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Ground Investigations Ireland

Old Greenfield Site

Ground Investigation Report

DOCUMENT CONTROL SHEET

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Engineer	Waterman Moylan
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APPENDICES

Appendix 1	Site Location Plan
Appendix 2	Trial Pit Records
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Appendix 4	Laboratory Testing
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1.0 Preamble

On the instructions of Waterman Moylan Consulting Engineers, a site investigation was carried out by Ground Investigations Ireland Ltd., in May 2019 at the site of the proposed residential development in Maynooth, Co. Kildare.

2.0 Overview

2.1. Background

It is proposed to construct a new residential development with associated services, access roads and car parking at the proposed site. The site is currently overgrown and is situated in Maynooth Town. The proposed construction is envisaged to consist of conventional foundations and pavement make up with some local excavations for services and plant.

2.2. Purpose and Scope

The purpose of the site investigation was to investigate subsurface conditions utilising a variety of investigative methods in accordance with the project specification. The scope of the work undertaken for this project included the following:

- Visit project site to observe existing conditions
- Carry out 4 No. Trial Pits to a maximum depth of 3.0m BGL
- Carry out 5 No. Slit Trenches to expose and log existing services
- Geotechnical & Environmental Laboratory testing
- Report with recommendations

3.0 Subsurface Exploration

3.1. General

During the ground investigation a programme of intrusive investigation specified by the Consulting Engineer was undertaken to determine the sub surface conditions at the proposed site. Regular sampling and in-situ testing was undertaken in the exploratory holes to facilitate the geotechnical descriptions and to enable laboratory testing to be carried out on the soil samples recovered during excavation and drilling.

The procedures used in this site investigation are in accordance with Eurocode 7 Part 2: Ground Investigation and testing (ISEN 1997 – 2:2007) and B.S. 5930:2015.

3.2. Trial Pits

The trial pits were excavated using a 8T tracked excavator at the locations shown in the exploratory hole location plan in Appendix 1. The locations were checked using a CAT scan to minimise the potential for encountering services during the excavation. The trial pits were sampled, logged and photographed by a Geotechnical Engineer/Engineering Geologist prior to backfilling with arisings. Notes were made of any services, inclusions, pit stability, groundwater encountered and the characteristics of the strata encountered and are presented on the trial pit logs which are provided in Appendix 2 of this Report.

3.3. Slit Trenches

The slit trenches were excavated using an 8T tracked excavator at the locations shown in the exploratory hole location plan in Appendix 1. The trenches were excavated to locate any buried services and were logged and sketched prior to backfilling and reinstatement. The logs and sketches are provided in Appendix 3 of this Report.

3.4. Surveying

The exploratory hole locations have been recorded using a Trimble R10 GNSS System which records the coordinates and elevation of the locations to ITM or Irish National Grid as required by the project specification. The coordinates and elevations are provided on the exploratory hole logs in the appendices of this Report.

3.5. Laboratory Testing

Samples were selected from the exploratory holes for a range of geotechnical and environmental testing to assist in the classification of soils and to provide information for the proposed design.

Environmental testing, including Waste Acceptance Criteria (WAC), pH and sulphate testing was carried out by Exova Jones Environmental Laboratory in the UK.

Geotechnical testing consisting of moisture content, Atterberg limits and Particle Size Distribution (PSD) were carried out in NMTL's Geotechnical Laboratory in Carlow.

The results of the laboratory testing are included in Appendix 4 of this Report.

4.0 Ground Conditions

4.1. General

The ground conditions encountered during the investigation are summarised below with reference to insitu and laboratory test results. The full details of the strata encountered during the ground investigation are provided in the exploratory hole logs included in the appendices of this report.

The sequence of strata encountered were consistent across the site and are generally comprised;

- Topsoil
- Fill
- Made Ground
- Cohesive Deposits
- Granular Deposits
- Possible Bedrock

TOPSOIL: Topsoil was encountered in the majority of the exploratory holes and was present to a maximum depth of 0.3m BGL.

FILL: Crushed Rock Fill was encountered in TP04 to a maximum depth of 0.40m BGL and was described as a *grey sandy medium to coarse angular to sub-angular Gravel*.

MADE GROUND: Made Ground deposits were encountered beneath the Topsoil/Surfacing and was present to a relatively consistent depth of between 0.50m and 1.0m BGL. These deposits were described generally as *brown or grey sandy slightly gravelly CLAY with frequent cobbles and boulders and contained occasional fragments of glass and metal*.

COHESIVE DEPOSITS: Cohesive deposits were encountered beneath the Made Ground and were described typically as *grey mottled brown or brown sandy gravelly CLAY with occasional cobbles and boulders*. The secondary sand and gravel constituents varied across the site and with depth, with granular lenses occasionally present in the glacial till matrix. The strength of the cohesive deposits were typically described as firm or firm to stiff in the majority of the exploratory holes. These deposits had some, occasional or frequent cobble and boulder content where noted on the exploratory hole logs.

GRANULAR DEPOSITS: The granular deposits were encountered within or at the base of the cohesive deposits in TP01, TP02 & TP03 and were typically described as *Grey brown clayey or very clayey sandy sub rounded to sub angular fine to coarse GRAVEL with occasional cobbles and rare boulders*. The secondary sand/gravel and silt/clay constituents varied across the site and with depth while occasional or frequent cobble and boulder content also present where noted on the exploratory hole logs.

BEDROCK: At the location of TP04 probable weathered rock was encountered at 2.50m BGL, this material was recovered typically as *grey angular gravel and cobbles of grey Mudstone*. TP02 and TP03 both terminated on Obstructions presumed to be boulders or Rock at depths of 1.5m and 2.6m BGL respectively.

4.2. Groundwater

Groundwater strikes are noted on the exploratory hole logs where they occurred and where possible drilling was suspended for twenty minutes to allow the subsequent rise in groundwater to be recorded. We would point out that these exploratory holes did not remain open for sufficiently long periods of time to establish the hydrogeological regime and groundwater levels would be expected to vary with the tide, time of year, rainfall, nearby construction and other factors.

4.3. Laboratory Testing

4.3.1. Geotechnical Laboratory Testing

The geotechnical testing carried out on soil samples recovered generally confirm the descriptions on the logs with the primary constituent of the cohesive deposits found to be a CLAY of low plasticity. The Particle Size Distribution tests confirm that generally the cohesive deposits are well-graded with percentages of sands and gravels ranging between 16% and 42% generally with fines contents of 27 to 35%.

The pH and sulphate testing carried out indicate that pH results are near neutral and that the water soluble sulphate results is low when compared to the guideline values from BRE Special Digest 1:2005. The samples tested classify the soil as a Design Sulphate Level DS-1.

4.3.2. Waste Acceptance Criteria Laboratory Testing

Eight samples were analysed for a suite of parameters which allows for the assessment of the sampled material in terms of total pollutant content for classification of materials as *hazardous* or *non-hazardous*. The suite also allows for the assessment of the sampled material in terms of suitability for placement at licenced landfills (inert, stable non-reactive, hazardous etc.). The parameter list for the suite includes analysis of the solid samples for arsenic, barium, cadmium, chromium, copper, cyanide, lead, nickel, mercury, zinc, speciated aliphatic and aromatic petroleum hydrocarbons, pH, sulphate, sulphide, moisture content, soil organic matter and an asbestos screen.

The suite also includes those parameters specified in the EU Council Decision establishing criteria for the acceptance of waste at Landfills (Council Decision 2003/33/EC), which for the solid samples are total organic carbon (TOC), speciated aliphatic and aromatic petroleum hydrocarbons, BTEX, phenol, polychlorinated biphenyls (PCB) and PAH.

As part of the suite a leachate is generated from the solid sample which is analysed for antimony, arsenic, barium, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, chloride, fluoride, soluble sulphate, sulphide, phenols, dissolved organic carbon (DOC) and total dissolved solids (TDS).

While the laboratory report provides a comparison with the waste acceptance criteria limits it does not provide a waste classification of the material sampled.

All spoil disposed of off-site should be sent to a suitably licenced facility. The possibility for contamination, not revealed by the testing undertaken should be borne in mind particularly where Made Ground deposits are present, or the previous site use or location indicate a risk of environmental variation.

Where material which may be excavated and removed from site meets the definition of waste under the Waste Framework Directive, GII recommend that the waste be classified in line with EPA guidelines and assigned the applicable List of Waste (LoW) code.

The full laboratory report, which includes a section highlighting the waste acceptance criteria, is included in Appendix 4.

5.0 Recommendations & Conclusions

5.1. General

The recommendations given and opinions expressed in this report are based on the findings as detailed in the exploratory hole records. Where an opinion is expressed on the material between exploratory hole locations, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for conditions which have not been revealed by the exploratory holes. Limited information has been provided at the ground investigation stage and any designs based on the recommendations or conclusions should be completed in accordance with the current design codes, taking into account the variation and the specific details contained within the exploratory hole logs.

5.2. Foundations

An allowable bearing capacity of 75 kN/m² is recommended for conventional strip or pad foundations on the firm or firm to stiff cohesive deposits at a depth of 1.0m BGL.

In any part of the site, should part of the foundation be on both granular and cohesive deposits we would recommend that all the foundations of the unit in question be lowered to the competent deeper stratum or suitable reinforced to avoid problems with differential settlement.

If a higher allowable bearing capacity is required, dynamic probing is recommended to be carried out to determine the density of the granular deposits below the upper cohesive deposits.

The possibility for variation in the depth of the made ground in the vicinity of these foundations should be considered and foundation inspections should be carried out. Any soft spots encountered at the proposed foundation depths should be excavated and replaced with lean mix concrete.

A ground bearing floor slab is recommended to be based on the firm or firm to stiff cohesive deposits with an appropriate depth of compacted hardcore specified by the consulting engineer and in accordance with the limits and guidelines in SR21:2014 +A1:2016 and/or NRA SRW CL808 Type E granular stone fill.

The pH and sulphate testing completed on samples recovered from the trial pits indicates the pH results are near neutral and the sulphate results are low, when compared to the guideline values from BRE Special Digest 1:2005. No special precautions are required for concrete foundations to prevent sulphate attack.

5.3. Excavations

Short term temporary excavations in the cohesive deposits will remain stable for a limited time only and will require to be appropriately battered or the sides supported if the excavation is below 1.25m BGL or is required to permit man entry.

Any excavations which penetrate the granular deposits will require to be appropriately battered or the sides supported and are likely to require dewatering due to the groundwater seepages noted in the exploratory hole logs in the Appendices of this Report.

The groundwater and stability noted on the trial pit logs should be consulted when determining the most appropriate construction methods for excavations. Generally, where significant excavations are required in water bearing granular deposits a cut-off wall may be more cost effective than extensive dewatering. An

assessment by a specialist dewatering contractor is recommended to determine the most cost effective approach to the proposed excavation.

5.4. Waste Classification Laboratory Analysis

In order to assess materials, which may be excavated from site, in terms of waste classification, a selection of samples collected were analysed for a suite of parameters which allows for the assessment of the soils in terms of total pollutant content for classification of materials as *hazardous* or *non-hazardous* (RILTA Suite). The suite also allows for the assessment of the soils in terms of suitability for placement at various categories of landfill. The parameter list for the RILTA suite includes analysis of the solid samples for arsenic, barium, cadmium, chromium, copper, cyanide, lead, nickel, mercury, zinc, speciated aliphatic and aromatic petroleum hydrocarbons, pH, sulphate, sulphide, moisture content, soil organic matter and an asbestos screen.

The total pollutant content analysis also provides analytical data which can be used to assess the quality of the subsoils underlying the site and allow an assessment of their suitability for a range of proposed uses against generic assessment criteria.

The RILTA suite also includes those parameters specified in the EU Council Decision establishing criteria for the acceptance of waste at Landfills (Council Decision 2003/33/EC), which for the solid samples are pH, total organic carbon (TOC), speciated aliphatic and aromatic petroleum hydrocarbons, BTEX, phenol, polychlorinated biphenyls (PCB) and PAH.

In line with the requirement of Council Decision 2003/33/EC a leachate was generated from the solid samples which was in turn analysed for antimony, arsenic, barium, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, chloride, fluoride, soluble sulphate, sulphide, phenols, dissolved organic carbon (DOC) and total dissolved solids (TDS). The laboratory testing was completed by Element Material Testing (EMT) in the UK; EMT is a UKAS accredited laboratory. The full laboratory report is included in Appendix 4.

5.5. Asbestos

Asbestos fibres were **not** detected in any of the samples. The laboratory did **not** identify asbestos containing materials (ACMs) in the samples.

5.6. Waste Classification

GII understands that any materials which may be excavated from site would meet the definition of waste under the Waste Framework Directive.

Due to the varying levels of anthropogenic materials encountered in the made ground there are potentially two sets of List of Waste (LoW) with a "mirror" entry LoW (formerly EWC) codes which may be applied to excavated materials to be removed from site.

1. 17-05-03* (soil and stone containing dangerous substances, classified as hazardous) or 17-05-04 (soil and stone other than those mentioned in 17-05-03, not hazardous); or
2. 17-09-03* (other construction and demolition wastes (including mixed wastes) containing hazardous substances) or 17-09-04 (mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03).

Where waste is a mirror entry in the LoW, it can be classified via a process of analysis against standard criteria set out in the Waste Framework Directive. The assessment process is described in detail in guidance published by the Irish (EPA Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-Hazardous, June 2015) and UK regulatory authorities (Guidance on the Classification and Assessment of Waste: Technical Guidance WM3, 2015). The assessment involves comparison of the concentration of various parameters against defined threshold values.

The specific LoW code which should be applied to the material at each sample location is summarised in Table 1 below. These codes are only applicable where the material is being removed for site as a waste.

GII use HazWasteOnline™, a web-based commercial waste classification software tool which assists in the classification of potentially hazardous materials. This tool was used to determine whether the materials on site are classified as hazardous or non-hazardous. The use of the online tool is accepted by the EPA (EPA 2014).

The conclusions presented in the report are based on GII's professional opinion. **It should be noted that the environmental regulator (in this case the EPA) and the waste acceptor (in this case a landfill operator) shall decide whether a waste is hazardous or non-hazardous and suitable for disposal at their facility.**

5.7 HazWasteOnLine™ Results

In total, eight (8 No.) samples were assessed using the HazWasteOnLine™ Tool. All samples were classified as being non-hazardous. The complete HazWasteOnLine™ report for all samples is included in Appendix 5.

The specific LoW code which should be applied to the material at each SI location is summarised in Table 1 below. The assigning of the LoW code is based on observations recorded in the trial pits, an estimation of the % of anthropogenic material present and the results of the HazWasteOnline™ output. The final LoW codes applied may vary due to variations in % of anthropogenic material observed in the excavation phase. Where there is in excess of 2%¹ anthropogenic material observed the LoW code 17 09 04 may be applied.

¹ EPA (2017) - Draft Guidance Note on Soil Recovery Waste Acceptance Criteria.

Table 1 LoW Codes

SI Location	Depth (m)	Hazardous/Non-Hazardous	Asbestos Type if Present	LoW Code
ST04	0.00-1.00	Non-Hazardous	NAD ²	17 05 04
TP02	0.00-1.00	Non-Hazardous	NAD	17 05 04
TP03	0.00-1.00	Non-Hazardous	NAD	17 05 04
TP04	0.40	Non-Hazardous	NAD	17 05 04
Stockpile 1	-	Non-Hazardous	NAD	17 05 04
Stockpile 2	-	Non-Hazardous	NAD	17 05 04
Stockpile 3	-	Non-Hazardous	NAD	17 05 04
Stockpile 4	-	Non-Hazardous	NAD	17 05 04

5.8 Landfill Waste Acceptance Criteria

Waste Acceptance Criteria (WAC) have been agreed by the EU (Council Decision 2003/33/EC) and are only applicable to material if it is to be disposed of as a waste at a landfill facility. Each individual member state and licensed operators of landfills may apply more stringent WAC. WAC limits and the associated laboratory analysis are not suitable for use in the determination of whether a waste is hazardous or non-hazardous. The data have been compared to the WAC limits set out in Council Decision 2003/33/EC as well as the specific WAC which the EPA have applied to the Integrated Materials Solutions (IMS) Landfill in north County Dublin. The IMS landfill has higher limits for a range of parameters while still operating under an inert landfill licence. The WAC data considered in combination with the waste classification outlined in Section 12.0 allows the most suitable waste category to be applied to the material tested. The applicable waste categories are summarised in Table 2. A summary of the WAC data is presented in Appendix 5. The waste category assigned to each sample is summarised in Table 3.

Table 2 Waste Category for Disposal/Recovery

Waste Category	Classification Criteria
Category A Unlined Soil Recovery Facilities	Soil and Stone only which are free from ³ anthropogenic materials such as concrete, brock timber. Soil must be free from "contamination" e.g. PAHs, Hydrocarbons.

² NAD – no asbestos detected.

³ Free from equates to less than 2%.

Category B Inert Landfill	Reported concentrations within inert waste limits, which are set out by the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002). Results also found to be non-hazardous using the HWOL ⁴ application.
Category B1 Inert Landfill	Reported concentrations greater than Category B criteria but less than IMS Hollywood Landfill acceptance criteria, as set out in their Waste Licence W0129-02. Results also found to be non-hazardous using the HWOL application.
Category C Non-Haz Landfill	Reported concentrations greater than Category B criteria but within non-haz landfill waste acceptance limits set out by the adopted EU Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 and Annex II of Directive 1999/31/EC (2002). Results also found to be non-hazardous using the HWOL application.
Category C 1 Non-Haz Landfill	As Category C but containing < 0.001% w/w asbestos fibres.
Category C 2 Non-Haz Landfill	As Category C but containing >0.001% and <0.01% w/w asbestos fibres
Category C 3 Non-Haz Landfill	As Category C but containing >0.01% and <0.1% w/w asbestos fibres.
Category D Hazardous Treatment	Results found to be hazardous using HWOL Application.
Category D 1 Hazardous Disposal	Results found to be hazardous due to the presence of asbestos (>0.1%).

⁴ HazWasteOnLine™ Tool.

5.9 Final Waste Categorisation

All samples were assessed in terms of waste classification using the HazWasteOnLine™ tool and also the WAC set out in Council Decision 2003/33/EC and the IMS specific WAC to give a final waste categorisation to determine the most appropriate disposal route for any waste generated. The final waste categorisation for each sample is summarised in Table 3.

Table 3 Individual Sample Waste Category

Sample ID	Sample Depth (m)	Material Type	Waste Category	LoW Code
ST04	0.00-1.00	Made Ground	Category B	17 05 04
TP02	0.00-1.00	Made Ground	Category B	17 05 04
TP03	0.00-1.00	Made Ground	Category B	17 05 04
TP04	0.40	Made Ground	Category B	17 05 04
Stockpile 1	-	Made Ground	Category B	17 05 04
Stockpile 2	-	Made Ground	Category B	17 05 04
Stockpile 3	-	Made Ground	Category B	17 05 04
Stockpile 4	-	Made Ground	Category B	17 05 04

6.0 References

Environment Agency (2013). *Waste Sampling and Testing for Disposal to Landfill*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/321207/Sampling_and_testing_of_waste_for_landfill.pdf

Environment Agency (2015). *Technical Guidance WM3 - Guidance on the classification and assessment of waste (1st edition 2015) Technical Guidance WM3*. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/427077/LIT_10121.pdf

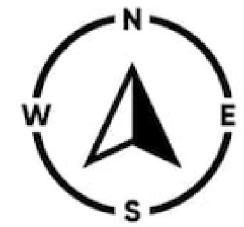
Environmental Protection Agency (EPA) (2014). Letter to Licences *Re: Waste Classification & Haz Waste On-Line™*. Available at: <https://www.hazwasteonline.com/marketing/media/downloads/EPA%20Waste%20classification%20communication%2020may14.pdf>

Environmental Protection Agency (EPA) (2015). *Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous*. Available at: https://www.epa.ie/pubs/reports/waste/stats/wasteclassification/EPA_Waste_Classification_2015_Web.pdf

Environmental Protection Agency (EPA) (2017). *Draft Guidance Note on Soil Recovery Waste Acceptance Criteria*. Available at: <http://www.epa.ie/pubs/consultation/soilrecoveryconsultation/>

[Association of Geotechnical and Geoenvironmental Specialists \(2019\). *Waste Classification for Soils – A Practitioners Guide*.](#)

APPENDIX 1 - Site Location Plan



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Client:



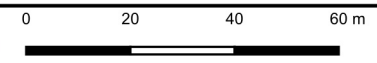
Project Code:
8712-05-19

Project Title:
Old Greenfield Site




Drawing Title:
Figure 1 - Site Location Plan



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LEGEND

-  Slit trenches
-  Stockpiles
-  TP Locations

Drawn By: SK
Date: 08/07/2019

APPENDIX 2 – Trial Pit Records



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Site
Old Greenfield Site

Trial Pit Number
TP01

Machine : 8T Tracked Excavator	Dimensions L x W x D 1.0m x 2.5m x 3.0m	Ground Level (mOD) 60.62	Client Kildare County Council	Job Number 8712-05-19
Method : Trial Pit	Location (dGPS) 693752.3 E 736986.3 N	Dates 23/05/2019	Engineer Waterman Moylan	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	T			60.42	(0.20)	TOPSOIL		
					0.20	MADE GROUND: brown silty gravelly Clay with occasional sub rounded cobbles with rare glass fragments		
					(0.30)	Firm to stiff grey mottled brown slightly silty slightly sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.80-2.20	B			59.02	0.50			
					(1.10)			
					1.60	Brown sandy very clayey fine to coarse sub-rounded to rounded GRAVEL with occasional sub-rounded cobbles		
					(1.40)			
				57.62	3.00	Complete at 3.00m		

<p>Plan</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p>	<p>Remarks</p> <p>Soil Damp after 2.0m BGL Trial pit backfilled upon completion</p>			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Scale (approx) 1:25</td> <td style="width: 33%;">Logged By S Kealy</td> <td style="width: 33%;">Figure No. 8712-05-19.TP04</td> </tr> </table>	Scale (approx) 1:25	Logged By S Kealy	Figure No. 8712-05-19.TP04
Scale (approx) 1:25	Logged By S Kealy	Figure No. 8712-05-19.TP04		



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Site
Old Greenfield Site

Trial Pit Number
TP02

Machine : 8T Tracked Excavator	Dimensions L x W x D 1.0m x 2.5m x 2.4m	Ground Level (mOD) 61.71	Client Kildare County Council	Job Number 8712-05-19
Method : Trial Pit	Location (dGPS) 693849.6 E 737033.9 N	Dates 23/05/2019	Engineer Waterman Moylan	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	T			61.51	(0.20)	TOPSOIL		
					0.20	Presumed MADE GROUND: brown slightly sandy gravelly Clay with occasional sub rounded cobbles		
					(0.30)	Firm grey mottled brown slightly silty slightly gravelly sandy CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.50-2.00	B			60.31	1.40	Grey brown slightly silty sandy very clayey fine to coarse sub-rounded to rounded GRAVEL with occasional sub-rounded cobbles		
					(0.90)			
2.00-2.40	b		Slight(1) at 2.40m.	59.41	2.30	Presumed Rock and Boulders		∇1
				59.31	(0.10) 2.40	Complete at 2.40m		

<p>Plan</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p> <p style="text-align: center;">.</p>	<p>Remarks</p> <p>Slightly ingress of water at 2.4m BGL Trial Pit terminated on presumed rock or boulders Trial pit backfilled upon completion</p>	
Scale (approx) 1:25	Logged By S Kealy	Figure No. 8712-05-19.TP04



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Site
Old Greenfield Site

Trial Pit Number
TP03

Machine : 8T Tracked Excavator
Method : Trial Pit

Dimensions
L x W x D
1.0m x 5.50m x 1.5m

Ground Level (mOD)
61.17

Client
Kildare County Council
Job Number
8712-05-19

Location (dGPS)
693927.5 E 737067 N

Dates
23/05/2019

Engineer
Waterman Moylan
Sheet
1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	T			60.87	(0.30)	TOPSOIL		
					0.30	MADE GROUND: light brown slightly sandy gravelly Clay with occasional sub rounded cobbles with rare metal fragment		
					(0.70)			
					60.17	1.00	Firm grey mottled brown slightly silty slightly gravelly sandy CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded	
				59.67 59.67	1.50 1.50	Presumed Rock and Boulders occurs between 1.0m - 1.5m BGL Complete at 1.50m		

Plan

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Remarks

Trial Pit terminated on presumed rock or boulders
Trial pit backfilled upon completion

Scale (approx) 1:25	Logged By S Kealy	Figure No. 8712-05-19.TP04
-------------------------------	-----------------------------	--------------------------------------



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Site
Old Greenfield Site

Trial Pit Number
TP04

Machine : 8T Tracked Excavator	Dimensions L x W x D 1.0m x 2.50m x 2.60m	Ground Level (mOD) 60.36	Client Kildare County Council	Job Number 8712-05-19
Method : Trial Pit	Location (dGPS) 693722.8 E 737049.8 N	Dates 24/05/2019	Engineer Waterman Moylan	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.40-0.40	EN			60.06	(0.30)	Crushed Rock FILL: Grey sandy medium to coarse angular to sub-angular Gravel		
					0.30	MADE GROUND: Grey sandy gravelly Clay		
0.70-0.70	B			59.66	(0.40)			
					0.70	Firm to stiff brown sandy gravelly CLAY with occasional sub-rounded cobbles. Gravel is fine to coarse sub-angular to sub-rounded		
1.50-1.50	B			59.16	(0.50)			
					1.20	Brown very clayey sandy fine to coarse sub-rounded to rounded GRAVEL with occasional sub-rounded cobbles		
2.60-2.60	B		Slight(1) at 2.60m.	58.36	(0.80)			
					2.00	Firm to stiff becoming stiff brown very gravelly sandy CLAY with frequent sub-rounded cobbles. Gravel is fine to coarse sub-rounded to rounded		
				57.86	2.50	Probable weathered Rock: Recovered as angular cobbles and boulders of grey MUDSTONE in a brown sandy gravelly CLAY matrix		∇1
				57.76	(0.10) 2.60	Complete at 2.60m		

Plan .	Remarks Trial pit stable Groundwater encountered at 2.60m BGL as a slight ingress Trial terminated due to Obstruction: Presumed Rock/Boulder Trial pit backfilled upon completion <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Scale (approx) 1:25</td> <td style="width: 33%;">Logged By S Kealy</td> <td style="width: 33%;">Figure No. 8712-05-19.TP04</td> </tr> </table>	Scale (approx) 1:25	Logged By S Kealy	Figure No. 8712-05-19.TP04
Scale (approx) 1:25	Logged By S Kealy	Figure No. 8712-05-19.TP04		

Old Greenfield Site – Trial Pit Photographs

TP01



TP02



TP03



TP04

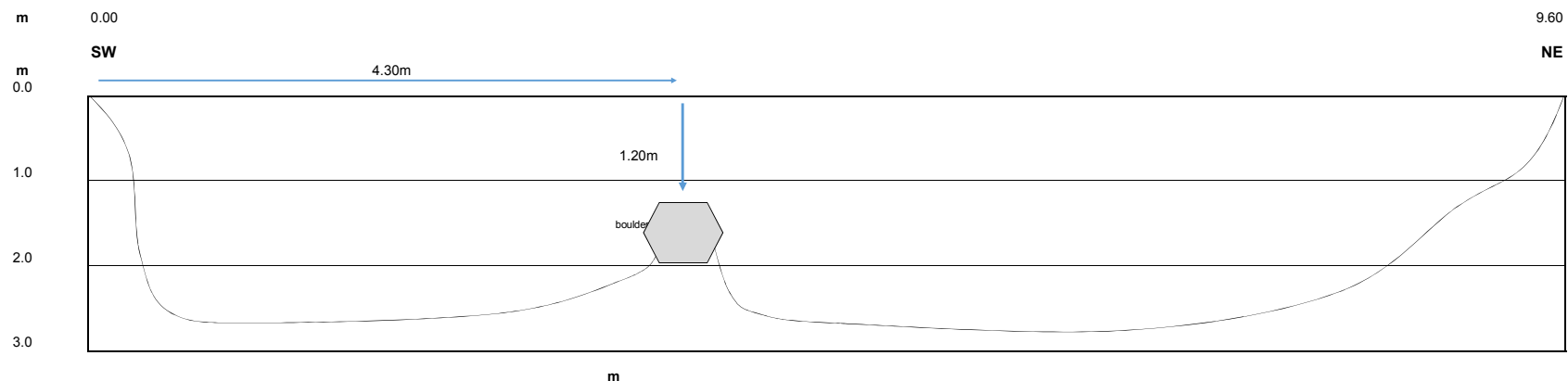




APPENDIX 3 – Slit Trench Records

SLIT TRENCH RECORD - SLIT TRENCH ST-01

Contract No.:	19/05/8712	Survey Point: W	
Client:	Waterman Moylan	SW	693833.445
Site Address:	Old Green Site	NE	737047.75
Date Commenced:	22/05/2019	Ground Level	60.967 (m OD)
Date Completed:	22/05/2019		
Logged by:	Grace Kelliher		



Trench Profile: (m)

Grass	0 - 9.6

Zero taken at	North West End
Start of ST	0.00
End of ST	9.60
ST Length	9.60
Max Depth	2.80
Facing Direction	NW-SE
Width of ST	0.50

Notes

Pipe No.	ø (mm)	Colour - Material	Utility	Depth	Distance from zero	Angle

Soil Profile:

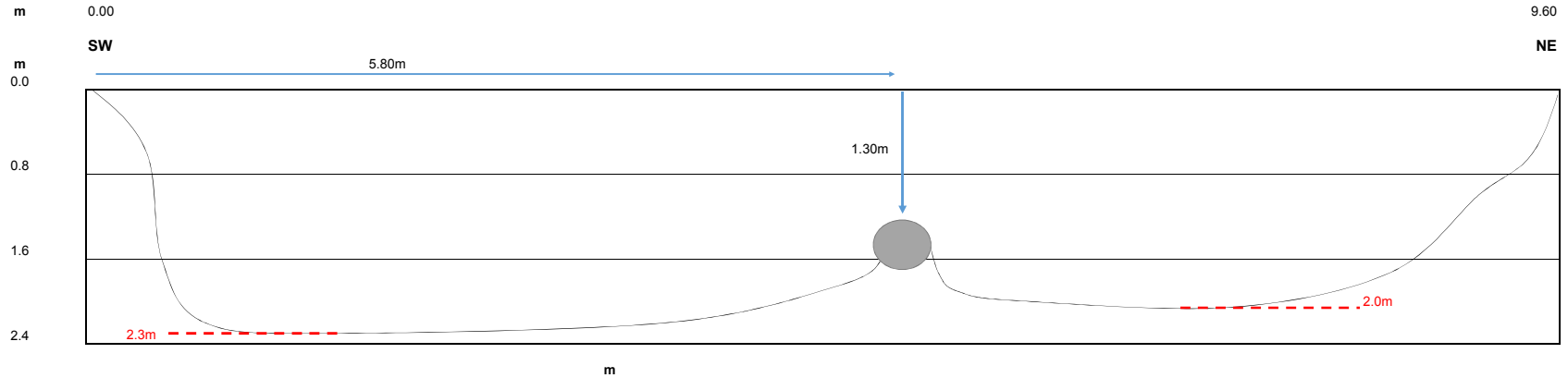
From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	0.80	MADE GROUND - brown slightly sandy slightly gravelly silty Clay with rare sub rounded cobbles and rare rope fragment
0.80	1.80	Firm to stiff grey mottled brown slightly sandy gravelly CLAY with occasional limestone cobbles and rare
1.80	2.80	Firm grey mottled brown sandy gravelly CLAY with occasional sub rounded limestone cobbles and boulders



Tel: 353-1-601-5176
 Fax: 353-1-601-5173
 Email: info@gii.ie

SLIT TRENCH RECORD - SLIT TRENCH ST-01A

Contract No.:	19/05/8712	Survey Point: W	
Client:	Waterman Moylan	SW	693854.098
Site Address:	Old Green Site	NE	737061.33
Date Commenced:	22/05/2019	Ground Level	61.27 (m OD)
Date Completed:	22/05/2019		
Logged by:	Grace Kelliher		



Trench Profile: (m)

Grass	0 - 8.1

Zero taken at	North West End
Start of ST	0.00
End of ST	8.10
ST Length	8.10
Max Depth	2.30
Facing Direction	SW
Width of ST	0.50

Notes

Pipe No.	ø (mm)	Colour - Material	Utility	Depth	Distance from zero	Angle
1	225	Concrete- Grey	Storm water	1.3m	5.80	90

Soil Profile:

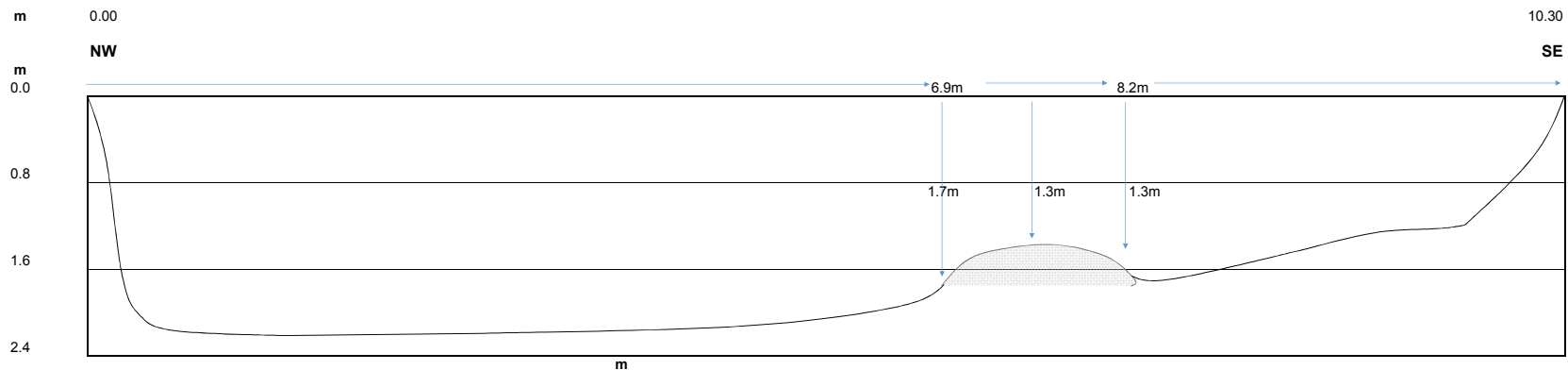
From (m)	To (m)	Description
0.00	0.20	TOPSOIL
0.20	1.20	MADE GROUND consisting of brown slightly sandy slightly gravelly silty CLAY with rare sub rounded cobbles and rare red brick and charcoal fragment
1.20	2.30	Firm grey mottled brown sandy gravelly CLAY with occasional sub rounded limestone cobbles and boulders



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SLIT TRENCH RECORD - SLIT TRENCH ST-02

Contract No.:	19/05/8712	Survey Point:	
Client:	Waterman Moylan	E	693899.199
Site Address:	Old Green Site	N	737024.77
Date Commenced:	22/05/2019		
Date Completed:	22/05/2019		
Logged by:	Grace Kelliher	Ground Level	61.898 (m OD)



Trench Profile: (m)

GRASS	0.0-10.3

Zero taken at	South south east
Start of ST	0.00
End of ST	10.30
ST Length	10.30
Max Depth	2.20
Facing Direction	SSE-NWW
Width of ST	0.50

Notes Black plastic under lean mix, possible service below. Did not dig through

Pipe No.	ø (mm)	Colour - Material	Utility	Depth	Distance from zero	Angle
1		Lean mix - grey with plastic	Uncertain - utility covered, possibly water	1.3m	6.9m	100

Soil Profile:

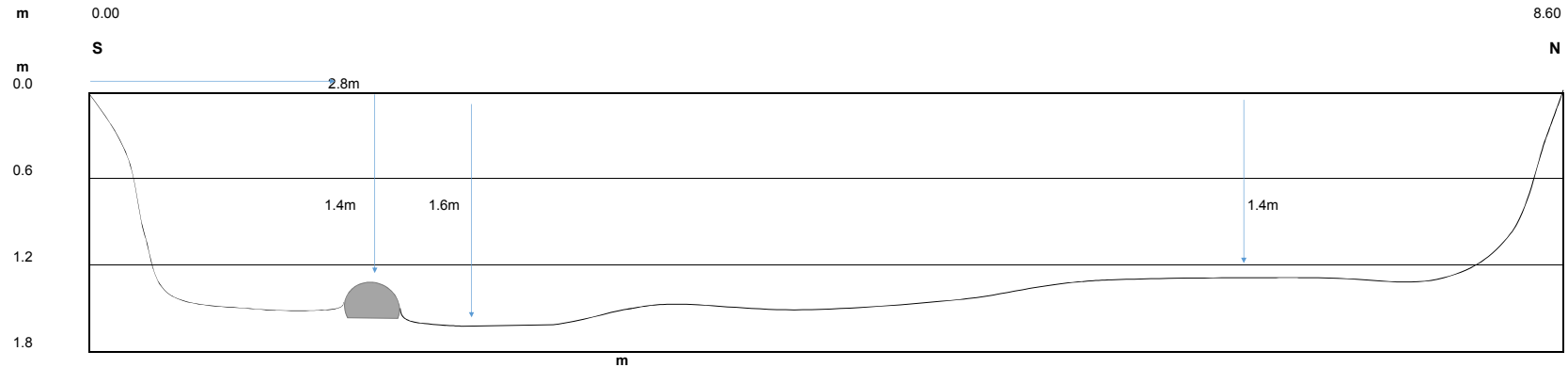
From (m)	To (m)	Description
0.00	0.15	TARMAC
0.15	0.50	FILL: Grey sandy angular GRAVEL.
0.50	1.20	Very stiff brown slightly sandy slightly gravelly CLAY with occasional cobbles and boulders.
0.00	0.10	TOPSOIL
0.10	0.35	Brown slightly sandy slightly gravelly CLAY with occasional cobbles.



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SLIT TRENCH RECORD - SLIT TRENCH ST-03

Contract No.:	19/05/8712	Survey Point:	
Client:	Waterman Moylan	E	693942.759
Site Address:	Old Green Site	N	737046.85
Date Commenced:	22/05/2019	Ground Level	61.574 (m OD)
Date Completed:	22/05/2019		
Logged by:	Grace Kelliher		



Trench Profile: (m)

GRASS	0 - 8.6

Zero taken at	South
Start of ST	0.00
End of ST	8.60
ST Length	8.60
Max Depth	1.60
Facing Direction	S - N
Width of ST	0.50

Notes

Pipe No.	ø (mm)	Colour - Material	Utility	Depth	Distance from zero	Angle
1	40	Asbestos	Water	1.40	2.80	100

Soil Profile:

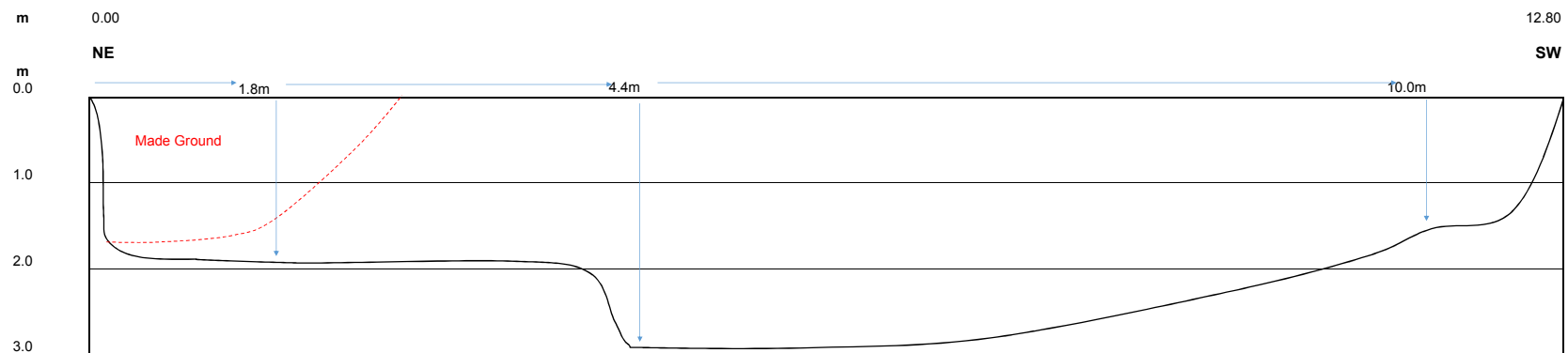
From (m)	To (m)	Description
0.00	0.50	MADE GROUND of brown silty clayey sandy Gravel with occasional sub rounded cobbles, plastic, rootlets and metal fragments
0.50	1.00	MADE GROUND of dark brown sandy gravelly silty CLAY with rare sub rounded cobbles, wood, plastic, concrete and rebar fragments
1.00	1.70	Firm grey mottled brown slightly sandy gravelly CLAY with occasional sub rounded limestone cobbles and rare boulders



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 Fax: 353-1-601-5173
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SLIT TRENCH RECORD - SLIT TRENCH ST-04

Contract No.:	19/05/8712	Survey Point:	
Client:	Waterman Moylan	E	693772.598
Site Address:	Old Green Site	N	736955.31
Date Commenced:	22/05/2019	Ground Level	61.28
Date Completed:	22/05/2019		
Logged by:	Grace Kelliher		



Trench Profile: (m)

Grass	0 - 12.8

Zero taken at	North East End
Start of ST	0.00
End of ST	12.80
ST Length	12.80
Max Depth	2.80
Facing Direction	SSE - NNW
Width of ST	0.50

Notes Groundwater at 2.5m BGL

Pipe No.	ø (mm)	Colour - Material	Utility	Depth	Distance from zero	Angle

Soil Profile:

From (m)	To (m)	Description
0.00	0.15	TOPSOIL
0.15	0.50	MADE GROUND consisting of dark brown grey slightly sandy gravelly Clay with occasional sub rounded cobbles, rare metal, wood and plastic
0.50	1.1	Soft brown sandy gravelly CLAY
1.10	1.90	Firm grey mottled brown slightly sandy gravelly cobbly CLAY with rare boulders
1.90	2.80	Grey brown slightly sandy cobbly clayey fine to coarse sub rounded GRAVEL with occasional



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Site
Old Greenfield Site

Trial Pit Number
ST01

Excavation Method Trial Pit	Dimensions L X W 8.1m X 0.5m	Ground Level (mOD)	Client Kildare County Council	Job Number 8712-05-19
	Location	Dates 22/05/2019	Engineer Waterman Moylan	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	T				(0.15) 0.15	TOPSOIL		
					(0.20) 0.35	MADE GROUND consisting of brown slightly gravelly sandy Clay with rare red brick and charcoal fragments		
					(0.45) 0.80	MADE GROUND consisting of brown slightly sandy slightly gravelly silty CLAY with rare sub rounded cobbles and rare rope fragment		
					(1.00) 1.80	Firm to stiff grey mottled brown slightly sandy gravelly CLAY with occasional limestone cobbles and rare boulders		
1.20-1.50	B				(1.00) 1.80	Firm grey mottled brown sandy gravelly CLAY with occasional sub rounded limestone cobbles and boulders		
			Slight(1) at 2.70m.		2.80	Presumed Rock or boulders		∇1
						Complete at 2.80m		

Plan 	Remarks Trial pit slightly unstable between 1.8m to 2.8m BGL Groundwater encountered at 2.7m BGL as slight ingress Trial Pit terminated on rock or boulders Trial Pit backfilled on completion	
		Scale (approx) 1:25



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Site
Old Greenfield Site

Trial Pit Number
ST01A

Excavation Method Trial Pit	Dimensions L X W 8.1m X 0.5m	Ground Level (mOD)	Client Kildare County Council	Job Number 8712-05-19
	Location	Dates 22/05/2019	Engineer Waterman Moylan	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	T				(0.15)	TOPSOIL		
					0.15	MADE GROUND consisting of brown slightly gravelly sandy Clay		
1.20-1.50	B				(0.25)	MADE GROUND consisting of brown slightly sandy slightly gravelly silty CLAY with rare sub rounded cobbles and rare red brick and charcoal fragment		
					0.40			
					(0.80)			
					1.20	Firm grey mottled brown sandy gravelly CLAY with occasional sub rounded limestone cobbles and boulders		
					(1.10)			
					2.30	Presumed Rock or boulders		
					Complete at 2.80m			

Plan .	Remarks Trial Pit Stable No Groundwater Encountered Trial Pit backfilled on completion		
		<table border="1"> <tr> <td>Scale (approx) 1:25</td> <td>Logged By GK</td> <td>Figure No. 8712-05-19.ST01</td> </tr> </table>	Scale (approx) 1:25
Scale (approx) 1:25	Logged By GK	Figure No. 8712-05-19.ST01	



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Site
Old Greenfield Site

Trial Pit Number
ST02

Excavation Method Trial Pit	Dimensions L X W 10.3m X 0.8m	Ground Level (mOD)	Client Kildare County Council	Job Number 8712-05-19
	Location	Dates 22/05/2019	Engineer Waterman Moylan	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	T				(0.40)	MADE GROUND consisting of brown gravelly sandy Clay with occasional sub rounded cobbles and rare red brick fragments		
					0.40	MADE GROUND consisting of dark brown slightly sandy slightly gravelly silty CLAY with rare sub rounded cobbles		
					(0.70)			
1.00-1.40	B				1.10	Firm grey mottled brown slightly sandy gravelly CLAY with occasional sub rounded limestone cobbles and boulders		
					(1.10)			
					2.20	Complete at 2.20m		

Plan .	Remarks Trial Pit Stable No Groundwater Encountered Trial Pit backfilled on completion		
	<table border="1"> <tr> <td>Scale (approx) 1:25</td> <td>Logged By GK</td> <td>Figure No. 8712-05-19.ST01</td> </tr> </table>	Scale (approx) 1:25	Logged By GK
Scale (approx) 1:25	Logged By GK	Figure No. 8712-05-19.ST01	



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Site
Old Greenfield Site

Trial Pit Number
ST03

Excavation Method Trial Pit	Dimensions L X W 8.6m X 0.7m	Ground Level (mOD)	Client Kildare County Council	Job Number 8712-05-19
	Location	Dates 22/05/2019	Engineer Waterman Moylan	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	T				(0.50)	MADE GROUND consisting of brown silty clayey sandy Gravel with occasional sub rounded cobbles, plastic, rootlets and metal fragments		
					0.50 (0.50)	MADE GROUND consisting of dark brown slightly sandy gravelly silty Clay with rare sub rounded cobbles, wood, plastic, concrete and rebar fragments		
1.00-1.40	B				1.00 (0.70)	Firm grey mottled brown slightly sandy gravelly CLAY with occasional sub rounded limestone cobbles and rare boulders		
					1.70	Complete at 1.70m		

Plan .	Remarks Trial Pit Stable No Groundwater Encountered Trial Pit backfilled on completion		
	<table border="1"> <tr> <td>Scale (approx) 1:25</td> <td>Logged By GK</td> <td>Figure No. 8712-05-19.ST01</td> </tr> </table>	Scale (approx) 1:25	Logged By GK
Scale (approx) 1:25	Logged By GK	Figure No. 8712-05-19.ST01	



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Site
Old Greenfield Site

Trial Pit Number
ST04

Excavation Method Trial Pit	Dimensions L X W 12.8m X 0.8m	Ground Level (mOD)	Client Kildare County Council	Job Number 8712-05-19
	Location	Dates 22/05/2019	Engineer Waterman Moylan	Sheet 1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
0.00-1.00	T				(0.15) 0.15	TOPSOIL		
					(0.35) 0.50	MADE GROUND consisting of dark brown grey slightly sandy gravelly Clay with occasional sub rounded cobbles, rare metal, wood and plastic fragments		
					(0.60) 1.10	Soft brown sandy gravelly Clay		
1.00-2.00	B				(0.80) 1.90	Firm grey mottled brown slightly sandy gravelly cobbly CLAY with rare boulders		
1.20-1.50	B				(0.90) 2.80	Grey brown slightly sandy cobbly clayey fine to coarse sub rounded GRAVEL with occasional boulders		
						Complete at 2.80m		

Plan 	Remarks Trial Pit Stable Groundwater Encountered at 2.5m BGL as a slight ingress Trial Pit backfilled on completion Backfilled in the SSE section of the Slit trench under the boudary wall. to a depth of 1.9m BGL, shown on the slit trench drawing	
		Scale (approx) 1:25

Old Greenfield Site – Slit trench Photographs

ST01







ST01A







ST02







ST03







ST04





APPENDIX 4 – Laboratory Test Records

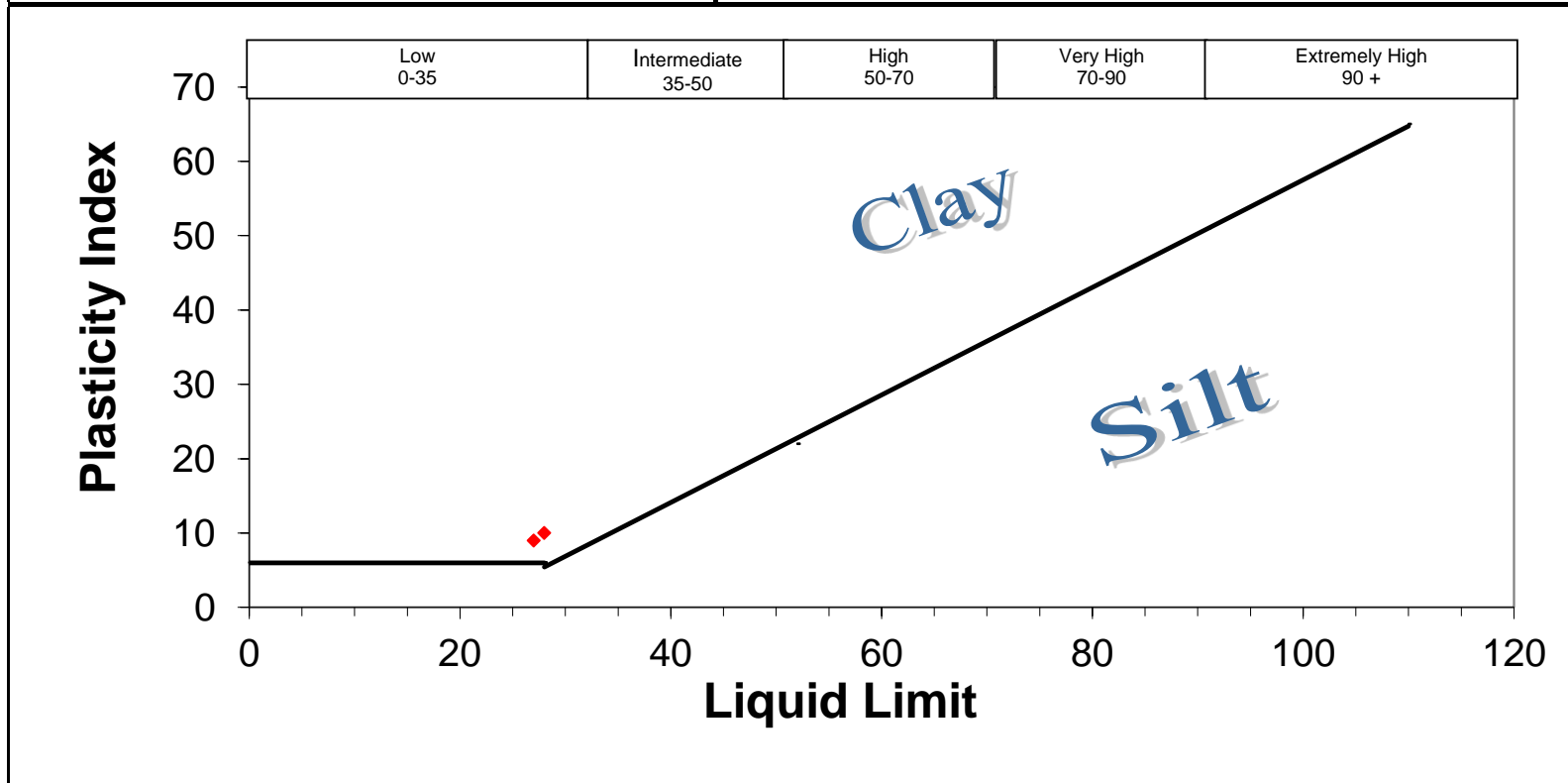
National Materials Testing Laboratory Ltd.

SUMMARY OF TEST RESULTS

				Particle			Index Properties			Bulk	Cell	Undrained Triaxial Tests		Lab	
BH/TP No	Depth m	sample No.	Moisture %	Density Mg/m ³	<425um %	LL %	PL %	PI %	Density Mg/m ³	Presssure kPa	Compressive Stress kPa	Strain at Failure %	Vane kPa	Remarks	
ST03	1.0-1.40	B	12.0		44.3	27	18	9							
TP01	1.8-2.22	B	14.7		41.5	28	16	10							
NMTL		Notes :									Job ref No.	NMTL	GII Project ID:	8712-05-19	
		1. All BS tests carried out using preferred (definitive) method unless otherwise stated.									Location	Old Greenfield Site			

NMTL LTD
Unit 18c, Tullow Industrial Estate
Tullow
County Carlow
Tel: 00353 59 9180822
Mob: 00353 872575508
billa@nmtl.ie

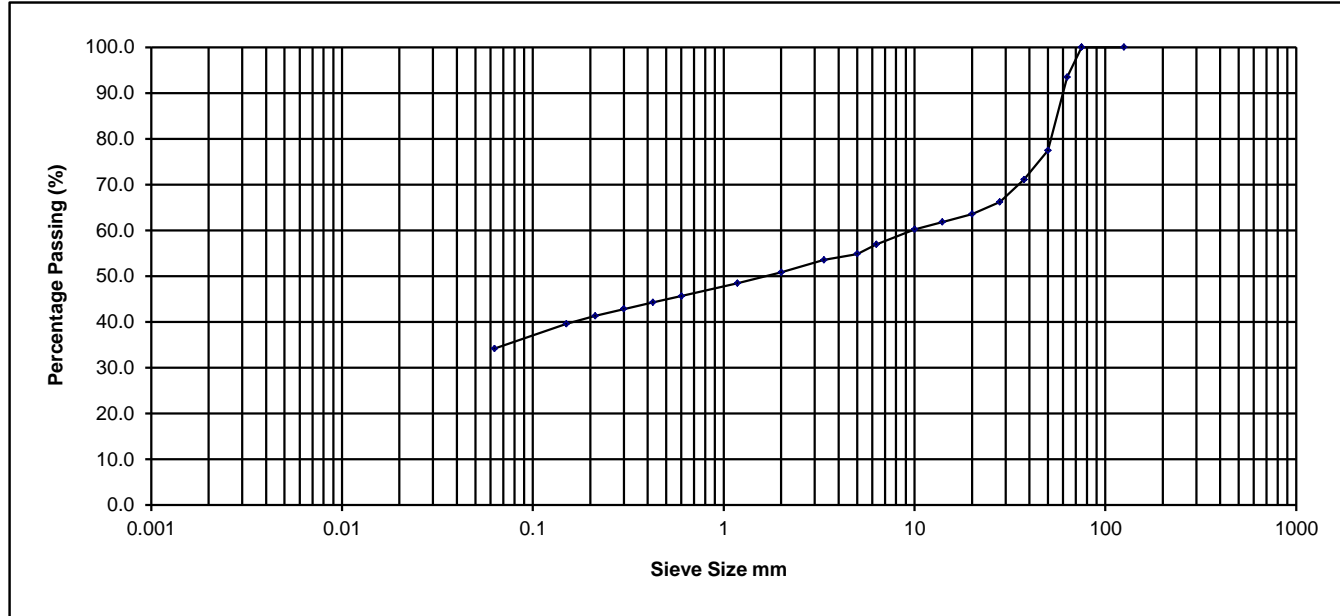
Contract: Old Greenfield Site
Client: Ground Investigations Ireland Ltd
Engineer: Conor Finnerty
GII Project ID 8712-05-19
Date: 22/06/2019
Tested By: Sb **Checked:** Bc
Job ref No. NMTL



NMTL Ltd

Sieve	%
Size mm	Passing
125.000	100.0
75.000	100.0
63.000	93.5
50.000	77.4
37.500	71.1
28.000	66.2
20.000	63.6
14.000	61.8
10.000	60.2
6.300	56.9
5.000	54.8
3.350	53.5
2.000	50.9
1.180	48.4
0.600	45.6
0.425	44.3
0.300	42.8
0.212	41.3
0.150	39.6
0.063	34.2

Determination of Particle Size Distribution
BS 1377 : 1990 : Part 2 : Clauses 9.2 & 9.5



Percentage Particle Size							Cobbles	Boulder
Clay	Fine	Medium	Coarse	Fine	Medium	Coarse		
	Silt			Sand		Gravel		
	34.2			16.7		42.6	6.5	0.0

Sample Description Light brown slightly sandy gravelli silty CLAY, with some cobbles.

Project No.

NMTL 2929

BH/TP No.

ST03

Project Old Green Field Site

GII PROJECT ID: 8712-05-19

Sample No.

B

NM
TL
Ltd

Operator

Tzr

Checked

Nc

Approved

Bc

Date sample tested

13/06/2019

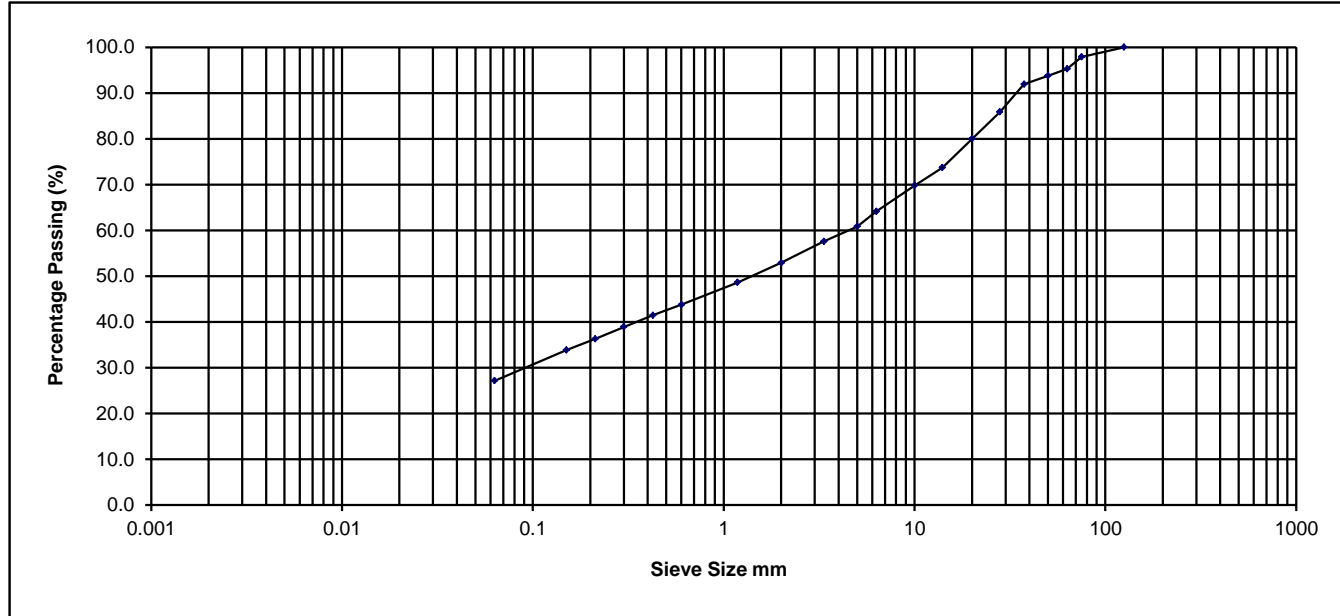
Depth

1.0-1.40m

NMTL Ltd

Sieve	%
Size mm	Passing
125.000	100.0
75.000	97.9
63.000	95.3
50.000	93.8
37.500	91.9
28.000	85.9
20.000	80.0
14.000	73.7
10.000	69.8
6.300	64.2
5.000	60.8
3.350	57.6
2.000	52.9
1.180	48.6
0.600	43.8
0.425	41.5
0.300	38.9
0.212	36.3
0.150	33.8
0.063	27.1

Determination of Particle Size Distribution
BS 1377 : 1990 : Part 2 : Clauses 9.2 & 9.5



Percentage Particle Size											
Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles	Boulder
	Silt			Sand			Gravel				
	27.1			25.8			42.4			4.7	0.0

Sample Description Brown slightly sandy gravelly silty CLAY with some cobbles.

Project No.

NMTL 2929

BH/TP No.

TP01

Project Old Greenfield Site

GII PROJECT ID: 8712-05-19

Sample No.

B

NM
TL
Ltd

Operator

Tzr

Checked

Nc

Approved

Bc

Date sample tested

13/06/2019

Depth

1.80-2.20m



Exova Jones Environmental

Registered Office: Exova Environmental UK Limited, 10 Lower Grosvenor Place, London, SW1W 0EN. Reg No. 11371415

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Ground Investigations Ireland
Catherinestown House
Hazelhatch Road
Newcastle
Co. Dublin
Ireland

Tel: +44 (0) 1244 833780

Fax: +44 (0) 1244 833781



Attention :	Conor Finnerty
Date :	10th June, 2019
Your reference :	8712-05-19
Our reference :	Test Report 19/8635 Batch 1
Location :	Old Greenfields
Date samples received :	29th May, 2019
Status :	Final report
Issue :	1

Ten samples were received for analysis on 29th May, 2019 of which ten were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Where Waste Acceptance Criteria Suite (EC Decision of 19 December 2002 (2003/33/EC)) has been requested, all analyses have been performed using the relevant EN methods where they exist.

Compiled By:

Lucas Halliwell
Project Co-ordinator

Client Name: Ground Investigations Ireland
Reference: 8712-05-19
Location: Old Greenfields
Contact: Conor Finnerty
JE Job No.: 19/8635

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25	26	Please see attached notes for all abbreviations and acronyms			
Sample ID	ST04	TP02	TP03	TP04	SOIL HEAP1 STOCKPILE 1	SOIL HEAP2 STOCKPILE 2	SOIL HEAP3 STOCKPILE 3	SOIL HEAP4 STOCKPILE 4	ST04	ST02				
Depth	0.00-1.00	0.00-1.00	0.00-1.00	0.40					1.20-1.50	1.50-2.00				
COC No / misc														
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	J	J				
Sample Date	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1	1				
Date of Receipt	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	LOD/LOR	Units	Method No.	
Antimony	2	1	2	2	2	2	6	<1	-	-	<1	mg/kg	TM30/PM15	
Arsenic #	9.1	8.7	8.4	8.2	12.8	8.8	39.9	4.1	-	-	<0.5	mg/kg	TM30/PM15	
Barium #	207	97	70	105	144	118	119	27	-	-	<1	mg/kg	TM30/PM15	
Cadmium #	3.9	2.2	2.4	1.9	3.6	2.0	12.3	1.1	-	-	<0.1	mg/kg	TM30/PM15	
Chromium #	50.3	31.8	34.5	53.8	53.3	49.6	65.8	20.5	-	-	<0.5	mg/kg	TM30/PM15	
Copper #	18	27	24	22	29	34	167	11	-	-	<1	mg/kg	TM30/PM15	
Lead #	163	28	16	21	33	18	51	8	-	-	<5	mg/kg	TM30/PM15	
Mercury #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM30/PM15	
Molybdenum #	3.1	2.3	2.6	3.2	3.6	3.3	9.5	1.8	-	-	<0.1	mg/kg	TM30/PM15	
Nickel #	35.4	32.6	37.0	33.0	52.1	43.4	85.1	13.5	-	-	<0.7	mg/kg	TM30/PM15	
Selenium #	2	1	1	2	2	1	1	<1	-	-	<1	mg/kg	TM30/PM15	
Zinc #	146	117	90	82	170	100	275	46	-	-	<5	mg/kg	TM30/PM15	
PAH MS														
Naphthalene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	mg/kg	TM4/PM8	
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	<0.03	mg/kg	TM4/PM8	
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	mg/kg	TM4/PM8	
Fluorene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	mg/kg	TM4/PM8	
Phenanthrene #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	-	-	<0.03	mg/kg	TM4/PM8	
Anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	mg/kg	TM4/PM8	
Fluoranthene #	<0.03	<0.03	<0.03	0.06	<0.03	<0.03	0.09	<0.03	-	-	<0.03	mg/kg	TM4/PM8	
Pyrene #	<0.03	<0.03	<0.03	0.06	<0.03	<0.03	0.09	<0.03	-	-	<0.03	mg/kg	TM4/PM8	
Benzo(a)anthracene #	<0.06	<0.06	<0.06	0.10	<0.06	<0.06	0.08	<0.06	-	-	<0.06	mg/kg	TM4/PM8	
Chrysene #	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	0.08	<0.02	-	-	<0.02	mg/kg	TM4/PM8	
Benzo(bk)fluoranthene #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	0.15	<0.07	-	-	<0.07	mg/kg	TM4/PM8	
Benzo(a)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.05	<0.04	-	-	<0.04	mg/kg	TM4/PM8	
Indeno(123cd)pyrene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	-	-	<0.04	mg/kg	TM4/PM8	
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	mg/kg	TM4/PM8	
Benzo(ghi)perylene #	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	0.06	<0.04	-	-	<0.04	mg/kg	TM4/PM8	
Coronene	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	mg/kg	TM4/PM8	
PAH 6 Total #	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	0.41	<0.22	-	-	<0.22	mg/kg	TM4/PM8	
PAH 17 Total	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	0.66	<0.64	-	-	<0.64	mg/kg	TM4/PM8	
Benzo(b)fluoranthene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	-	-	<0.05	mg/kg	TM4/PM8	
Benzo(k)fluoranthene	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	-	-	<0.02	mg/kg	TM4/PM8	
Benzo(j)fluoranthene	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	mg/kg	TM4/PM8	
PAH Surrogate % Recovery	92	91	97	94	98	91	99	94	-	-	<0	%	TM4/PM8	
Mineral Oil (C10-C40)	<30	<30	<30	<30	<30	<30	<30	<30	-	-	<30	mg/kg	TM5/PM8/PM16	

Client Name: Ground Investigations Ireland
Reference: 8712-05-19
Location: Old Greenfields
Contact: Conor Finnerty
JE Job No.: 19/8635

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25	26	Please see attached notes for all abbreviations and acronyms		
Sample ID	ST04	TP02	TP03	TP04	SOIL HEAP1 STOCKPILE 1	SOIL HEAP2 STOCKPILE 2	SOIL HEAP3 STOCKPILE 3	SOIL HEAP4 STOCKPILE 4	ST04	ST02	LOD/LOR	Units	Method No.
Depth	0.00-1.00	0.00-1.00	0.00-1.00	0.40					1.20-1.50	1.50-2.00			
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	J	J			
Sample Date	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019			
TPH CWG													
Aliphatics													
>C5-C6 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>C6-C8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>C8-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>C10-C12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	<0.2	mg/kg	TMS/PM8/PM16
>C12-C16 #	<4	<4	<4	<4	<4	<4	<4	<4	-	-	<4	mg/kg	TMS/PM8/PM16
>C16-C21 #	<7	<7	<7	<7	<7	<7	<7	<7	-	-	<7	mg/kg	TMS/PM8/PM16
>C21-C35 #	<7	<7	<7	<7	<7	<7	<7	<7	-	-	<7	mg/kg	TMS/PM8/PM16
>C35-C40	<7	<7	<7	<7	<7	<7	<7	<7	-	-	<7	mg/kg	TMS/PM8/PM16
Total aliphatics C5-40	<26	<26	<26	<26	<26	<26	<26	<26	-	-	<26	mg/kg	TMS/PM8/PM16/PM12/PM15
>C6-C10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>C10-C25	<10	<10	<10	<10	<10	<10	<10	<10	-	-	<10	mg/kg	TMS/PM8/PM16
>C25-C35	<10	<10	<10	<10	<10	<10	<10	<10	-	-	<10	mg/kg	TMS/PM8/PM16
Aromatics													
>C5-EC7 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC7-EC8 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	<0.2	mg/kg	TMS/PM8/PM16
>EC12-EC16 #	<4	<4	<4	<4	<4	<4	<4	<4	-	-	<4	mg/kg	TMS/PM8/PM16
>EC16-EC21 #	<7	<7	<7	<7	<7	<7	<7	<7	-	-	<7	mg/kg	TMS/PM8/PM16
>EC21-EC35 #	<7	<7	<7	<7	<7	<7	<7	<7	-	-	<7	mg/kg	TMS/PM8/PM16
>EC35-EC40	<7	<7	<7	<7	<7	<7	<7	<7	-	-	<7	mg/kg	TMS/PM8/PM16
Total aromatics C5-40	<26	<26	<26	<26	<26	<26	<26	<26	-	-	<26	mg/kg	TMS/PM8/PM16/PM12/PM15
Total aliphatics and aromatics(C5-40)	<52	<52	<52	<52	<52	<52	<52	<52	-	-	<52	mg/kg	TMS/PM8/PM16/PM12/PM15
>EC6-EC10 #	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	mg/kg	TM36/PM12
>EC10-EC25	<10	<10	<10	<10	<10	<10	<10	<10	-	-	<10	mg/kg	TMS/PM8/PM16
>EC25-EC35	<10	<10	<10	<10	<10	<10	<10	<10	-	-	<10	mg/kg	TMS/PM8/PM16
MTBE #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM31/PM12
Benzene #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM31/PM12
Toluene #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM31/PM12
Ethylbenzene #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM31/PM12
m/p-Xylene #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM31/PM12
o-Xylene #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM31/PM12
PCB 28 #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM17/PM8
PCB 52 #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM17/PM8
PCB 101 #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM17/PM8
PCB 118 #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM17/PM8
PCB 138 #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM17/PM8
PCB 153 #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM17/PM8
PCB 180 #	<5	<5	<5	<5	<5	<5	<5	<5	-	-	<5	ug/kg	TM17/PM8
Total 7 PCBs #	<35	<35	<35	<35	<35	<35	<35	<35	-	-	<35	ug/kg	TM17/PM8

Client Name: Ground Investigations Ireland
Reference: 8712-05-19
Location: Old Greenfields
Contact: Conor Finnerty
JE Job No.: 19/8635

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25	26	Please see attached notes for all abbreviations and acronyms			
Sample ID	ST04	TP02	TP03	TP04	SOIL HEAP1 STOCKPILE 1	SOIL HEAP2 STOCKPILE 2	SOIL HEAP3 STOCKPILE 3	SOIL HEAP4 STOCKPILE 4	ST04	ST02				
Depth	0.00-1.00	0.00-1.00	0.00-1.00	0.40					1.20-1.50	1.50-2.00				
COC No / misc														
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T	J	J				
Sample Date	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019				
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil				
Batch Number	1	1	1	1	1	1	1	1	1	1				
Date of Receipt	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	LOD/LOR	Units	Method No.	
Natural Moisture Content	22.1	21.5	13.2	26.2	16.6	16.4	12.7	17.6	-	-	<0.1	%	PM4/PM0	
Moisture Content (% Wet Weight)	18.1	17.7	11.7	20.8	14.2	14.1	11.3	15.0	-	-	<0.1	%	PM4/PM0	
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	-	<0.3	mg/kg	TM38/PM20	
Sulphate as SO4 (2:1 Ext) #	-	-	-	-	-	-	-	-	0.0066	0.0041	<0.0015	g/l	TM38/PM20	
Chromium III	50.3	31.8	34.5	53.8	53.3	49.6	65.8	20.5	-	-	<0.5	mg/kg	NONE/NONE	
Total Organic Carbon #	0.76	0.94	0.55	0.86	1.43	0.54	1.02	0.50	-	-	<0.02	%	TM21/PM24	
pH #	8.15	8.31	8.54	7.88	8.35	8.55	8.45	8.44	8.73	8.58	<0.01	pH units	TM73/PM11	
Mass of raw test portion	0.1093	0.1074	0.1002	0.1141	0.1071	0.1089	0.0999	0.1201	-	-		kg	NONE/PM17	
Mass of dried test portion	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	-	-		kg	NONE/PM17	

Client Name: Ground Investigations Ireland
Reference: 8712-05-19
Location: Old Greenfields
Contact: Conor Finnerty
JE Job No.: 19/8635

Report : CEN 10:1 1 Batch

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24						
Sample ID	ST04	TP02	TP03	TP04	SOIL HEAP1 STOCKPILE 1	SOIL HEAP2 STOCKPILE 2	SOIL HEAP3 STOCKPILE 3	SOIL HEAP4 STOCKPILE 4						
Depth	0.00-1.00	0.00-1.00	0.00-1.00	0.40										
COC No / misc														
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1	1						
Date of Receipt	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019						
											LOD/LOR	Units	Method No.	
Dissolved Antimony #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002			<0.002	mg/l	TM30/PM17	
Dissolved Antimony (A10) #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02			<0.02	mg/kg	TM30/PM17	
Dissolved Arsenic #	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025			<0.0025	mg/l	TM30/PM17	
Dissolved Arsenic (A10) #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025			<0.025	mg/kg	TM30/PM17	
Dissolved Barium #	<0.003	<0.003	<0.003	0.034	<0.003	<0.003	<0.003	<0.003			<0.003	mg/l	TM30/PM17	
Dissolved Barium (A10) #	<0.03	<0.03	<0.03	0.34	<0.03	<0.03	<0.03	<0.03			<0.03	mg/kg	TM30/PM17	
Dissolved Cadmium #	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005			<0.0005	mg/l	TM30/PM17	
Dissolved Cadmium (A10) #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			<0.005	mg/kg	TM30/PM17	
Dissolved Chromium #	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015			<0.0015	mg/l	TM30/PM17	
Dissolved Chromium (A10) #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015			<0.015	mg/kg	TM30/PM17	
Dissolved Copper #	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007	<0.007			<0.007	mg/l	TM30/PM17	
Dissolved Copper (A10) #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07			<0.07	mg/kg	TM30/PM17	
Dissolved Lead #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005			<0.005	mg/l	TM30/PM17	
Dissolved Lead (A10) #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05			<0.05	mg/kg	TM30/PM17	
Dissolved Molybdenum #	<0.002	<0.002	<0.002	0.011	<0.002	<0.002	0.003	0.006			<0.002	mg/l	TM30/PM17	
Dissolved Molybdenum (A10) #	<0.02	<0.02	<0.02	0.11	<0.02	<0.02	0.03	0.06			<0.02	mg/kg	TM30/PM17	
Dissolved Nickel #	<0.002	<0.002	<0.002	0.004	<0.002	<0.002	<0.002	<0.002			<0.002	mg/l	TM30/PM17	
Dissolved Nickel (A10) #	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02			<0.02	mg/kg	TM30/PM17	
Dissolved Selenium #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003			<0.003	mg/l	TM30/PM17	
Dissolved Selenium (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03			<0.03	mg/kg	TM30/PM17	
Dissolved Zinc #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.003	<0.003			<0.003	mg/l	TM30/PM17	
Dissolved Zinc (A10) #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	<0.03			<0.03	mg/kg	TM30/PM17	
Mercury Dissolved by CVA#	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001			<0.00001	mg/l	TM61/PM0	
Mercury Dissolved by CVA#	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001			<0.0001	mg/kg	TM61/PM0	
Phenol	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01			<0.01	mg/l	TM26/PM0	
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			<0.1	mg/kg	TM26/PM0	
Fluoride	<0.3	<0.3	<0.3	<0.3	<0.3	0.5	<0.3	<0.3			<0.3	mg/l	TM173/PM0	
Fluoride	<3	<3	<3	<3	<3	5	<3	<3			<3	mg/kg	TM173/PM0	
Sulphate as SO4 #	<0.5	<0.5	<0.5	13.3	<0.5	<0.5	<0.5	<0.5			<0.5	mg/l	TM38/PM0	
Sulphate as SO4 #	<5	<5	<5	133	<5	<5	<5	<5			<5	mg/kg	TM38/PM0	
Chloride #	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3			<0.3	mg/l	TM38/PM0	
Chloride #	<3	<3	<3	<3	<3	<3	<3	<3			<3	mg/kg	TM38/PM0	
Dissolved Organic Carbon	3	2	<2	5	4	2	5	2			<2	mg/l	TM60/PM0	
Dissolved Organic Carbon	30	<20	<20	50	40	<20	50	<20			<20	mg/kg	TM60/PM0	
pH	7.71	8.06	8.16	8.15	8.07	8.23	8.15	8.19			<0.01	pH units	TM73/PM0	
Total Dissolved Solids #	96	84	37	169	98	109	106	112			<35	mg/l	TM20/PM0	
Total Dissolved Solids #	960	840	370	1689	981	1090	1061	1120			<350	mg/kg	TM20/PM0	

Please see attached notes for all abbreviations and acronyms

Client Name: Ground Investigations Ireland
Reference: 8712-05-19
Location: Old Greenfields
Contact: Conor Finnerty
JE Job No.: 19/8635

Report : EN12457_2

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24									
Sample ID	ST04	TP02	TP03	TP04	SOIL HEAP1 STOCKPILE 1	SOIL HEAP2 STOCKPILE 2	SOIL HEAP3 STOCKPILE 3	SOIL HEAP4 STOCKPILE 4									
Depth	0.00-1.00	0.00-1.00	0.00-1.00	0.40													
COC No / misc																	
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T	V J T									
Sample Date	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019	27/05/2019									
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil									
Batch Number	1	1	1	1	1	1	1	1									
Date of Receipt	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019	29/05/2019									
									Inert	Stable Non-reactive	Hazardous	LOD LOR	Units	Method No.			
Solid Waste Analysis																	
Total Organic Carbon #	0.76	0.94	0.55	0.86	1.43	0.54	1.02	0.50				3	5	6	<0.02	%	TM21/PM24
Sum of BTEX	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025				6	-	-	<0.025	mg/kg	TM31/PM12
Sum of 7 PCBs #	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035	<0.035				1	-	-	<0.035	mg/kg	TM17/PM8
Mineral Oil	<30	<30	<30	<30	<30	<30	<30	<30				500	-	-	<30	mg/kg	TM5/PM8/PM16
PAH Sum of 6 #	<0.22	<0.22	<0.22	<0.22	<0.22	<0.22	0.41	<0.22				-	-	-	<0.22	mg/kg	TM4/PM8
PAH Sum of 17	<0.64	<0.64	<0.64	<0.64	<0.64	<0.64	0.66	<0.64				100	-	-	<0.64	mg/kg	TM4/PM8
CEN 10:1 Leachate																	
Arsenic #	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025				0.5	2	25	<0.025	mg/kg	TM30/PM17
Barium #	<0.03	<0.03	<0.03	0.34	<0.03	<0.03	<0.03	<0.03				20	100	300	<0.03	mg/kg	TM30/PM17
Cadmium #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.04	1	5	<0.005	mg/kg	TM30/PM17
Chromium #	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015				0.5	10	70	<0.015	mg/kg	TM30/PM17
Copper #	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07				2	50	100	<0.07	mg/kg	TM30/PM17
Mercury #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001				0.01	0.2	2	<0.0001	mg/kg	TM61/PM0
Molybdenum #	<0.02	<0.02	<0.02	0.11	<0.02	<0.02	0.03	0.06				0.5	10	30	<0.02	mg/kg	TM30/PM17
Nickel #	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02				0.4	10	40	<0.02	mg/kg	TM30/PM17
Lead #	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.5	10	50	<0.05	mg/kg	TM30/PM17
Antimony #	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.06	0.7	5	<0.02	mg/kg	TM30/PM17
Selenium #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03				0.1	0.5	7	<0.03	mg/kg	TM30/PM17
Zinc #	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03	<0.03				4	50	200	<0.03	mg/kg	TM30/PM17
Total Dissolved Solids #	960	840	370	1689	981	1090	1061	1120				4000	60000	100000	<350	mg/kg	TM20/PM0
Dissolved Organic Carbon	30	<20	<20	50	40	<20	50	<20				500	800	1000	<20	mg/kg	TM60/PM0
Mass of raw test portion	0.1093	0.1074	0.1002	0.1141	0.1071	0.1089	0.0999	0.1201				-	-	-		kg	NONE/PM17
Dry Matter Content Ratio	82.0	83.7	89.7	78.5	83.8	82.7	89.6	75.1				-	-	-	<0.1	%	NONE/PM4
Leachant Volume	0.88	0.882	0.89	0.875	0.883	0.881	0.89	0.87				-	-	-		l	NONE/PM17
Eluate Volume	0.75	0.775	0.8	0.76	0.8	0.8	0.82	0.79				-	-	-		l	NONE/PM17
pH #	8.15	8.31	8.54	7.88	8.35	8.55	8.45	8.44				-	-	-	<0.01	pH units	TM73/PM11
Phenol	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				1	-	-	<0.1	mg/kg	TM26/PM0
Fluoride	<3	<3	<3	<3	<3	5	<3	<3				-	-	-	<3	mg/kg	TM173/PM0
Sulphate as SO4 #	<5	<5	<5	133	<5	<5	<5	<5				1000	20000	50000	<5	mg/kg	TM38/PM0
Chloride #	<3	<3	<3	<3	<3	<3	<3	<3				800	15000	25000	<3	mg/kg	TM38/PM0

Please see attached notes for all abbreviations and acronyms

Client Name: Ground Investigations Ireland
Reference: 8712-05-19
Location: Old Greenfields
Contact: Conor Finnerty

Matrix : Solid

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	EPH Interpretation
19/8635	1	ST04	0.00-1.00	1-3	No interpretation possible
19/8635	1	TP02	0.00-1.00	4-6	No interpretation possible
19/8635	1	TP03	0.00-1.00	7-9	No interpretation possible
19/8635	1	TP04	0.40	10-12	No interpretation possible
19/8635	1	SOIL HEAP1 STOCKPILE 1		13-15	No interpretation possible
19/8635	1	SOIL HEAP2 STOCKPILE 2		16-18	No interpretation possible
19/8635	1	SOIL HEAP3 STOCKPILE 3		19-21	No interpretation possible
19/8635	1	SOIL HEAP4 STOCKPILE 4		22-24	No interpretation possible

Client Name: Ground Investigations Ireland
Reference: 19/05/8712
Location: Old Greenfields
Contact: Conor Finnerty

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:



Ryan Butterworth
 Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
19/8635	1	ST04	0.00-1.00	2	03/06/2019	General Description (Bulk Analysis)	soil-stones
					03/06/2019	Asbestos Fibres	NAD
					03/06/2019	Asbestos ACM	NAD
					03/06/2019	Asbestos Type	NAD
					03/06/2019	Asbestos Level Screen	NAD
19/8635	1	TP02	0.00-1.00	5	03/06/2019	General Description (Bulk Analysis)	soil-stones
					03/06/2019	Asbestos Fibres	NAD
					03/06/2019	Asbestos ACM	NAD
					03/06/2019	Asbestos Type	NAD
					03/06/2019	Asbestos Level Screen	NAD
19/8635	1	TP03	0.00-1.00	8	03/06/2019	General Description (Bulk Analysis)	soil-stones
					03/06/2019	Asbestos Fibres	NAD
					03/06/2019	Asbestos ACM	NAD
					03/06/2019	Asbestos Type	NAD
					03/06/2019	Asbestos Level Screen	NAD
19/8635	1	TP04	0.40	11	03/06/2019	General Description (Bulk Analysis)	soil-stones
					03/06/2019	Asbestos Fibres	NAD
					03/06/2019	Asbestos ACM	NAD
					03/06/2019	Asbestos Type	NAD
					03/06/2019	Asbestos Level Screen	NAD
19/8635	1	SOIL HEAP1 STOCKPILE 1		14	03/06/2019	General Description (Bulk Analysis)	Soil/Stones
					03/06/2019	Asbestos Fibres	NAD
					03/06/2019	Asbestos ACM	NAD
					03/06/2019	Asbestos Type	NAD
					03/06/2019	Asbestos Level Screen	NAD
19/8635	1	SOIL HEAP2 STOCKPILE 2		17	03/06/2019	General Description (Bulk Analysis)	Soil/Stones
					03/06/2019	Asbestos Fibres	NAD
					03/06/2019	Asbestos ACM	NAD
					03/06/2019	Asbestos Type	NAD
					03/06/2019	Asbestos Level Screen	NAD
19/8635	1	SOIL HEAP3 STOCKPILE 3		20	03/06/2019	General Description (Bulk Analysis)	Soil/Stones
					03/06/2019	Asbestos Fibres	NAD
					03/06/2019	Asbestos ACM	NAD

Client Name: Ground Investigations Ireland
Reference: 19/05/8712
Location: Old Greenfields
Contact: Conor Finnerty

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
19/8635	1	SOIL HEAP3 STOCKPILE 3	20		03/06/2019	Asbestos Type	NAD
					03/06/2019	Asbestos Level Screen	NAD
19/8635	1	SOIL HEAP4 STOCKPILE 4	23		03/06/2019	General Description (Bulk Analysis)	Soil/Stones
					03/06/2019	Asbestos Fibres	NAD
					03/06/2019	Asbestos ACM	NAD
					03/06/2019	Asbestos Type	NAD
					03/06/2019	Asbestos Level Screen	NAD

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 19/8635

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Please include all sections of this report if it is reproduced

All solid results are expressed on a dry weight basis unless stated otherwise.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to an Exova Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

Appendix - Methods used for WAC (2003/33/EC)

JE Job No.: 19/8635

Leachate tests	
10l/kg; 4mm	I.S. EN 12457-2:2002 Specified particle size; water added to L/S ratio; capped; agitated for 24 ± 0.5 hours; eluate settled and filtered over 0.45 µm membrane filter.
Eluate analysis	
As	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ba	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cd	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cr total	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Cu	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Hg	I.S. EN 13370 rec. EN 1483 (CVAAS)
Mo	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Ni	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Pb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Sb	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Se	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Zn	I.S. EN 12506 : EN ISO 11885 (ICP-OES)
Chloride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Fluoride	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Sulphate	I.S. EN 12506 rec. EN ISO 10304-part 1 (liquid chromatography of ions)
Phenol index	I.S. EN 13370 rec. ISO 6439 (4-Aminoantipyrine spectrometric methods after distillation)* (BY HPLC - Jones Env)
DOC	I.S. EN 1484
TDS	I.S. EN 15216
Compositional analysis	
TOC	I.S. EN 13137 Method B: carbonates removed with acid; TOC by combustion.
BTEX	GC-FID
PCB7**	I.S. EN 15308 analysis by GC-ECD.
Mineral oil	I.S. EN 14039 C10 to C40 analysis by GC-FID.
PAH17***	I.S. EN 15527 PAH17 analysis by GC-MS
Metals	I.S. EN 13657 - Aqua regia digestion: EN ISO 11885 (ICP-OES)
Other	
Dry matter	I.S. EN 14346 sample is dried to a constant mass in an oven at 105 ± 3 °C; Method B Water content by direct Karl-Fischer-titration and either volumetric or coulometric detection.
LOI	I.S. EN 15169 Difference in mass after heating in a furnace up to 550 ± 25 °C.
ANC	CEN/TS 15364 Determined by amounts of acid or base needed to cover the pH range
<p>Notes:</p> <p>*If not suitable due to LOD, precision, etc., any other suitable method can be used, e.g. AFS, ICP-MS</p> <p>**PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153 and PCB-180</p> <p>***Naphthalene, Acenaphthylene, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Benzo(a)pyrene, Chrysene, Coronene, Dibenzo(a,h)anthracene, Fluorene, Fluoranthene, Indeno(1,2,3-c,d)pyrene, Phenanthrene and Pyrene.</p>	

JE Job No: 19/8635

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM16	Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.			AR	Yes
TM5	Modified 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) within the range C8-C40 by GCFID. For waters the solvent extracts dissolved phase plus a sheen if present.	PM8/PM16	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required/Fractionation into aliphatic and aromatic fractions using a Rapid Trace SPE.	Yes		AR	Yes
TM5/TM36	please refer to TM5 and TM36 for method details	PM8/PM12/PM16	please refer to PM8/PM16 and PM12 for method details			AR	Yes
TM17	Modified US EPA method 8270. Determination of specific Polychlorinated Biphenyl congeners by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM20	Modified BS 1377-3: 1990/USEPA 160.3 Gravimetric determination of Total Dissolved Solids/Total Solids	PM0	No preparation is required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Dried and ground solid samples are washed with hydrochloric acid, then rinsed with deionised water to remove the mineral carbon before TOC analysis.	Yes		AD	Yes

JE Job No: 19/8635

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM0	No preparation is required.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM17	Modified method BS EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.	Yes		AR	Yes
TM31	Modified USEPA 8015B. Determination of Methylterbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM31	Modified USEPA 8015B. Determination of Methylterbutylether, Benzene, Toluene, Ethylbenzene and Xylene by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID. MTBE by GCFID co-elutes with 3-methylpentane if present and therefore can give a false positive. Positive MTBE results can be confirmed using GCMS.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM0	No preparation is required.	Yes		AR	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes

JE Job No: 19/8635

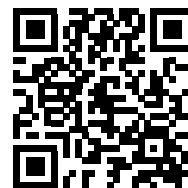
Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+) comparable to BS ISO 15923-1, 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM60	TC/TOC analysis of Waters by High Temperature Combustion followed by NDIR detection. Based on the following modified standard methods: USEPA 9060, APHA Standard Methods for Examination of Water and Wastewater 5310B, ASTM D 7573, and USEPA 415.1.	PM0	No preparation is required.			AR	Yes
TM61	Modified US EPA methods 245.7 and 200.7. Determination of Mercury by Cold Vapour Atomic Fluorescence.	PM0	No preparation is required.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.			AR	Yes
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM173	Analysis of fluoride by ISE (Ion Selective Electrode) using modified ISE method 340.2	PM0	No preparation is required.			AR	Yes
NONE	No Method Code	NONE	No Method Code			AD	Yes
NONE	No Method Code	PM17	Modified method BS EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.				
NONE	No Method Code	PM17	Modified method BS EN12457-2 As received solid samples are leached with water in a 10:1 water to soil ratio for 24 hours, the moisture content of the sample is included in the ratio.			AR	

JE Job No: 19/8635

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
NONE	No Method Code	PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.			AR	

APPENDIX 5 – Hazwaste Online Report

Waste Classification Report



XSM3Z-BH976-MAAG7

Job name

Old Greenfield Site

Description/Comments

Project

8712-05-19

Site

Old Greenfield Site

Related Documents

#	Name	Description
1	Old Greenfield Site.HWOL	.hwol file used to create the Job

Waste Stream Template

Example waste stream template for contaminated soils

Classified by

Name:
Barry Sexton
Date:
26 Jun 2019 10:07 GMT
Telephone:
00353876119640

Company:
Ground Investigations Ireland
Catherinestown House,
Hazelhatch Road, Newcastle
Co. Dublin

Report

Created by: Barry Sexton
Created date: 26 Jun 2019 10:07 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	ST04-27/05/2019-0.00-1.00m		Non Hazardous		3
2	TP02-27/05/2019-0.00-1.00m		Non Hazardous		6
3	TP03-27/05/2019-0.00-1.00m		Non Hazardous		9
4	TP04-27/05/2019-0.40m		Non Hazardous		12
5	SOIL HEAP1 STOCKPILE 1-27/05/2019		Non Hazardous		15
6	SOIL HEAP2 STOCKPILE 2-27/05/2019		Non Hazardous		18
7	SOIL HEAP3 STOCKPILE 3-27/05/2019		Non Hazardous		21
8	SOIL HEAP4 STOCKPILE 4-27/05/2019		Non Hazardous		24

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	27
Appendix B: Rationale for selection of metal species	28
Appendix C: Version	29

Classification of sample: ST04-27/05/2019-0.00-1.00m

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name: ST04-27/05/2019-0.00-1.00m	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 18.1% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

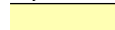



Determinands

Moisture content: 18.1% Wet Weight Moisture Correction applied (MC)


#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				2 mg/kg	1.197	1.961 mg/kg	0.000196 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				9.1 mg/kg	1.32	9.84 mg/kg	0.000984 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium oxide }				3.9 mg/kg	1.142	3.649 mg/kg	0.000365 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide }				50.3 mg/kg	1.462	60.21 mg/kg	0.00602 %	✓	
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	16.598 mg/kg	0.00166 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	163 mg/kg	1.56	208.231 mg/kg	0.0133 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	molybdenum { molybdenum(VI) oxide }				3.1 mg/kg	1.5	3.809 mg/kg	0.000381 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
10	nickel { nickel chromate }				35.4 mg/kg	2.976	86.29 mg/kg	0.00863 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2 mg/kg	2.554	4.183 mg/kg	0.000418 %	✓	
	034-002-00-8									
12	zinc { zinc chromate }				146 mg/kg	2.774	331.716 mg/kg	0.0332 %	✓	
	024-007-00-3									
13	TPH (C6 to C40) petroleum group		TPH		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	pH				8.15 pH		8.15 pH	8.15 pH		
			PH							
20	naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
23	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5	86-73-7							
24	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
25	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1	120-12-7							
26	fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4	206-44-0							
27	pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3	129-00-0							
28	benzo[a]anthracene				<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8	191-24-2							
36	polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
37	barium { barium oxide }				207 mg/kg	1.117	189.285 mg/kg	0.0189 %	✓	
		215-127-9	1304-28-5							
38	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7	191-07-1							
39	benzo[j]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-035-00-X	205-910-3	205-82-3							
Total:								0.0895 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP02-27/05/2019-0.00-1.00m


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample Name: TP02-27/05/2019-0.00-1.00m	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 17.7% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

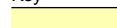



Determinands

Moisture content: 17.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				1 mg/kg	1.197	0.985 mg/kg	0.0000985 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				8.7 mg/kg	1.32	9.454 mg/kg	0.000945 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium oxide }				2.2 mg/kg	1.142	2.068 mg/kg	0.000207 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide }				31.8 mg/kg	1.462	38.251 mg/kg	0.00383 %	✓	
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }				27 mg/kg	1.126	25.018 mg/kg	0.0025 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	28 mg/kg	1.56	35.944 mg/kg	0.0023 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	molybdenum { molybdenum(VI) oxide }				2.3 mg/kg	1.5	2.84 mg/kg	0.000284 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
10	nickel { nickel chromate }				32.6 mg/kg	2.976	79.853 mg/kg	0.00799 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	2.554	2.102 mg/kg	0.00021 %	✓	
	034-002-00-8									
12	zinc { zinc chromate }				117 mg/kg	2.774	267.125 mg/kg	0.0267 %	✓	
	024-007-00-3									
13	TPH (C6 to C40) petroleum group		TPH		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	pH				8.31 pH		8.31 pH	8.31 pH		
			PH							
20	naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
23	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5	86-73-7							
24	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
25	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1	120-12-7							
26	fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4	206-44-0							
27	pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3	129-00-0							
28	benzo[a]anthracene				<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8	191-24-2							
36	polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
37	barium { barium oxide }				97 mg/kg	1.117	89.132 mg/kg	0.00891 %	✓	
		215-127-9	1304-28-5							
38	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7	191-07-1							
39	benzo[j]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-035-00-X	205-910-3	205-82-3							
Total:								0.0594 %		

Key

-
-  User supplied data
 -  Determinand values ignored for classification, see column 'Conc. Not Used' for reason
 -  Determinand defined or amended by HazWasteOnline (see Appendix A)
 -  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
 - <LOD** Below limit of detection
 - CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: TP03-27/05/2019-0.00-1.00m

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name: TP03-27/05/2019-0.00-1.00m	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 11.7% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

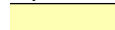



Determinands

Moisture content: 11.7% Wet Weight Moisture Correction applied (MC)


#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				2 mg/kg	1.197	2.114 mg/kg	0.000211 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				8.4 mg/kg	1.32	9.793 mg/kg	0.000979 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium oxide }				2.4 mg/kg	1.142	2.421 mg/kg	0.000242 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide }				34.5 mg/kg	1.462	44.524 mg/kg	0.00445 %	✓	
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }				24 mg/kg	1.126	23.86 mg/kg	0.00239 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	16 mg/kg	1.56	22.037 mg/kg	0.00141 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	molybdenum { molybdenum(VI) oxide }				2.6 mg/kg	1.5	3.444 mg/kg	0.000344 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
10	nickel { nickel chromate }				37 mg/kg	2.976	97.238 mg/kg	0.00972 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	2.554	2.255 mg/kg	0.000225 %	✓	
	034-002-00-8									
12	zinc { zinc chromate }				90 mg/kg	2.774	220.461 mg/kg	0.022 %	✓	
	024-007-00-3									
13	TPH (C6 to C40) petroleum group		TPH		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	pH				8.54 pH		8.54 pH	8.54 pH		
			PH							
20	naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
23	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5	86-73-7							
24	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
25	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1	120-12-7							
26	fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4	206-44-0							
27	pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3	129-00-0							
28	benzo[a]anthracene				<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8	191-24-2							
36	polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
37	barium { barium oxide }				70 mg/kg	1.117	69.011 mg/kg	0.0069 %	✓	
		215-127-9	1304-28-5							
38	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7	191-07-1							
39	benzo[j]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-035-00-X	205-910-3	205-82-3							
Total:								0.0544 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP04-27/05/2019-0.40m


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample Name: TP04-27/05/2019-0.40m	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 20.8% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

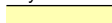



Determinands

Moisture content: 20.8% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				2 mg/kg	1.197	1.896 mg/kg	0.00019 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				8.2 mg/kg	1.32	8.575 mg/kg	0.000857 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium oxide }				1.9 mg/kg	1.142	1.719 mg/kg	0.000172 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide }				53.8 mg/kg	1.462	62.276 mg/kg	0.00623 %	✓	
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }				22 mg/kg	1.126	19.617 mg/kg	0.00196 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	21 mg/kg	1.56	25.943 mg/kg	0.00166 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	molybdenum { molybdenum(VI) oxide }				3.2 mg/kg	1.5	3.802 mg/kg	0.00038 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
10	nickel { nickel chromate }				33 mg/kg	2.976	77.788 mg/kg	0.00778 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2 mg/kg	2.554	4.045 mg/kg	0.000404 %	✓	
	034-002-00-8									
12	zinc { zinc chromate }				82 mg/kg	2.774	180.164 mg/kg	0.018 %	✓	
	024-007-00-3									
13	TPH (C6 to C40) petroleum group		TPH		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	pH				7.88 pH		7.88 pH	7.88 pH		
			PH							
20	naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
23	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5	86-73-7							
24	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
25	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1	120-12-7							
26	fluoranthene				0.06 mg/kg		0.0475 mg/kg	0.00000475 %	✓	
		205-912-4	206-44-0							
27	pyrene				0.06 mg/kg		0.0475 mg/kg	0.00000475 %	✓	
		204-927-3	129-00-0							
28	benzo[a]anthracene				0.1 mg/kg		0.0792 mg/kg	0.00000792 %	✓	
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				0.04 mg/kg		0.0317 mg/kg	0.00000317 %	✓	
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8	191-24-2							
36	polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
37	barium { barium oxide }				105 mg/kg	1.117	92.849 mg/kg	0.00928 %	✓	
		215-127-9	1304-28-5							
38	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7	191-07-1							
39	benzo[j]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-035-00-X	205-910-3	205-82-3							
Total:								0.0524 %		

Key

-
-  User supplied data
 -  Determinand values ignored for classification, see column 'Conc. Not Used' for reason
 -  Determinand defined or amended by HazWasteOnline (see Appendix A)
 -  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
 - <LOD** Below limit of detection
 - CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: SOIL HEAP1 STOCKPILE 1-27/05/2019

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name: SOIL HEAP1 STOCKPILE 1-27/05/2019	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 14.2% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

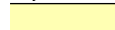



Determinands

Moisture content: 14.2% Wet Weight Moisture Correction applied (MC)


#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				2 mg/kg	1.197	2.054 mg/kg	0.000205 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				12.8 mg/kg	1.32	14.5 mg/kg	0.00145 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium oxide }				3.6 mg/kg	1.142	3.528 mg/kg	0.000353 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide }				53.3 mg/kg	1.462	66.839 mg/kg	0.00668 %	✓	
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }				29 mg/kg	1.126	28.014 mg/kg	0.0028 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	33 mg/kg	1.56	44.165 mg/kg	0.00283 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	molybdenum { molybdenum(VI) oxide }				3.6 mg/kg	1.5	4.634 mg/kg	0.000463 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
10	nickel { nickel chromate }				52.1 mg/kg	2.976	133.044 mg/kg	0.0133 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				2 mg/kg	2.554	4.382 mg/kg	0.000438 %	✓	
	034-002-00-8									
12	zinc { zinc chromate }				170 mg/kg	2.774	404.637 mg/kg	0.0405 %	✓	
	024-007-00-3									
13	TPH (C6 to C40) petroleum group		TPH		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	pH				8.35 pH		8.35 pH	8.35 pH		
			PH							
20	naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
23	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5	86-73-7							
24	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
25	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1	120-12-7							
26	fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4	206-44-0							
27	pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3	129-00-0							
28	benzo[a]anthracene				<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8	191-24-2							
36	polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
37	barium { barium oxide }				144 mg/kg	1.117	137.947 mg/kg	0.0138 %	✓	
		215-127-9	1304-28-5							
38	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7	191-07-1							
39	benzo[j]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-035-00-X	205-910-3	205-82-3							
Total:								0.0882 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: SOIL HEAP2 STOCKPILE 2-27/05/2019


Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample Name:	LoW Code:	
SOIL HEAP2 STOCKPILE 2-27/05/2019	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
14.1% (wet weight correction)		

Hazard properties

None identified

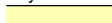



Determinands

Moisture content: 14.1% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				2 mg/kg	1.197	2.057 mg/kg	0.000206 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				8.8 mg/kg	1.32	9.981 mg/kg	0.000998 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium oxide }				2 mg/kg	1.142	1.963 mg/kg	0.000196 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide }				49.6 mg/kg	1.462	62.272 mg/kg	0.00623 %	✓	
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }				34 mg/kg	1.126	32.883 mg/kg	0.00329 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	18 mg/kg	1.56	24.118 mg/kg	0.00155 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	molybdenum { molybdenum(VI) oxide }				3.3 mg/kg	1.5	4.253 mg/kg	0.000425 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
10	nickel { nickel chromate }				43.4 mg/kg	2.976	110.957 mg/kg	0.0111 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	2.554	2.194 mg/kg	0.000219 %	✓	
	034-002-00-8									
12	zinc { zinc chromate }				100 mg/kg	2.774	238.299 mg/kg	0.0238 %	✓	
	024-007-00-3									
13	TPH (C6 to C40) petroleum group				<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
			TPH							
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	pH				8.55 pH		8.55 pH	8.55 pH		
			PH							
20	naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
23	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5	86-73-7							
24	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
25	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1	120-12-7							
26	fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4	206-44-0							
27	pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3	129-00-0							
28	benzo[a]anthracene				<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8	191-24-2							
36	polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
37	barium { barium oxide }				118 mg/kg	1.117	113.171 mg/kg	0.0113 %	✓	
		215-127-9	1304-28-5							
38	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7	191-07-1							
39	benzo[j]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-035-00-X	205-910-3	205-82-3							
Total:								0.0648 %		

Key

-
-  User supplied data
 -  Determinand values ignored for classification, see column 'Conc. Not Used' for reason
 -  Determinand defined or amended by HazWasteOnline (see Appendix A)
 -  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
 - <LOD** Below limit of detection
 - CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: SOIL HEAP3 STOCKPILE 3-27/05/2019

✔ **Non Hazardous Waste**
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name: SOIL HEAP3 STOCKPILE 3-27/05/2019	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 11.3% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

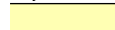



Determinands


Moisture content: 11.3% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				6 mg/kg	1.197	6.371 mg/kg	0.000637 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				39.9 mg/kg	1.32	46.728 mg/kg	0.00467 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium oxide }				12.3 mg/kg	1.142	12.463 mg/kg	0.00125 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide }				65.8 mg/kg	1.462	85.303 mg/kg	0.00853 %	✓	
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }				167 mg/kg	1.126	166.777 mg/kg	0.0167 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	51 mg/kg	1.56	70.561 mg/kg	0.00452 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	molybdenum { molybdenum(VI) oxide }				9.5 mg/kg	1.5	12.641 mg/kg	0.00126 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
10	nickel { nickel chromate }				85.1 mg/kg	2.976	224.659 mg/kg	0.0225 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1 mg/kg	2.554	2.265 mg/kg	0.000227 %	✓	
	034-002-00-8									
12	zinc { zinc chromate }				275 mg/kg	2.774	676.684 mg/kg	0.0677 %	✓	
	024-007-00-3									
13	TPH (C6 to C40) petroleum group		TPH		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	pH				8.45 pH		8.45 pH	8.45 pH		
			PH							
20	naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
23	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5	86-73-7							
24	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
25	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1	120-12-7							
26	fluoranthene				0.09 mg/kg		0.0798 mg/kg	0.00000798 %	✓	
		205-912-4	206-44-0							
27	pyrene				0.09 mg/kg		0.0798 mg/kg	0.00000798 %	✓	
		204-927-3	129-00-0							
28	benzo[a]anthracene				0.08 mg/kg		0.071 mg/kg	0.0000071 %	✓	
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				0.08 mg/kg		0.071 mg/kg	0.0000071 %	✓	
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				0.11 mg/kg		0.0976 mg/kg	0.00000976 %	✓	
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				0.04 mg/kg		0.0355 mg/kg	0.00000355 %	✓	
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				0.05 mg/kg		0.0444 mg/kg	0.00000444 %	✓	
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				0.06 mg/kg		0.0532 mg/kg	0.00000532 %	✓	
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				0.06 mg/kg		0.0532 mg/kg	0.00000532 %	✓	
		205-883-8	191-24-2							
36	polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
37	barium { barium oxide }				119 mg/kg	1.117	117.851 mg/kg	0.0118 %	✓	
		215-127-9	1304-28-5							
38	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7	191-07-1							
39	benzo[j]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-035-00-X	205-910-3	205-82-3							
Total:								0.145 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: SOIL HEAP4 STOCKPILE 4-27/05/2019

Non Hazardous Waste
 Classified as **17 05 04**
 in the List of Waste

Sample details

Sample Name: SOIL HEAP4 STOCKPILE 4-27/05/2019	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 15% (wet weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

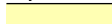



Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<1 mg/kg	1.197	<1.197 mg/kg	<0.00012 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				4.1 mg/kg	1.32	4.601 mg/kg	0.00046 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	cadmium { cadmium oxide }				1.1 mg/kg	1.142	1.068 mg/kg	0.000107 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide }				20.5 mg/kg	1.462	25.468 mg/kg	0.00255 %	✓	
		215-160-9	1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }				11 mg/kg	1.126	10.527 mg/kg	0.00105 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	lead { lead chromate }			1	8 mg/kg	1.56	10.607 mg/kg	0.00068 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
8	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
9	molybdenum { molybdenum(VI) oxide }				1.8 mg/kg	1.5	2.295 mg/kg	0.00023 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
10	nickel { nickel chromate }				13.5 mg/kg	2.976	34.153 mg/kg	0.00342 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
11	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
	034-002-00-8									
12	zinc { zinc chromate }				46 mg/kg	2.774	108.469 mg/kg	0.0108 %	✓	
	024-007-00-3									
13	TPH (C6 to C40) petroleum group		TPH		<52 mg/kg		<52 mg/kg	<0.0052 %		<LOD
14	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.005 mg/kg		<0.005 mg/kg	<0.0000005 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
15	benzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-020-00-8	200-753-7	71-43-2							
16	toluene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-021-00-3	203-625-9	108-88-3							
17	ethylbenzene				<0.005 mg/kg		<0.005 mg/kg	<0.000005 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
18	xylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
19	pH				8.44 pH		8.44 pH	8.44 pH		
			PH							
20	naphthalene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
21	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
22	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9							
23	fluorene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		201-695-5	86-73-7							
24	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
25	anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		204-371-1	120-12-7							
26	fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4	206-44-0							
27	pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3	129-00-0							
28	benzo[a]anthracene				<0.06 mg/kg		<0.06 mg/kg	<0.000006 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
29	chrysene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
30	benzo[b]fluoranthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
31	benzo[k]fluoranthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
32	benzo[a]pyrene; benzo[def]chrysene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
33	indeno[123-cd]pyrene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-893-2	193-39-5							
34	dibenz[a,h]anthracene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
35	benzo[ghi]perylene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-883-8	191-24-2							
36	polychlorobiphenyls; PCB				<0.035 mg/kg		<0.035 mg/kg	<0.0000035 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
37	barium { barium oxide }				27 mg/kg	1.117	25.624 mg/kg	0.00256 %	✓	
		215-127-9	1304-28-5							
38	coronene				<0.04 mg/kg		<0.04 mg/kg	<0.000004 %		<LOD
		205-881-7	191-07-1							
39	benzo[j]fluoranthene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-035-00-X	205-910-3	205-82-3							
Total:								0.0277 %		

Key

-
-  User supplied data
 -  Determinand values ignored for classification, see column 'Conc. Not Used' for reason
 -  Determinand defined or amended by HazWasteOnline (see Appendix A)
 -  Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
 - <LOD** Below limit of detection
 - CLP: Note 1 Only the metal concentration has been used for classification

Appendix A: Classifier defined and non CLP determinands

• **chromium(III) oxide** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

• **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

• **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4

Description/Comments:

Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)

Additional Hazard Statement(s): Carc. 2 H351

Reason for additional Hazards Statement(s)/Risk Phrase(s):

03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

• **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

• **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

• **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

• **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

• **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

• **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

• **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

• **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 21 Aug 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

• **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

• **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

• **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans; POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s)/Risk Phrase(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

• **barium oxide** (EC Number: 215-127-9, CAS Number: 1304-28-5)

Conversion factor: 1.117
Description/Comments: Data from C&L Inventory Database; No entries in Registered Substances Database, IARC or Pesticide Properties Database
Data source:
<http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=88825&HarmOnly=no?fc=true&lang=en>
Data source date: 02 Jun 2014
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Corr. 1A H314 , Acute Tox. 3 H301 , Acute Tox. 4 H302 , Acute Tox. 4 H332

• **coronene** (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source:
<http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en>
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2 H371

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings (edit as required)

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil. (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

barium {barium oxide}

Cr VI not detected

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018

HazWasteOnline Classification Engine Version: 2019.163.3889.7904 (12 Jun 2019)

HazWasteOnline Database: 2019.163.3889.7904 (12 Jun 2019)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Wastes 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004

1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010

2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010