25 | - | - | < 0.05 | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.09 | - | - | < 0.05 | - |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.12 | - | - | < 0.05 | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.14 | - | - | < 0.05 | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | < 0.05 | - | - | < 0.05 | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.11 | - | - | < 0.05 | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.07 | - | - | < 0.05 | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | < 0.05 | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.09 | - | - | < 0.05 | - |

**Total PAH**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 1.2 | - | - | < 0.80 | - |

**Analytical Report Number: 23-43534**
**Project / Site name: Park Gerry**
**Your Order No: 21665**

| Lab Sample Number | | | | 2738960 | 2738961 | 2738962 | 2738963 | 2738964 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | WS01 | WS01 | WS02 | WS02 | WS02 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.10 | 0.50 | 0.10 | 0.50 | 1.50 |
| Date Sampled | | | | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 360 | 110 | 1200 | 13000 | 2000 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.5 | 0.5 | 1.1 | 0.6 | 0.8 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | 7.5 | < 1.8 | 14 | < 1.8 | < 1.8 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 100 | 73 | 100 | 110 | 150 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 340 | 79 | 1300 | 11000 | 5600 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 52 | 160 | 920 | 79 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 60 | 37 | 52 | 37 | 79 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 370 | 190 | 580 | 930 | 610 |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene~ | µg/kg | 5 | MCERTS | < 5.0 | - | - | < 5.0 | - |
| Toluene~ | µg/kg | 5 | MCERTS | < 5.0 | - | - | < 5.0 | - |
| Ethylbenzene^ | µg/kg | 5 | NONE | < 5.0 | - | - | < 5.0 | - |
| p & m-xylene^ | µg/kg | 5 | NONE | < 5.0 | - | - | < 5.0 | - |
| o-xylene^ | µg/kg | 5 | NONE | < 5.0 | - | - | < 5.0 | - |
| MTBE (Methyl Tertiary Butyl Ether)~ | µg/kg | 5 | NONE | < 5.0 | - | - | < 5.0 | - |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | < 0.10 | - |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | < 0.10 | - |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | < 0.10 | - |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | < 1.0 | - |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | < 2.0 | - |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | - | - | < 8.0 | - |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | - | - | < 8.0 | - |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | NONE | < 10 | - | - | < 10 | - |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | < 0.10 | - |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | < 0.10 | - |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | < 0.10 | - |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | < 1.0 | - |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | < 2.0 | - |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | - | - | < 10 | - |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | - | - | < 10 | - |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | NONE | < 10 | - | - | < 10 | - |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number: 23-43534**
**Project / Site name: Park Gerry**
**Your Order No: 21665**

| Lab Sample Number | | | | 2738965 | 2738966 | 2738967 | 2738968 | 2738969 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS03 | WS03 | WS03 | WS04 | WS04 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 0.60 | 4.50 | 0.30 | 2.50 |
| **Date Sampled** | | | | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 8.1 | 13 | 17 | 8.1 | 12 |
| Total mass of sample received | kg | 0.001 | NONE | 0.8 | 0.9 | 0.9 | 0.9 | 0.8 |

**General Inorganics**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 6.2 | - | - | - | 6.9 |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Thiocyanate as SCN | mg/kg | 5 | NONE | < 5.0 | - | - | - | < 5.0 |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 1100 | 300 | 200 | 860 | 280 |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | 9.5 | 10 | 8.9 | 10 | 6.4 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 0.0047 | 0.0051 | 0.0045 | 0.005 | 0.0032 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | 4.7 | 5.1 | 4.5 | 5 | 3.2 |
| Sulphide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Organic Matter (automated) | % | 0.1 | MCERTS | 6 | - | - | - | 0.3 |

**Total Phenols**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |

**Speciated PAHs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.23 | - | - | - | < 0.05 |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.07 | - | - | - | < 0.05 |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 0.83 | - | - | - | < 0.05 |
| Pyrene | mg/kg | 0.05 | MCERTS | 0.75 | - | - | - | < 0.05 |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.39 | - | - | - | < 0.05 |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.4 | - | - | - | < 0.05 |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.53 | - | - | - | < 0.05 |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.17 | - | - | - | < 0.05 |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.41 | - | - | - | < 0.05 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.28 | - | - | - | < 0.05 |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | < 0.05 |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.34 | - | - | - | < 0.05 |

**Total PAH**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 4.4 | - | - | - | < 0.80 |

**Analytical Report Number: 23-43534**
**Project / Site name: Park Gerry**
**Your Order No: 21665**

| Lab Sample Number | | | | 2738965 | 2738966 | 2738967 | 2738968 | 2738969 |
|---|---|---|---|---|---|---|---|---|
| Sample Reference | | | | WS03 | WS03 | WS03 | WS04 | WS04 |
| Sample Number | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m) | | | | 0.20 | 0.60 | 4.50 | 0.30 | 2.50 |
| Date Sampled | | | | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 |
| Time Taken | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 390 | 96 | 3.2 | 420 | 130 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.5 | 0.4 | 0.3 | 0.8 | 0.9 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | 0.4 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 73 | 180 | 310 | 88 | 320 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 400 | 120 | 32 | 400 | 290 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 120 | 54 | 3 | 110 | 16 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 47 | 84 | 110 | 51 | 110 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 370 | 470 | 1500 | 430 | 610 |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene~ | µg/kg | 5 | MCERTS | < 5.0 | - | - | - | < 5.0 |
| Toluene~ | µg/kg | 5 | MCERTS | < 5.0 | - | - | - | < 5.0 |
| Ethylbenzene^ | µg/kg | 5 | NONE | < 5.0 | - | - | - | < 5.0 |
| p & m-xylene^ | µg/kg | 5 | NONE | < 5.0 | - | - | - | < 5.0 |
| o-xylene^ | µg/kg | 5 | NONE | < 5.0 | - | - | - | < 5.0 |
| MTBE (Methyl Tertiary Butyl Ether)~ | µg/kg | 5 | NONE | < 5.0 | - | - | - | < 5.0 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | < 0.10 |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | < 0.10 |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | < 0.10 |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | - | < 2.0 |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | - | - | - | < 8.0 |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | - | - | - | < 8.0 |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | NONE | < 10 | - | - | - | < 10 |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | < 0.10 |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | < 0.10 |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | < 0.10 |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | < 1.0 |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | - | < 2.0 |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | - | - | - | < 10 |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | - | - | - | < 10 |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | NONE | 11 | - | - | - | < 10 |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number: 23-43534**
**Project / Site name: Park Gerry**
**Your Order No: 21665**

| Lab Sample Number | | | | 2738970 | 2738971 | 2738972 | 2738973 | 2738974 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS05 | WS05 | WS05 | WS06 | WS06 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.10 | 0.40 | 4.70 | 0.60 | 1.20 |
| **Date Sampled** | | | | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 6.3 | 12 | 18 | 15 | 15 |
| Total mass of sample received | kg | 0.001 | NONE | 0.8 | 0.9 | 0.9 | 0.9 | 0.9 |

**General Inorganics**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| pH - Automated | pH Units | N/A | MCERTS | 6.6 | - | - | - | - |
| Total Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Free Cyanide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Thiocyanate as SCN | mg/kg | 5 | NONE | < 5.0 | - | - | - | - |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | 970 | 480 | 120 | 420 | 180 |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | 9 | 8.3 | 9.5 | 2.8 | 4 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | g/l | 0.00125 | MCERTS | 0.0045 | 0.0041 | 0.0047 | 0.0014 | 0.002 |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | 4.5 | 4.1 | 4.7 | 1.4 | 2 |
| Sulphide | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Organic Matter (automated) | % | 0.1 | MCERTS | 5.7 | - | - | - | - |

**Total Phenols**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |

**Speciated PAHs**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Naphthalene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | 0.07 | - | - | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | < 0.05 | - | - | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | 0.55 | - | - | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | 0.14 | - | - | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | 1.7 | - | - | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | 1.5 | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | 0.74 | - | - | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | 0.79 | - | - | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.99 | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | 0.37 | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | 0.75 | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | 0.5 | - | - | - | - |
| Dibenz(a,h)anthracene | mg/kg | 0.05 | MCERTS | 0.13 | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | 0.6 | - | - | - | - |

**Total PAH**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | 8.88 | - | - | - | - |

**Analytical Report Number: 23-43534**
**Project / Site name: Park Gerry**
**Your Order No: 21665**

| Lab Sample Number | | | | 2738970 | 2738971 | 2738972 | 2738973 | 2738974 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | WS05 | WS05 | WS05 | WS06 | WS06 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.10 | 0.40 | 4.70 | 0.60 | 1.20 |
| **Date Sampled** | | | | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 | 29/06/2023 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 450 | 160 | 91 | 120 | 130 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 1 | 0.7 | 0.4 | 0.8 | 0.5 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | < 1.8 | < 1.8 | < 1.8 | < 1.8 | < 1.8 |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 62 | 74 | 360 | 200 | 140 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 380 | 100 | 160 | 150 | 100 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 160 | 62 | 8.8 | 87 | 95 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 41 | 47 | 130 | 95 | 72 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 410 | 260 | 1300 | 680 | 480 |
| **Monoaromatics & Oxygenates** | | | | | | | | |
| Benzene~ | µg/kg | 5 | MCERTS | < 5.0 | - | - | - | - |
| Toluene~ | µg/kg | 5 | MCERTS | < 5.0 | - | - | - | - |
| Ethylbenzene^ | µg/kg | 5 | NONE | < 5.0 | - | - | - | - |
| p & m-xylene^ | µg/kg | 5 | NONE | < 5.0 | - | - | - | - |
| o-xylene^ | µg/kg | 5 | NONE | < 5.0 | - | - | - | - |
| MTBE (Methyl Tertiary Butyl Ether)~ | µg/kg | 5 | NONE | < 5.0 | - | - | - | - |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | - |
| TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | - |
| TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | - |
| TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | - | - |
| TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | - | - | - | - |
| TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$ | mg/kg | 8 | MCERTS | < 8.0 | - | - | - | - |
| TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$ | mg/kg | 10 | NONE | < 10 | - | - | - | - |
| TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | - |
| TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | - |
| TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$ | mg/kg | 0.1 | NONE | < 0.10 | - | - | - | - |
| TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$ | mg/kg | 1 | MCERTS | < 1.0 | - | - | - | - |
| TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$ | mg/kg | 2 | MCERTS | < 2.0 | - | - | - | - |
| TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | < 10 | - | - | - | - |
| TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$ | mg/kg | 10 | MCERTS | 16 | - | - | - | - |
| TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$ | mg/kg | 10 | NONE | 19 | - | - | - | - |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number : 23-43534**
**Project / Site name: Park Gerry**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2738960 | WS01 | None Supplied | 0.1 | Brown loam with vegetation. |
| 2738961 | WS01 | None Supplied | 0.5 | Brown loam with vegetation. |
| 2738962 | WS02 | None Supplied | 0.1 | Brown loam with gravel and vegetation. |
| 2738963 | WS02 | None Supplied | 0.5 | Brown sand with gravel. |
| 2738964 | WS02 | None Supplied | 1.5 | Brown sand with gravel. |
| 2738965 | WS03 | None Supplied | 0.2 | Brown loam with vegetation. |
| 2738966 | WS03 | None Supplied | 0.6 | Brown sand. |
| 2738967 | WS03 | None Supplied | 4.5 | Brown loam with gravel and vegetation. |
| 2738968 | WS04 | None Supplied | 0.3 | Brown loam with gravel and vegetation. |
| 2738969 | WS04 | None Supplied | 2.5 | Brown loam with gravel and vegetation. |
| 2738970 | WS05 | None Supplied | 0.1 | Brown loam with gravel and vegetation. |
| 2738971 | WS05 | None Supplied | 0.4 | Brown sand with gravel and vegetation. |
| 2738972 | WS05 | None Supplied | 4.7 | Brown sand with gravel and vegetation. |
| 2738973 | WS06 | None Supplied | 0.6 | Brown sand with gravel. |
| 2738974 | WS06 | None Supplied | 1.2 | Brown loam with gravel. |

**Analytical Report Number : 23-43534**
**Project / Site name: Park Gerry**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Sulphate, water soluble, in soil (16hr extraction) | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES. | In-house method based on Second Site Properties version 3 | L038-PL | D | MCERTS |
| Free cyanide in soil | Determination of free cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar) | L080-PL | W | MCERTS |
| Speciated EPA-16 PAHs in soil | Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards. | In-house method based on USEPA 8270 | L064-PL | D | MCERTS |
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement. | In house method. | L099-PL | D | MCERTS |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode. | In-house method | L010-PL | D | MCERTS |
| Thiocyanate in soil | Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer). | In-house method | L082-PL | D | NONE |
| Total sulphate (as SO4 in soil) | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES. | In house method. | L038-PL | D | MCERTS |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry. | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar) | L080-PL | W | MCERTS |
| BTEX and MTBE in soil (Monoaromatics) | Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited | In-house method based on USEPA8260 | L073B-PL | W | MCERTS |
| TPHCWG (Soil) | Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID. | In-house method with silica gel split/clean up. | L088/76-PL | W | MCERTS |
| Organic matter (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate. | In house method. | L009-PL | D | MCERTS |

**Analytical Report Number : 23-43534**
**Project / Site name: Park Gerry**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Hexavalent chromium in soil | Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry. | In-house method | L080-PL | W | MCERTS |
| Sulphate, water soluble, in soil | Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent). | In house method. | L038-PL | D | MCERTS |

**For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).**
**For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).**
**For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**
**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## Information in Support of Analytical Results

### List of HWOL Acronyms and Operators

| Acronym | Descriptions |
|---|---|
| HS | Headspace Analysis |
| MS | Mass spectrometry |
| FID | Flame Ionisation Detector |
| GC | Gas Chromatography |
| EH | Extractable Hydrocarbons (i.e. everything extracted by the solvent(s)) |
| CU | Clean-up - e.g. by Florisil®, silica gel |
| 1D | GC - Single coil/column gas chromatography |
| 2D | GC-GC - Double coil/column gas chromatography |
| Total | Aliphatics & Aromatics |
| AL | Aliphatics |
| AR | Aromatics |
| #1 | EH_2D_Total but with humics mathematically subtracted |
| #2 | EH_2D_Total but with fatty acids mathematically subtracted |
| _ | Operator - understore to separate acronyms (exception for +) |
| + | Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total |

~ - Quality control surrogate recovery outside of limits, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.
^ - Data reported unaccredited due to quality control parameter failure associated with this result; The result should be considered as being deviating and may be compromised.

# Sample Deviation Report

**Analytical Report Number : 23-43534**

**Project / Site name: Park Gerry**

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

| Sample ID | Other ID | Sample Type | Lab Sample Number | Sample Deviation | Test Name | Test Ref | Test Deviation |
|---|---|---|---|---|---|---|---|
| WS01 | None Supplied | S | 2738960 | c | Free cyanide in soil | L080-PL | c |
| WS01 | None Supplied | S | 2738960 | c | Sulphide in soil | L010-PL | c |
| WS01 | None Supplied | S | 2738960 | c | Total cyanide in soil | L080-PL | c |
| WS01 | None Supplied | S | 2738961 | c | Free cyanide in soil | L080-PL | c |
| WS01 | None Supplied | S | 2738961 | c | Sulphide in soil | L010-PL | c |
| WS01 | None Supplied | S | 2738961 | c | Total cyanide in soil | L080-PL | c |
| WS02 | None Supplied | S | 2738962 | c | Free cyanide in soil | L080-PL | c |
| WS02 | None Supplied | S | 2738962 | c | Sulphide in soil | L010-PL | c |
| WS02 | None Supplied | S | 2738962 | c | Total cyanide in soil | L080-PL | c |
| WS02 | None Supplied | S | 2738963 | c | Free cyanide in soil | L080-PL | c |
| WS02 | None Supplied | S | 2738963 | c | Sulphide in soil | L010-PL | c |
| WS02 | None Supplied | S | 2738963 | c | Total cyanide in soil | L080-PL | c |
| WS02 | None Supplied | S | 2738964 | c | Free cyanide in soil | L080-PL | c |
| WS02 | None Supplied | S | 2738964 | c | Sulphide in soil | L010-PL | c |
| WS02 | None Supplied | S | 2738964 | c | Total cyanide in soil | L080-PL | c |
| WS03 | None Supplied | S | 2738965 | c | Free cyanide in soil | L080-PL | c |
| WS03 | None Supplied | S | 2738965 | c | Sulphide in soil | L010-PL | c |
| WS03 | None Supplied | S | 2738965 | c | Total cyanide in soil | L080-PL | c |
| WS03 | None Supplied | S | 2738966 | c | Free cyanide in soil | L080-PL | c |
| WS03 | None Supplied | S | 2738966 | c | Sulphide in soil | L010-PL | c |
| WS03 | None Supplied | S | 2738966 | c | Total cyanide in soil | L080-PL | c |
| WS03 | None Supplied | S | 2738967 | c | Free cyanide in soil | L080-PL | c |
| WS03 | None Supplied | S | 2738967 | c | Sulphide in soil | L010-PL | c |
| WS03 | None Supplied | S | 2738967 | c | Total cyanide in soil | L080-PL | c |
| WS04 | None Supplied | S | 2738968 | c | Free cyanide in soil | L080-PL | c |
| WS04 | None Supplied | S | 2738968 | c | Sulphide in soil | L010-PL | c |
| WS04 | None Supplied | S | 2738968 | c | Total cyanide in soil | L080-PL | c |
| WS04 | None Supplied | S | 2738969 | c | Free cyanide in soil | L080-PL | c |
| WS04 | None Supplied | S | 2738969 | c | Sulphide in soil | L010-PL | c |
| WS04 | None Supplied | S | 2738969 | c | Total cyanide in soil | L080-PL | c |
| WS05 | None Supplied | S | 2738970 | c | Free cyanide in soil | L080-PL | c |
| WS05 | None Supplied | S | 2738970 | c | Sulphide in soil | L010-PL | c |
| WS05 | None Supplied | S | 2738970 | c | Total cyanide in soil | L080-PL | c |
| WS05 | None Supplied | S | 2738971 | c | Free cyanide in soil | L080-PL | c |
| WS05 | None Supplied | S | 2738971 | c | Sulphide in soil | L010-PL | c |
| WS05 | None Supplied | S | 2738971 | c | Total cyanide in soil | L080-PL | c |
| WS05 | None Supplied | S | 2738972 | c | Free cyanide in soil | L080-PL | c |
| WS05 | None Supplied | S | 2738972 | c | Sulphide in soil | L010-PL | c |
| WS05 | None Supplied | S | 2738972 | c | Total cyanide in soil | L080-PL | c |
| WS06 | None Supplied | S | 2738973 | c | Free cyanide in soil | L080-PL | c |
| WS06 | None Supplied | S | 2738973 | c | Sulphide in soil | L010-PL | c |
| WS06 | None Supplied | S | 2738973 | c | Total cyanide in soil | L080-PL | c |
| WS06 | None Supplied | S | 2738974 | c | Free cyanide in soil | L080-PL | c |
| WS06 | None Supplied | S | 2738974 | c | Sulphide in soil | L010-PL | c |
| WS06 | None Supplied | S | 2738974 | c | Total cyanide in soil | L080-PL | c |

**Sebastian Lea Wurzbach**
Wheal Jane Services
Old Mine Offices
Wheal Jane
Baldhu
Truro
Cornwall
TR3 6EE

**t:** 01872 560200
**f:** 01872 560826
**e:** swurzbach@wheal-jane.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

**t:** 01923 225404
**f:** 01923 237404
**e:** reception@i2analytical.com

# Analytical Report Number : 23-46196

| | | | |
|---|---|---|---|
| **Project / Site name:** | Park Gerry | **Samples received on:** | 05/07/2023 |
| **Your job number:** | 21665 | **Samples instructed on/ Analysis started on:** | 21/07/2023 |
| **Your order number:** | 21665 | **Analysis completed by:** | 03/08/2023 |
| **Report Issue Number:** | 1 | **Report issued on:** | 03/08/2023 |
| **Samples Analysed:** | 2 soil samples | | |

**Signed:**

Dominika Warjan
Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

| | |
|---|---|
| soils | - 4 weeks from reporting |
| leachates | - 2 weeks from reporting |
| waters | - 2 weeks from reporting |
| asbestos | - 6 months from reporting |

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

**Analytical Report Number: 23-46196**
**Project / Site name: Park Gerry**
**Your Order No: 21665**

| Lab Sample Number | | | | 2755105 | 2755106 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS03 | WS04 |
| **Sample Number** | | | | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 0.30 |
| **Date Sampled** | | | | 29/06/2023 | 29/06/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| Stone Content | % | 0.1 | NONE | 22 | 15 |
| Moisture Content | % | 0.01 | NONE | 8.1 | 8.1 |
| Total mass of sample received | kg | 0.001 | NONE | 0.8 | 0.9 |
| **Heavy Metals / Metalloids** | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 280 | 370 |
| **PBET Results (Bioaccessibile Fraction)** | | | | | |
| Arsenic (Stomach) | % | 0.5 | NONE | < 0.5 | < 0.5 |
| Arsenic (Intestine 1) | % | 0.5 | NONE | 0.7 | 0.6 |
| Arsenic (Intestine 2) | % | 0.5 | NONE | 0.8 | 0.7 |
| **Bioaccessible Fraction %** | Maximum % BAF | | | **0.8 % (I2)** | **0.7 % (I2)** |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number : 23-46196**
**Project / Site name: Park Gerry**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2755105 | WS03 | None Supplied | 0.2 | Brown loam with vegetation. |
| 2755106 | WS04 | None Supplied | 0.3 | Brown loam with gravel and vegetation. |

**Analytical Report Number : 23-46196**
**Project / Site name: Park Gerry**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |
| PBET | In House Method | In house method based on Ruby et.al. | | D | NONE |

**For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).**
**For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).**
**For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**
**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

**Sebastian Lea Wurzbach**
Wheal Jane Services
Old Mine Offices
Wheal Jane
Baldhu
Truro
Cornwall
TR3 6EE

**t:** 01872 560200
**f:** 01872 560826
**e:** swurzbach@wheal-jane.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

**t:** 01923 225404
**f:** 01923 237404
**e:** reception@i2analytical.com

# Analytical Report Number : 23-52794

| | | | |
|---|---|---|---|
| **Project / Site name:** | Park Gerry | **Samples received on:** | 05/07/2023 |
| **Your job number:** | 21665 | **Samples instructed on/ Analysis started on:** | 24/08/2023 |
| **Your order number:** | 21665 | **Analysis completed by:** | 25/08/2023 |
| **Report Issue Number:** | 1 | **Report issued on:** | 25/08/2023 |
| **Samples Analysed:** | 2 soil samples | | |

Izabela Wójcik

**Signed:**

Izabela Wójcik
Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

| | |
|---|---|
| soils | - 4 weeks from reporting |
| leachates | - 2 weeks from reporting |
| waters | - 2 weeks from reporting |
| asbestos | - 6 months from reporting |

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

**Analytical Report Number: 23-52794**
**Project / Site name: Park Gerry**
**Your Order No: 21665**

| **Lab Sample Number** | | | | 2790880 | 2790881 |
|---|---|---|---|---|---|
| **Sample Reference** | | | | WS02 | WS02 |
| **Sample Number** | | | | Original prepared sample retest | Repeat prepared sample retest |
| **Depth (m)** | | | | 0.50 | 0.50 |
| **Date Sampled** | | | | 29/06/2023 | 29/06/2023 |
| **Time Taken** | | | | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 11 | 11 |
| Total mass of sample received | kg | 0.001 | NONE | 0.8 | 0.8 |
| **Heavy Metals / Metalloids** | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 11000 | 9500 |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number : 23-52794**
**Project / Site name: Park Gerry**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 2790880 | WS02 | prepared sampl | 0.5 | Brown sand with gravel. |
| 2790881 | WS02 | prepared sampl | 0.5 | Brown sand with gravel. |

**Analytical Report Number : 23-52794**
**Project / Site name: Park Gerry**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES. | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil. | L038-PL | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically. (30 oC) | In house method. | L019-UK/PL | W | NONE |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL | D | NONE |

**For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).**
**For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).**
**For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**
**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

Wheal Jane Services
Old Mine Offices
Wheal Jane
Baldhu
Truro
Cornwall
TR3 6EE

**t:** 01872 560200

**e:** mvickers@wheal-jane.co.uk

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

**t:** 01923 225404
**f:** 01923 237404
**e:** reception@i2analytical.com

# Analytical Report Number : 24-001378

| | | | |
|---|---|---|---|
| **Project / Site name:** | Park Gerry, Camborne | **Samples received on:** | 02/02/2024 |
| **Your job number:** | 21999 | **Samples instructed on/ Analysis started on:** | 02/02/2024 |
| **Your order number:** | 21999 | **Analysis completed by:** | 09/02/2024 |
| **Report Issue Number:** | 1 | **Report issued on:** | 14/02/2024 |
| **Samples Analysed:** | 15 soil samples | | |

**Signed:**

Joanna Szwagrzak
Reporting Specialist
**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

**Analytical Report Number: 24-001378**
**Project / Site name: Park Gerry, Camborne**
**Your Order No: 21999**

| Lab Sample Number | | | | 108861 | 108862 | 108863 | 108864 | 108865 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | HP01 | HP01 | HP01 | HP02 | HP02 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 0.50 | 1.00 | 0.10 | 0.40 |
| **Date Sampled** | | | | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 14 | 18 | 20 | 17 | 18 |
| Total mass of sample received | kg | 0.1 | NONE | 0.8 | 0.8 | 0.9 | 0.9 | 0.8 |
| **General Inorganics** | | | | | | | | |
| pH (L099) | pH Units | N/A | MCERTS | - | 7.9 | - | - | - |
| Total Cyanide | mg/kg | 1 | MCERTS | - | - | - | - | - |
| Free Cyanide | mg/kg | 1 | MCERTS | - | - | - | - | - |
| Thiocyanate as SCN | mg/kg | 5 | NONE | - | - | - | - | - |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - | - | - | - | - |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | - | - | - | - | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | - | - | - | - | - |
| Sulphide | mg/kg | 1 | MCERTS | - | - | - | - | - |
| Organic Matter (automated) | % | 0.1 | MCERTS | - | 1.6 | - | - | - |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | - | - | - | - |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | - | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | - | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Dibenzo(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | - | - | - |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | - | - | - | - | - |

**Analytical Report Number: 24-001378**
**Project / Site name: Park Gerry, Camborne**
**Your Order No: 21999**

| Lab Sample Number | | | | 108861 | 108862 | 108863 | 108864 | 108865 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | HP01 | HP01 | HP01 | HP02 | HP02 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.20 | 0.50 | 1.00 | 0.10 | 0.40 |
| **Date Sampled** | | | | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 1400 | 5300 | 2300 | 1500 | 1900 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.9 | 0.2 | < 0.2 | 0.6 | 0.9 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | - | - | - | - | - |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 70 | 78 | 97 | 86 | 93 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 1100 | 2000 | 5000 | 2100 | 3500 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 190 | 700 | 260 | 250 | 230 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 41 | 23 | 43 | 54 | 64 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | 2.1 | < 1.0 | < 1.0 | 1.3 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 490 | 250 | 450 | 800 | 840 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPHCWG - Aliphatic >C5 - C6 HS_1D_AL | mg/kg | 0.02 | NONE | - | - | - | - | - |
| TPHCWG - Aliphatic >C6 - C8 HS_1D_AL | mg/kg | 0.02 | NONE | - | - | - | - | - |
| TPHCWG - Aliphatic >C8 - C10 HS_1D_AL | mg/kg | 0.05 | NONE | - | - | - | - | - |
| TPHCWG - Aliphatic >C10 - C12 EH_CU_1D_AL_#1_#2 | mg/kg | 1 | MCERTS | - | - | - | - | - |
| TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL_#1_#2 | mg/kg | 2 | MCERTS | - | - | - | - | - |
| TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL_#1_#2 | mg/kg | 8 | MCERTS | - | - | - | - | - |
| TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL_#1_#2 | mg/kg | 8 | MCERTS | - | - | - | - | - |
| TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL_#1_#2 | mg/kg | 10 | NONE | - | - | - | - | - |
| TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR | mg/kg | 0.01 | NONE | - | - | - | - | - |
| TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR | mg/kg | 0.01 | NONE | - | - | - | - | - |
| TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR | mg/kg | 0.05 | NONE | - | - | - | - | - |
| TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR_#1_#2 | mg/kg | 1 | MCERTS | - | - | - | - | - |
| TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR_#1_#2 | mg/kg | 2 | MCERTS | - | - | - | - | - |
| TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR_#1_#2 | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR_#1_#2 | mg/kg | 10 | MCERTS | - | - | - | - | - |
| TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR_#1_#2 | mg/kg | 10 | NONE | - | - | - | - | - |
| **VOCs** | | | | | | | | |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | - | - | - | - | - |
| Benzene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| Toluene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| Ethylbenzene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| p & m-Xylene | µg/kg | 5 | MCERTS | - | - | - | - | - |
| o-Xylene | µg/kg | 5 | MCERTS | - | - | - | - | - |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number: 24-001378**
**Project / Site name: Park Gerry, Camborne**
**Your Order No: 21999**

| Lab Sample Number | | | | 108866 | 108867 | 108868 | 108869 | 108870 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | HP03 | HP03 | HP03 | HP04 | HP04 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.15 | 0.60 | 1.20 | 0.20 | 0.50 |
| **Date Sampled** | | | | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 17 | 19 | 21 | 15 | 14 |
| Total mass of sample received | kg | 0.1 | NONE | 0.9 | 0.9 | 0.7 | 0.8 | 0.9 |
| **General Inorganics** | | | | | | | | |
| pH (L099) | pH Units | N/A | MCERTS | - | - | 7.6 | - | - |
| Total Cyanide | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | - |
| Free Cyanide | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | - |
| Thiocyanate as SCN | mg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - | - | 340 | - | - |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | - | - | 11 | - | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | - | - | 5.44 | - | - |
| Sulphide | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | - |
| Organic Matter (automated) | % | 0.1 | MCERTS | - | - | 0.7 | - | - |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | - |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | < 0.05 | - | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | < 0.05 | - | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Dibenzo(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | < 0.05 | - | - |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | - | - | < 0.80 | - | - |

**Analytical Report Number: 24-001378**
**Project / Site name: Park Gerry, Camborne**
**Your Order No: 21999**

| Lab Sample Number | | | | 108866 | 108867 | 108868 | 108869 | 108870 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | HP03 | HP03 | HP03 | HP04 | HP04 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.15 | 0.60 | 1.20 | 0.20 | 0.50 |
| **Date Sampled** | | | | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 360 | 51 | 45 | 54 | 78 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 0.7 | 0.3 | 0.5 | < 0.2 | < 0.2 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | < 0.2 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | - | - | < 1.8 | - | - |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 110 | 170 | 180 | 59 | 71 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 480 | 83 | 89 | 47 | 64 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 98 | 30 | 61 | 26 | 31 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 56 | 80 | 90 | 44 | 45 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 470 | 330 | 300 | 160 | 200 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPHCWG - Aliphatic >C5 - C6 HS_1D_AL | mg/kg | 0.02 | NONE | - | - | < 0.020 | - | - |
| TPHCWG - Aliphatic >C6 - C8 HS_1D_AL | mg/kg | 0.02 | NONE | - | - | < 0.020 | - | - |
| TPHCWG - Aliphatic >C8 - C10 HS_1D_AL | mg/kg | 0.05 | NONE | - | - | < 0.050 | - | - |
| TPHCWG - Aliphatic >C10 - C12 EH_CU_1D_AL_#1_#2 | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | - |
| TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL_#1_#2 | mg/kg | 2 | MCERTS | - | - | < 2.0 | - | - |
| TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL_#1_#2 | mg/kg | 8 | MCERTS | - | - | < 8.0 | - | - |
| TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL_#1_#2 | mg/kg | 8 | MCERTS | - | - | < 8.0 | - | - |
| TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL_#1_#2 | mg/kg | 10 | NONE | - | - | < 10 | - | - |
| TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR | mg/kg | 0.01 | NONE | - | - | < 0.010## | - | - |
| TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR | mg/kg | 0.01 | NONE | - | - | < 0.010 | - | - |
| TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR | mg/kg | 0.05 | NONE | - | - | < 0.050 | - | - |
| TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR_#1_#2 | mg/kg | 1 | MCERTS | - | - | < 1.0 | - | - |
| TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR_#1_#2 | mg/kg | 2 | MCERTS | - | - | < 2.0 | - | - |
| TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR_#1_#2 | mg/kg | 10 | MCERTS | - | - | < 10 | - | - |
| TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR_#1_#2 | mg/kg | 10 | MCERTS | - | - | < 10 | - | - |
| TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR_#1_#2 | mg/kg | 10 | NONE | - | - | < 10 | - | - |
| **VOCs** | | | | | | | | |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | - | - | < 5.0 | - | - |
| Benzene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| Toluene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| Ethylbenzene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| p & m-Xylene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |
| o-Xylene | µg/kg | 5 | MCERTS | - | - | < 5.0 | - | - |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number: 24-001378**
**Project / Site name: Park Gerry, Camborne**
**Your Order No: 21999**

| Lab Sample Number | | | | 108871 | 108872 | 108873 | 108874 | 108875 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | HP05 | HP05 | HP06 | HP06 | HP06 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.10 | 0.40 | 0.25 | 0.60 | 0.90 |
| **Date Sampled** | | | | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| Stone Content | % | 0.1 | NONE | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |
| Moisture Content | % | 0.01 | NONE | 16 | 19 | 18 | 19 | 21 |
| Total mass of sample received | kg | 0.1 | NONE | 0.9 | 0.8 | 0.9 | 0.8 | 0.8 |
| **General Inorganics** | | | | | | | | |
| pH (L099) | pH Units | N/A | MCERTS | 7.1 | - | - | 7.5 | - |
| Total Cyanide | mg/kg | 1 | MCERTS | - | - | - | < 1.0 | - |
| Free Cyanide | mg/kg | 1 | MCERTS | - | - | - | < 1.0 | - |
| Thiocyanate as SCN | mg/kg | 5 | NONE | - | - | - | < 5.0 | - |
| Total Sulphate as SO4 | mg/kg | 50 | MCERTS | - | - | - | 240 | - |
| Water Soluble Sulphate as SO4 16hr extraction (2:1) | mg/kg | 2.5 | MCERTS | - | - | - | 14 | - |
| Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent) | mg/l | 1.25 | MCERTS | - | - | - | 7.03 | - |
| Sulphide | mg/kg | 1 | MCERTS | - | - | - | < 1.0 | - |
| Organic Matter (automated) | % | 0.1 | MCERTS | 5.2 | - | - | 1.2 | - |
| **Total Phenols** | | | | | | | | |
| Total Phenols (monohydric) | mg/kg | 1 | MCERTS | - | - | - | < 1.0 | - |
| **Speciated PAHs** | | | | | | | | |
| Naphthalene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Acenaphthylene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Acenaphthene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Fluorene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Phenanthrene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Anthracene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Fluoranthene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Pyrene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Benzo(a)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Chrysene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Benzo(b)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | - | < 0.05 | - |
| Benzo(k)fluoranthene | mg/kg | 0.05 | ISO 17025 | - | - | - | < 0.05 | - |
| Benzo(a)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Dibenzo(a,h)anthracene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| Benzo(ghi)perylene | mg/kg | 0.05 | MCERTS | - | - | - | < 0.05 | - |
| **Total PAH** | | | | | | | | |
| Speciated Total EPA-16 PAHs | mg/kg | 0.8 | ISO 17025 | - | - | - | < 0.80 | - |

**Analytical Report Number: 24-001378**
**Project / Site name: Park Gerry, Camborne**
**Your Order No: 21999**

| Lab Sample Number | | | | 108871 | 108872 | 108873 | 108874 | 108875 |
|---|---|---|---|---|---|---|---|---|
| **Sample Reference** | | | | HP05 | HP05 | HP06 | HP06 | HP06 |
| **Sample Number** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Depth (m)** | | | | 0.10 | 0.40 | 0.25 | 0.60 | 0.90 |
| **Date Sampled** | | | | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 | 30/01/2024 |
| **Time Taken** | | | | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| **Analytical Parameter (Soil Analysis)** | **Units** | **Limit of detection** | **Accreditation Status** | | | | | |
| **Heavy Metals / Metalloids** | | | | | | | | |
| Arsenic (aqua regia extractable) | mg/kg | 1 | MCERTS | 450 | 99 | 370 | 72 | 17 |
| Boron (water soluble) | mg/kg | 0.2 | MCERTS | 1 | 0.7 | 0.8 | 0.2 | 0.4 |
| Cadmium (aqua regia extractable) | mg/kg | 0.2 | MCERTS | < 0.2 | < 0.2 | < 0.2 | < 0.2 | 1.8 |
| Chromium (hexavalent) | mg/kg | 1.8 | MCERTS | - | - | - | < 1.8 | - |
| Chromium (aqua regia extractable) | mg/kg | 1 | MCERTS | 76 | 140 | 97 | 150 | 290 |
| Copper (aqua regia extractable) | mg/kg | 1 | MCERTS | 450 | 150 | 2000 | 500 | 250 |
| Lead (aqua regia extractable) | mg/kg | 1 | MCERTS | 91 | 39 | 67 | 33 | 7.4 |
| Mercury (aqua regia extractable) | mg/kg | 0.3 | MCERTS | < 0.3 | < 0.3 | < 0.3 | < 0.3 | < 0.3 |
| Nickel (aqua regia extractable) | mg/kg | 1 | MCERTS | 45 | 77 | 54 | 73 | 140 |
| Selenium (aqua regia extractable) | mg/kg | 1 | MCERTS | < 1.0 | < 1.0 | 2 | < 1.0 | < 1.0 |
| Zinc (aqua regia extractable) | mg/kg | 1 | MCERTS | 360 | 440 | 540 | 700 | 1400 |
| **Petroleum Hydrocarbons** | | | | | | | | |
| TPHCWG - Aliphatic >C5 - C6 HS_1D_AL | mg/kg | 0.02 | NONE | - | - | - | < 0.020 | - |
| TPHCWG - Aliphatic >C6 - C8 HS_1D_AL | mg/kg | 0.02 | NONE | - | - | - | < 0.020 | - |
| TPHCWG - Aliphatic >C8 - C10 HS_1D_AL | mg/kg | 0.05 | NONE | - | - | - | < 0.050 | - |
| TPHCWG - Aliphatic >C10 - C12 EH_CU_1D_AL_#1_#2 | mg/kg | 1 | MCERTS | - | - | - | < 1.0 | - |
| TPHCWG - Aliphatic >C12 - C16 EH_CU_1D_AL_#1_#2 | mg/kg | 2 | MCERTS | - | - | - | < 2.0 | - |
| TPHCWG - Aliphatic >C16 - C21 EH_CU_1D_AL_#1_#2 | mg/kg | 8 | MCERTS | - | - | - | < 8.0 | - |
| TPHCWG - Aliphatic >C21 - C35 EH_CU_1D_AL_#1_#2 | mg/kg | 8 | MCERTS | - | - | - | < 8.0 | - |
| TPHCWG - Aliphatic >C5 - C35 EH_CU+HS_1D_AL_#1_#2 | mg/kg | 10 | NONE | - | - | - | < 10 | - |
| TPHCWG - Aromatic >EC5 - EC7 HS_1D_AR | mg/kg | 0.01 | NONE | - | - | - | < 0.010## | - |
| TPHCWG - Aromatic >EC7 - EC8 HS_1D_AR | mg/kg | 0.01 | NONE | - | - | - | < 0.010 | - |
| TPHCWG - Aromatic >EC8 - EC10 HS_1D_AR | mg/kg | 0.05 | NONE | - | - | - | < 0.050 | - |
| TPHCWG - Aromatic >EC10 - EC12 EH_CU_1D_AR_#1_#2 | mg/kg | 1 | MCERTS | - | - | - | < 1.0 | - |
| TPHCWG - Aromatic >EC12 - EC16 EH_CU_1D_AR_#1_#2 | mg/kg | 2 | MCERTS | - | - | - | < 2.0 | - |
| TPHCWG - Aromatic >EC16 - EC21 EH_CU_1D_AR_#1_#2 | mg/kg | 10 | MCERTS | - | - | - | < 10 | - |
| TPHCWG - Aromatic >EC21 - EC35 EH_CU_1D_AR_#1_#2 | mg/kg | 10 | MCERTS | - | - | - | < 10 | - |
| TPHCWG - Aromatic >EC5 - EC35 EH_CU+HS_1D_AR_#1_#2 | mg/kg | 10 | NONE | - | - | - | < 10 | - |
| **VOCs** | | | | | | | | |
| MTBE (Methyl Tertiary Butyl Ether) | µg/kg | 5 | NONE | - | - | - | < 5.0 | - |
| Benzene | µg/kg | 5 | MCERTS | - | - | - | < 5.0 | - |
| Toluene | µg/kg | 5 | MCERTS | - | - | - | < 5.0 | - |
| Ethylbenzene | µg/kg | 5 | MCERTS | - | - | - | < 5.0 | - |
| p & m-Xylene | µg/kg | 5 | MCERTS | - | - | - | < 5.0 | - |
| o-Xylene | µg/kg | 5 | MCERTS | - | - | - | < 5.0 | - |

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

**Analytical Report Number : 24-001378**
**Project / Site name: Park Gerry, Camborne**

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description * |
|---|---|---|---|---|
| 108861 | HP01 | None Supplied | 0.2 | Brown loam and sand with gravel and vegetation |
| 108862 | HP01 | None Supplied | 0.5 | Brown loam and sand with gravel and vegetation |
| 108863 | HP01 | None Supplied | 1 | Brown loam and clay with gravel and vegetation |
| 108864 | HP02 | None Supplied | 0.1 | Brown loam and clay with gravel and vegetation |
| 108865 | HP02 | None Supplied | 0.4 | Brown loam and clay with gravel and vegetation |
| 108866 | HP03 | None Supplied | 0.15 | Brown loam and sand with gravel and vegetation |
| 108867 | HP03 | None Supplied | 0.6 | Brown clay and loam with gravel and vegetation |
| 108868 | HP03 | None Supplied | 1.2 | Brown clay and loam with vegetation |
| 108869 | HP04 | None Supplied | 0.2 | Brown clay and loam with vegetation |
| 108870 | HP04 | None Supplied | 0.5 | Brown clay and loam with vegetation |
| 108871 | HP05 | None Supplied | 0.1 | Brown loam and sand with gravel and vegetation |
| 108872 | HP05 | None Supplied | 0.4 | Brown loam and clay with gravel and vegetation |
| 108873 | HP06 | None Supplied | 0.25 | Brown loam and sand with gravel and vegetation |
| 108874 | HP06 | None Supplied | 0.6 | Brown loam and clay with vegetation |
| 108875 | HP06 | None Supplied | 0.9 | Brown clay and loam |

**Analytical Report Number : 24-001378**
**Project / Site name: Park Gerry, Camborne**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| Organic matter (Automated) in soil | Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate (Walkley Black Method) | In-house method | L009B | D | MCERTS |
| Sulphide in soil | Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode | In-house method | L010 | D | MCERTS |
| Moisture Content | Moisture content, determined gravimetrically (up to 30°C) | In-house method | L019B | W | NONE |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight | In-house method based on British Standard Methods and MCERTS requirements. | L019B | D | NONE |
| Metals in soil by ICP-OES | Determination of metals in soil by aqua-regia digestion followed by ICP-OES | In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil | L038B | D | MCERTS |
| Boron, water soluble, in soil | Determination of water soluble boron in soil by hot water extract followed by ICP-OES | In-house method based on Second Site Properties version 3 | L038B | D | MCERTS |
| Total sulphate (as SO4 in soil) | Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES | In-house method | L038B | D | MCERTS |
| Sulphate, water soluble, in soil (16hr extraction) | Sulphate, water soluble, in soil (16hr extraction) | In-house method | L038B | D | MCERTS |
| Speciated EPA-16 PAHs and/or Semi-volatile organic compounds in soil | Determination of semi-volatile organic compounds (including PAH) in soil by extraction in dichloromethane and hexane followed by GC-MS | In-house method based on USEPA 8270 | L064B | D | MCERTS |
| BTEX and/or Volatile organic compounds in soil | Determination of volatile organic compounds in soil by headspace GC-MS | In-house method based on USEPA 8260 | L073B | W | MCERTS |
| Total petroleum hydrocarbons with carbon banding by GC-FID/GC-MS HS in soil | Determination of total petroleum hydrocarbons in soil by GC-FID/GC-MS HS with carbon banding aliphatic and aromatic | In-house method | L076B/L088 | D/W | MCERTS |
| Hexavalent chromium in soil | Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry | In-house method | L080 | W | MCERTS |
| Free cyanide in soil | Determination of free cyanide by distillation followed by colorimetry | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080 | W | MCERTS |
| Monohydric phenols in soil | Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080 | W | MCERTS |
| Total cyanide in soil | Determination of total cyanide by distillation followed by colorimetry | In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton | L080 | W | MCERTS |
| Thiocyanate in soil | Determination of thiocyanate in soil by extraction in water followed by acidification followed by addition of ferric nitrate followed by discrete analyser (spectrophotometer) | In-house method | L082B | D | NONE |

**Analytical Report Number : 24-001378**
**Project / Site name: Park Gerry, Camborne**

**Water matrix abbreviations:**
**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name | Analytical Method Description | Analytical Method Reference | Method number | Wet / Dry Analysis | Accreditation Status |
|---|---|---|---|---|---|
| pH in soil (automated) | Determination of pH in soil by addition of water followed by automated electrometric measurement | In-house method | L099 | D | MCERTS |

**For method numbers ending in 'UK' or 'A' analysis have been carried out in our laboratory in the United Kingdom (Watford).**
**For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).**
**For method numbers ending in 'PL' or 'B' analysis have been carried out in our laboratory in Poland.**
**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**
**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

## - Quality control parameter has a high recovery (outside of limit); however the associated result is below the reporting limit, other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised

# APPENDIX D

# CLEA Analysis

CLEA Software Version 1.071



Report generated 09-Aug-23

Report title Park Gerry, Camborne

Created by WJC

**RESULTS**

Environment Agency

| | | Assessment Criterion (mg kg$^{-1}$) | | | Ratio of ADE to HCV | | | Saturation Limit (mg kg$^{-1}$) | 50% rule? | | Top Two applied? | Apply Top 2 Approach to Produce Group | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | oral | inhalation | combined | oral | inhalation | combined | | Oral | Inhal | | Green vegetables | Root vegetables | Tuber vegetables | Herbaceous fruit | Shrub fruit | Tree fruit |
| 1 | Arsenic (C4SL child) | 4.60E+03 | 1.91E+04 | NR | 1.00 | 0.24 | NR | NR | No | No | Yes | Yes | No | No | No | No | Yes |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | |

Environment Agency

| | Assessment Criterion (mg kg$^{-1}$) | | | Ratio of ADE to HCV | | | Saturation Limit (mg kg$^{-1}$) | 50% rule? | | Top Two applied? | Apply Top 2 Approach to Produce Group | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | oral | inhalation | combined | oral | inhalation | combined | | Oral | Inhal | | Green vegetables | Root vegetables | Tuber vegetables | Herbaceous fruit | Shrub fruit | Tree fruit |
| 21 | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | |

Environment Agency

| | | Soil Distribution | | | | Media Concentrations | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sorbed | Dissolved | Vapour | Total | Soil | Soil gas | Indoor Dust | Outdoor dust at 0.8m | Outdoor dust at 1.6m | Indoor Vapour | Outdoor vapour at 0.8m | Outdoor vapour at 1.6m | Green vegetables | Root vegetables | Tuber vegetables | Herbaceous fruit | Shrub fruit | Tree fruit |
| | | % | % | % | % | mg $kg^{-1}$ | mg $m^{-3}$ | mg $kg^{-1}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW |
| 1 | Arsenic (C4SL child) | 99.9 | 0.1 | 0.0 | 100.0 | 4.60E+03 | NR | NA | 3.91E-05 | 1.68E-05 | NA | 0.00E+00 | 0.00E+00 | NA | NA | NA | NA | NA | NA |
| 2 | | | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | |

Environment Agency

| | Soil Distribution | | | | Media Concentrations | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sorbed | Dissolved | Vapour | Total | Soil | Soil gas | Indoor Dust | Outdoor dust at 0.8m | Outdoor dust at 1.6m | Indoor Vapour | Outdoor vapour at 0.8m | Outdoor vapour at 1.6m | Green vegetables | Root vegetables | Tuber vegetables | Herbaceous fruit | Shrub fruit | Tree fruit |
| | % | % | % | % | mg $kg^{-1}$ | mg $m^{-3}$ | mg $kg^{-1}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $m^{-3}$ | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW | mg $kg^{-1}$ FW |
| 21 | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | |

Environment Agency

| | | Average Daily Exposure (mg kg$^{-1}$ bw day$^{-1}$) | | | | | | | Distribution by Pathway (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Direct soil ingestion | Consumption of homegrown produce and attached soil | Dermal contact with soil and dust | Inhalation of dust | Inhalation of vapour | Background (oral) | Background (inhalation) | Direct soil ingestion | Consumption of homegrown produce and attached soil | Dermal contact with soil and dust | Inhalation of dust | Inhalation of vapour (indoor) | Inhalation of vapour (outdoor) | Background (oral) | Background (inhalation) |
| 1 | Arsenic (C4SL child) | 6.37E-05 | 0.00E+00 | 2.36E-04 | 2.09E-06 | 0.00E+00 | 0.00E+00 | 0.00E+00 | 21.24 | 0.00 | 78.76 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | |

Environment Agency

| | Average Daily Exposure (mg kg$^{-1}$ bw day$^{-1}$) | | | | | | | Distribution by Pathway (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Direct soil ingestion | Consumption of homegrown produce and attached soil | Dermal contact with soil and dust | Inhalation of dust | Inhalation of vapour | Background (oral) | Background (inhalation) | Direct soil ingestion | Consumption of homegrown produce | Dermal contact with soil and dust | Inhalation of dust | Inhalation of vapour (indoor) | Inhalation of vapour (outdoor) | Background (oral) | Background (inhalation) |
| 21 | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | |

Environment Agency

| | | Oral Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$) | | Inhalation Health Criteria Value ($\mu g\ kg^{-1}\ BW\ day^{-1}$) | Oral Mean Daily Intake ($\mu g\ day^{-1}$) | Inhalation Mean Daily Intake ($\mu g\ day^{-1}$) | Air-water partition coefficient ($K_{aw}$) ($cm^3\ cm^{-3}$) | Coefficient of Diffusion in Air ($m^2\ s^{-1}$) | Coefficient of Diffusion in Water ($m^2\ s^{-1}$) | log $K_{oc}$ ($cm^3\ g^{-1}$) | log $K_{ow}$ (dimensionless) | Dermal Absorption Fraction (dimensionless) | Soil-to-dust transport factor ($g\ g^{-1}$ DW) | Sub-surface soil to indoor air correction factor (dimensionless) | Relative bioavailability via soil ingestion (unitless) | Relative bioavailability via dust inhalation (unitless) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Arsenic (C4SL child) | ID | 0.3 | ID | 0.0087 | NR | NR | NR | NR | NR | NR | NR | 0.03 | 0.5 | 1 | **0.008** | 1 |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | |

Environment Agency

| | Oral Health Criteria Value (µg kg$^{-1}$ BW day$^{-1}$) | Inhalation Health Criteria Value (µg kg$^{-1}$ BW day$^{-1}$) | Oral Mean Daily Intake (µg day$^{-1}$) | Inhalation Mean Daily Intake (µg day$^{-1}$) | Air-water partition coefficient ($K_{aw}$) (cm$^3$ cm$^{-3}$) | Coefficient of Diffusion in Air (m$^2$ s$^{-1}$) | Coefficient of Diffusion in Water (m$^2$ s$^{-1}$) | log $K_{oc}$ (cm$^3$ g$^{-1}$) | log $K_{ow}$ (dimensionless) | Dermal Absorption Fraction (dimensionless) | Soil-to-dust transport factor (g g$^{-1}$ DW) | Sub-surface soil to indoor air correction factor (dimensionless) | Relative bioavailability via soil ingestion (unitless) | Relative bioavailability via dust inhalation (unitless) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | |

Environment Agency

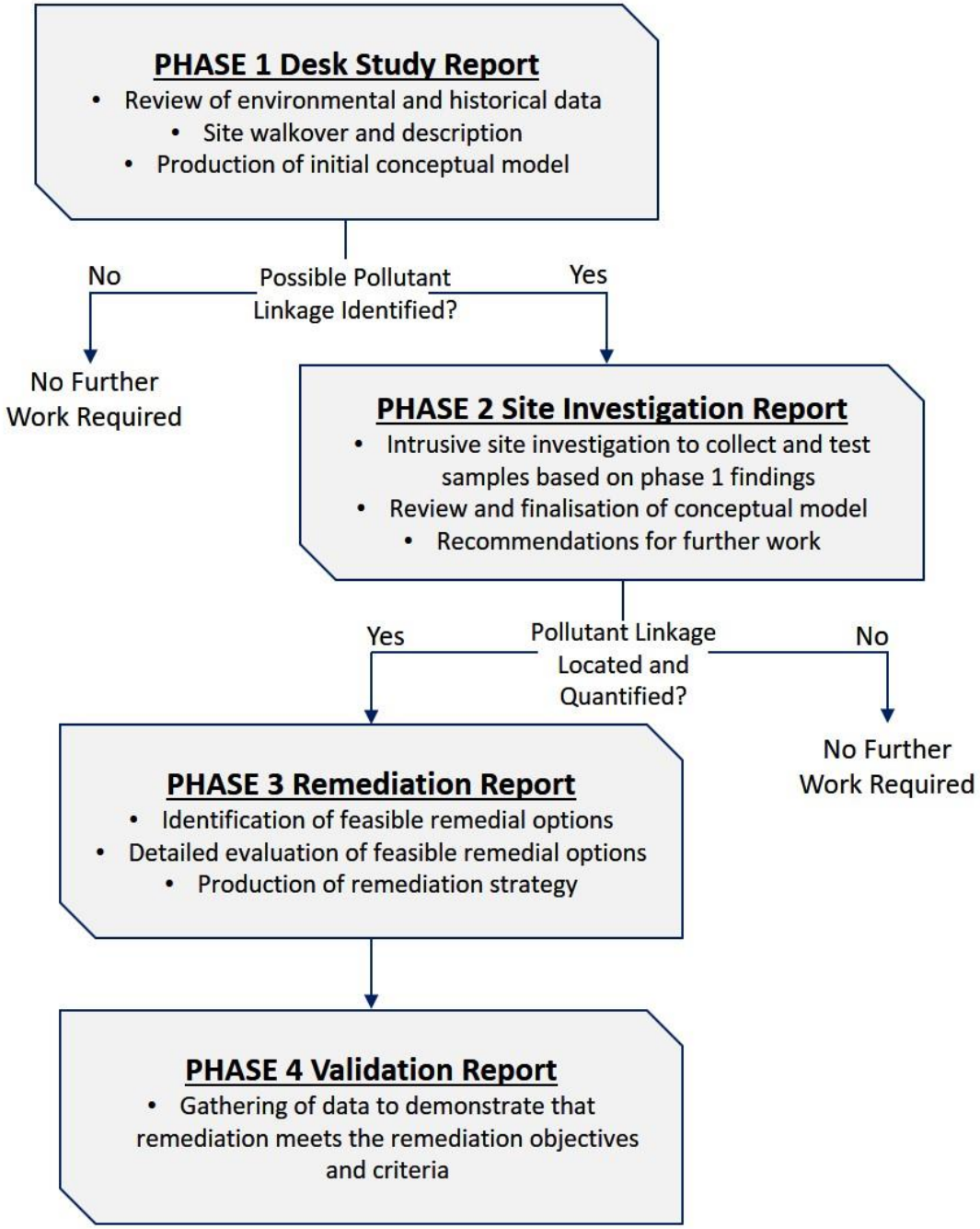
| | | Soil-to-water partition coefficient ($cm^3 g^{-1}$) | Vapour pressure (Pa) | Water solubility ($mg L^{-1}$) | Soil-to-plant concentration factor for green vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for root vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for tuber vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for herbaceous fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for shrub fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for tree fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Arsenic (C4SL child) | 5.00E+02 | NR | 1.25E+06 | 0.00043 fw | 0.0004 fw | 0.00023 fw | 0.00033 fw | 0.0002 fw | 0.0011 fw |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

Environment Agency

| | Soil-to-water partition coefficient ($cm^3\ g^{-1}$) | Vapour pressure (Pa) | Water solubility ($mg\ L^{-1}$) | Soil-to-plant concentration factor for green vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for root vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for tuber vegetables (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for herbaceous fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for shrub fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) | Soil-to-plant concentration factor for tree fruit (mg $g^{-1}$ plant DW or FW basis over mg $g^{-1}$ DW soil) |
|---|---|---|---|---|---|---|---|---|---|
| 21 | | | | | | | | | |
| 22 | | | | | | | | | |
| 23 | | | | | | | | | |
| 24 | | | | | | | | | |
| 25 | | | | | | | | | |
| 26 | | | | | | | | | |
| 27 | | | | | | | | | |
| 28 | | | | | | | | | |
| 29 | | | | | | | | | |
| 30 | | | | | | | | | |

# The Phased Approach to Land Contamination

*As set out in Contaminated Land Report 11 - Model Procedures for the Management of Land Contamination. Environment Agency Guidelines*




Wheal Jane
Consultancy
Geotechnical, environmental
& mining services