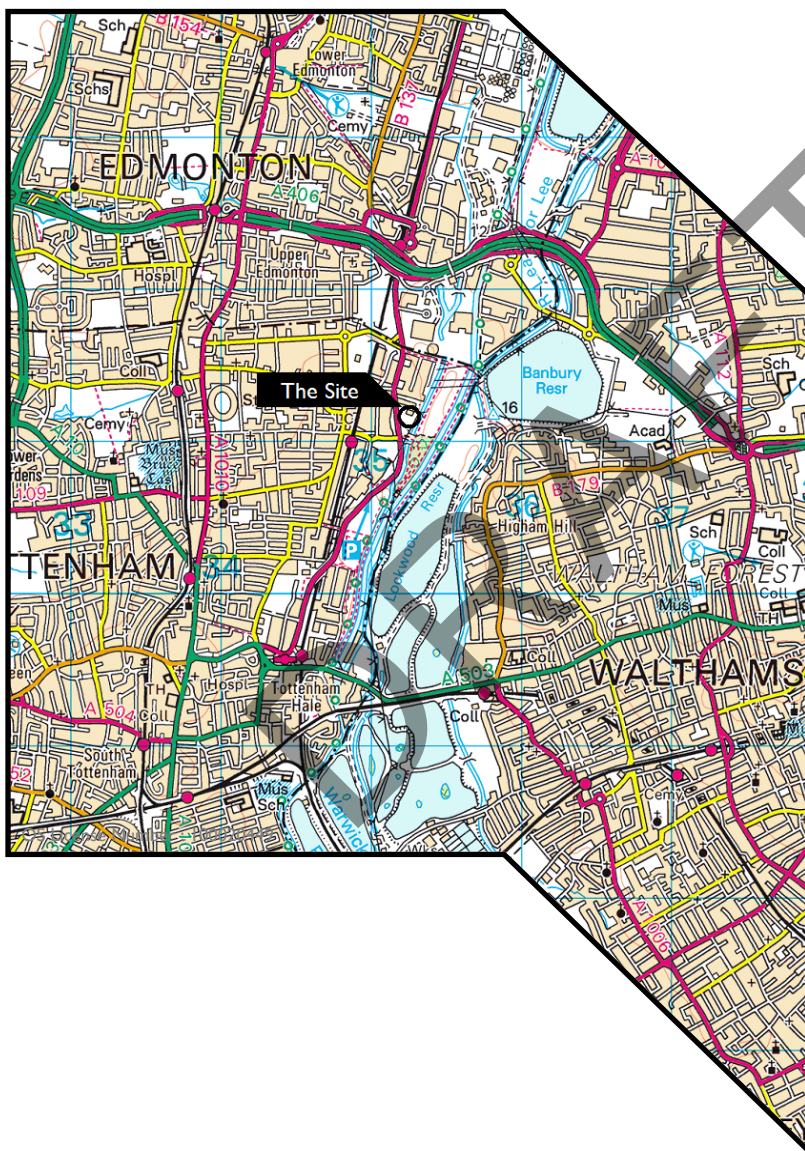


Ground Investigation



www.geotechnics.co.uk



Tottenham Substation

Factual Report

for
Mott MacDonald Limited

Project Number PC187331

January 2019

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Ground Investigation
at

Factual Report

Tottenham Substation

for
Mott MacDonald Limited

DRAFT

Project No:

PCI87331

January 2019

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1.0 INTRODUCTION

A geotechnical and geoenvironmental investigation was undertaken by Geotechnics Limited at the site of a proposed compound to be constructed as part of the National Grid North London Reinforcement Project. The investigation was carried out to the instructions and on behalf of the Client, Mott MacDonald Limited. This report describes the work undertaken and presents the data obtained.

2.0 OBJECT AND SCOPE OF THE INVESTIGATION

The object of the investigation was to obtain information on the ground and groundwater conditions relating to the design of the proposed works within the limitations posed by trial hole numbers, locations, depths, methods adopted and the scope of approved in situ and laboratory testing. The Brief for the project is included in Appendix 1. The investigation comprised dynamic sample boreholes, in situ and laboratory testing and reporting. A Factual Report was also commissioned.

3.0 PRESENTATION

A description of the site and a summary of the procedures followed during the investigation process are presented in Sections 4 to 6. The factual data so obtained are presented in Appendices 2 to 6 of this report. Attention is drawn to the General Notes and Investigation Procedures presented in Appendix 7 to aid an understanding of the procedures followed and the context in which the report should be read. In addition, data in electronic format in accordance with "The Electronic Transfer of Geotechnical Data from Ground Investigations" published by the AGS (the AGS Format) is also available.

4.0 THE SITE

4.1 Location

The site is located approximately 0.41km north east of Northumberland Park Rail Station, to the east of the A1055 Watermead Way, within the London Borough of Haringey. The approximate Ordnance Survey National Grid Reference for the site is TQ 352 911 and an extract from the relevant 1:50,000 Scale O.S. Map (Sheet No. 177) is included as Appendix 2.

4.2 Description

The site is approximately square shape and covers an area of about 2Ha. The area is divided by an existing fence line which runs east/west through the centre of the site. The area is densely vegetated with grasses, bushes and small trees, with the vegetation in the northern half of the site being denser than the southern half. The site is bound to the north by Tottenham substation, to the east by Pymmes Brook with parkland beyond, to the south by parkland/recreation ground and to the west by the A1055, Watermead Way.

4.3 Site Geology

The British Geological Survey website, <http://www.mapapps.bgs.ac.uk>, accessed on the 7th January 2019, shows the site to be underlain by the London Clay Formation, comprising clay, silt and sand of Paleogene age. This is shown to be overlain by superficial deposits of Alluvium, comprising clay, silt, sand and gravel of Quaternary age.

4.4 Hydrogeology

The DEFRA website, <https://www.magic.defra.gov.uk>, accessed on the 7th January 2019, shows the bedrock geology to be a non-aquifer. The superficial geology is shown to be a Secondary A aquifer, meaning it has permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as

minor aquifers.

5.0 PROCEDURE

5.1 Commissioning

The work was awarded following submission of a tender for work designed by the Client for ground investigation of the site in accordance with their requirements (see Appendix 1).

5.2 General

The procedures followed in this site investigation are based on *BS 5930: 2015 – Code of Practice for Site Investigations* and *BS 10175:2011+A2:2017 – Investigation of Potentially Contaminated Sites*. The soils and rocks encountered have been described in accordance with BS5930:2015 and BS EN ISO 14688-1:2018 and BS EN ISO 14689:2018. The Dynamic Sample Borehole Records are included in Appendix 3 and their approximate positions are shown on the Exploratory Hole Location Plan in Appendix 4.

The Exploratory Hole locations were specified by the Client. The co-ordinates and levels shown on the Exploratory Hole Records were measured using a Leica GPS survey device. The depths quoted on the exploratory hole records are in metres below ground level.

Prior to the investigation, a survey was carried out by Amber Utilities Limited utilising Ground Penetrating Radar, Cable Avoidance Tools and Signal Generators to check for the presence of buried services at the proposed exploratory hole locations.

At each exploratory hole location an inspection pit was excavated using hand tools to a depth of 1.20m below ground level to check for the presence of underground services. Prior to and on completion of the excavation, the location was scanned using a cable avoidance tool (CAT).

5.3 Dynamic Sample Boreholes

Six (6 No.) Dynamic Sample Boreholes (numbered MMHA01-04 and MMWS01-02) were undertaken at the site to depths varying between 2.00 and 8.00m below ground level. The work was carried out on the 12 and 13th December 2018.

The Dynamic Samples were taken using the super-heavy equipment which drives lined steel tubes into the ground in 1m lengths. Samples are retrieved in

the plastic liners. The hole is cased as required and progress depends on the nature of the strata penetrated.

Groundwater observations are included on the Borehole Records where appropriate and any rise in water level was recorded over 20 minutes whilst drilling operations were suspended.

On completion, standpipes were installed in Boreholes MMWS01 and MMWS02 (see Section 5.4). The other boreholes were backfilled with bentonite.

5.4 Instrumentation and Monitoring

Long-term monitoring of the groundwater levels was made possible by the installation of standpipes as follows:

Exploratory Hole	Standpipe Slotted Pipe & Filter Zone (m)
MMWS01	6.20 to 6.80
MMWS02	1.50 to 4.50

Monitoring of the groundwater levels at the site commenced on the 19th December 2018 with further visits on the 10th and 18th January 2019.

On each of the monitoring visits a PID reading was undertaken and a record of the groundwater level in the standpipes was obtained together with a measurement of any free product using an oil interface meter.

On each visit where water was recorded, samples were obtained following a purging of three times the volume of water in the standpipe. On completion of the purging, the following parameters were recorded.

- Temperature (°C)
- Electrical Conductivity (mS/cm)
- Dissolved Oxygen Concentration (%)
- pH
- Redox Potential (mV)

The results of the monitoring are presented in Appendix 5.

6.0 LABORATORY TESTING

6.1 Geotechnical

No geotechnical laboratory testing was commissioned as part of this contract.

6.2 Contamination

Selected samples of soil and groundwater were tested at the laboratories of Derwentside Environmental Testing Services for a number of determinands in order to check on potential site contamination. The determinands were specified by the Client and are detailed on the results sheets in Appendix 6 together with the test result as well as the test method, accreditation and detection limit.

Signed for and on behalf of Geotechnics Limited.

Prepared by:

Steven Chapman
BSc(Hons), MSc, FGS
Senior Engineer

Reviewed by:

David Bland
BSc, MSc, CGeol, FGS
Principal Engineer

DRAFT

DRAFT

APPENDIX I

The Brief

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National Grid North London Reinforcement Project

CONTAMINATION ASSESSMENT

30 October 2018

For the attention of:

Dear Sir/Madam,

On behalf of National Grid Property Holdings Ltd., we invite your quotation for an intrusive geo-environmental ground investigation survey and warranted factual report for a site located in Tottenham, London. The site is part of the National Grid North London Reinforcement Project and development proposals include cable sealing end foundations and fence foundations for a proposed compound in the north eastern corner of a recreational ground in close proximity to Tottenham Marshes, referred to hereinafter as "the site".

Further to a preferred quotation being selected, Mott MacDonald will place the order for the survey. All quotations should be addressed as below.

For the attention of:

Emily Royan
8-10 Sydenham Road
Croydon CR0 2EE
United Kingdom

Telephone: (0)20 8774 2000
Email: Emily.royan@mottmac.com

The site address is detailed below. Please do not contact the site directly. We will liaise with National Grid Property Holdings Ltd to arrange a date/time that is mutually convenient to all parties. The site is currently in the ownership of Lee Valley Regional Park Authority. Access is in accordance with the agreed Heads of Terms between the Landlord and the Lee Valley Regional Park Authority.

1.0 Proposed Site

General Site Access: Access is from Watermead Way via a locked double gate opposite the junction with Marigold Road and is suitable for vehicular access, (N17 0UR). The site is also publicly accessible via pedestrian gate.

Address: Plot of Land/Recreational Ground off Watermead Way, London N17 0UR.

Worley Parsons undertook a Geotechnical and Environmental Assessment Site Investigation in 2013. The report describes the encountered geology across a wider site area, but also includes positions within the current proposed site. A copy of this document will be provided to the successful tenderer.

The Warley Parsons ground investigation in 2013 had two exploratory positions located within the proposed site area and one adjacent to the eastern site boundary. Groundwater monitoring wells were installed in these locations for future groundwater monitoring and testing.

During the most recent site walkover the 2013 boreholes were not identified. If during the ground investigation these existing positions are located the ground investigation supervisor should be notified immediately.

If identified and in a suitable condition, the three 2013 boreholes will be used to undertake groundwater sampling and testing as part of the 2018 investigation.

1.1 Geology

Ground conditions comprise of softcover with grass across the majority of the site, with shrubs and trees present in the north-east corner of the site. Previous ground investigations undertaken in 2013 identified that the likely immediate subsurface conditions consist of made ground of thickness varying between 1.4 and 6m. The Kempton Park Gravel was present in all boreholes with varying thickness (0.3 to 2.4m), either beneath the made ground or Alluvium, where present. Alluvium was located in two out of the three boreholes (BH1 and BH3A) at thicknesses between 2.85 and 2.5m. The bedrock geology at the site comprises the London Clay Formation, encountered at depths between 6.3 and 7mbgl. Finally, one borehole encountered the Lambeth Group at depths of 19.1mbgl.

Made ground at the site is described as brown dark gravelly sandy clay with fine to medium sub-angular gravels, plastics, brick, slate, ash ceramic and paper. The previous logs did not describe any olfactory evidence of contamination.

Alluvium was described as a grey slightly sandy gravelly clay with fine to medium sub-angular gravels of flint. A weak hydrocarbon odour was observed.

Kempton Park gravel was described as a light grey sandy fine to coarse sub-angular gravel. Sand is fine to coarse with a weak hydrocarbon odour. BH2 observed a slight oily sheen and hydrocarbon odour.

London Clay was described as firm to stiff grey slightly sandy clay. Sand ins fine to medium. No obvious visual or olfactory evidence of contamination was observed.

1.2 Hydrogeology

Superficial deposits of Kempton Park Gravel at the site are classed as Secondary A aquifers by the Environment Agency, whereas the bedrock (London Clay Formation and Lambeth Group) is classed as Unproductive Strata.

Groundwater was encountered at the site at depths of no less than 3.0m. The site lies within a groundwater Source Protection Zone 1 (SPZ1).

1.2 Site History

Warley Parsons provided limited historical data for the proposed site, however did provide as part of their report a general overview of the history of Tottenham Marshes. Although no information was provided regarding the historical use of this specific part of Tottenham Marshes, the marshes were used as an allotment during the first world war after having been used as common land from the 1800s. Following the second world war, the areas of marshes were used for gravel

extraction and disposal of waste of unknown type and origin as landfill until the 1960s. The site is now used as a recreational ground, with surrounding areas classed as residential or light industrial/commercial. The area of investigation is not indicated as former landfill site on publicly available mapping.

1.3 Site Walkover

A site walkover was undertaken by Mott MacDonald staff on 23rd October 2018. The site is predominantly flat grassed scrubland with some uneven grassed areas. The site area is dissected by a mid-height wooden fence with woodland located to the north of the fence. A tracked window sampler rig cannot be utilised in the area north of the fence as there is no access and the woodland is too dense. It has therefore been proposed that hand held tools are used for exploratory positions in this area. Refer to Annex B for site photographs.

2.0 General Site Matters

Normal precautions shall be taken when excavating or drilling, including Cable Avoidance Tool (CAT) scans and hand dug inspection pits to 1.2m below ground level (bgl). The Contractor is responsible for the repair of any damage caused to utilities, surfaces and access e.g. fencing, gates etc. during the course of the works.

Unexploded ordnance (UXO) risk is classified as moderate from freely available Zetica maps¹. The Contractor shall assess the risk of UXO and undertake further risk assessment if necessary.

3.0 Proposed Works:

These works are part of the National Grid Reinforcement Project across North London. This site is proposed specifically for the construction of cable end sealing foundations and associated fencing foundations within a newly constructed compound.

4.0 Scope of Survey Work

4.1 General

The site investigation work is to be undertaken in accordance with the ICE Conditions of Contract for Ground Investigation (2nd Edition, November 2003), the UK Specification for Ground Investigation (2nd Edition, 2012) and the Code of Practice for Site Investigation, BS5930, unless specified otherwise.

All exploratory/test locations shall be reinstated, where installations are required these will be fitted with upstanding locked covers.

All exploratory/test locations shall be set out prior to construction and surveyed after construction by using a hand-held global positioning system (GPS) to provide National Grid coordinates. Ground levels at all exploratory holes shall be surveyed to an accuracy of 0.01m. Each location is to be added to the site survey drawings, as a layer in AutoCAD, and labelled with the survey reference and ground level. Electronic copies of the topographical survey will be provided for this purpose.

All exploratory holes without instrumentation installed shall be backfilled with arisings and capped unless the arisings are contaminated or if there is a risk of creating a preferential pathway between aquifers. In these cases, the exploratory holes shall be backfilled with bentonite.

¹ Zetica (2018), UXB Risk Maps – London, accessed from http://www.zetica.com/uxb_downloads.htm.

The Contractor shall provide a geo-environmental engineer during the period of exploratory works for supervision, logging of boreholes and handling samples. This individual shall have a minimum of 5 years' experience and be able to demonstrate experience in geotechnical and contamination borehole logging / sampling.

A Mott MacDonald engineer will meet the Contractor's geo-environmental engineer on site on the first day of sampling to agree the exploratory locations and confirm that sampling is being conducted and logs recorded correctly. The successful contractor shall supply method statements and risk assessments at least 1 week prior to works commencing and shall confirm arrangements with Mott MacDonald. See contact details at the end of this letter.

The site is classified under the British Drilling Association (BDA) as Yellow.

4.2 Geo-environmental Sampling and Testing

4.2.1 Windowless Sampling

Windowless samples to investigate potential migration of contaminants in groundwater from adjacent potentially contaminating sources, such as the adjacent landfill. Windowless samples shall be used to obtain soil samples for geo-environmental testing and to allow groundwater monitoring installations to be installed. Two window samples are proposed (MMWS01 and MMWS02).

4.2.2 Hand Auger

Due to access restrictions, it is proposed to undertake four exploratory positions (MMHA01 to MMHA04) using a hand auger tool. The hand auger should follow on after the hand pits to 1.2m depth. These positions should be used to obtain soil samples for geo-environmental testing.

Table 4.2:1 together with the borehole location plan (Annex A) give details of the proposed exploratory holes to be completed at the site.

Table 4.2:1 - Schedule of exploratory holes

Hole reference	Type	Depth (m bgl)	Provisional Installation Requirements	Comments
MMHA01	Hand pit/hand auger	2	n/a	Geo-environmental testing in made ground and shallow natural strata
MMHA02	Hand pit/hand auger	2	n/a	
MMHA03	Hand pit/hand auger	2	n/a	
MMHA04	Hand pit/hand auger	2	n/a	
MMWS01	Windowless sampling (Tracked rig)	8	19mm groundwater monitoring standpipe in River Terrace Deposits.	
MMWS02	Windowless sampling (Tracked rig)	8	19mm groundwater monitoring standpipe in River Terrace Deposits.	

The exploratory positions presented in Table 4.2:2 are those which were not located during the walkover survey. If these positions are encountered during the current ground investigation, then the site supervisor should be notified.

Table 4.2:2- Existing Exploratory Locations

Hole Reference	Type	Depth (m bgl)	Installation response zone	Comments
BH1 (onsite)	Borehole	15	5.8 – 7.8 (Kempton Park Gravels)	Proposed groundwater monitoring and testing
BH2 (onsite)	Borehole	20	5.8 – 6.5 (Kempton Park Gravels)	
BH3A (outside site boundary)	Borehole	15	5.3 – 6.4 (Kempton Park Gravels)	

Hand-dug pits should be excavated prior to the commencement of drilling at all windowless sample locations to 1.2m depth, for health and safety purposes in order to check for services at these exploratory locations.

All installation details and depths are subject to confirmation in light of site conditions and groundwater strikes encountered during drilling and should be confirmed with Mott MacDonald by telephone before installation. The groundwater installations shall be developed prior to sampling in accordance with Environment Agency guidance².

Following installation of the standpipes within the boreholes, as described above, monitoring visits for groundwater will be required. The first visit will take place one week following completion of the ground investigation works (including development of wells) and two further weekly visits will be undertaken in order to obtain groundwater samples for laboratory analysis and to monitor groundwater levels.

Following soil and groundwater sampling, draft logs together with blank test schedules should be sent to Mott MacDonald for contamination test scheduling. Contamination schedules and draft logs should be provided every 48 hours to allow scheduling within acceptable time limits.

4.3 Sampling and In-Situ Testing

Error! Reference source not found. below gives details of the proposed sampling and in-situ testing regime for geo-environmental purposes. Table 4.3:1 Sampling Requirements

Exploratory hole type	Environmental sampling per location
All	0.1, 0.3, 0.5, 1m and at 1m intervals in made ground. Ensure at least 1 sample is taken in the natural material, 0.5m below made ground

4.4 Laboratory Testing

The proposed laboratory testing regime detailed below is based on the anticipated ground conditions; if unexpected conditions are identified during site works, the testing requirements may be revised.

Mott MacDonald Basic Suite:

² Environment Agency (2006), Guidance on the design and installation of groundwater quality monitoring points, Science Report SC020093.

As, B, Ba, Be, Cd, Cr, Cu, Fe, Pb, Hg, Ni, Se, V, Zn, pH, total sulphur, sulphate (water soluble), TPH screen, PCB, PAH screen, phenols, asbestos screen and Total Organic Carbon (soils only)

Mott MacDonald Comprehensive Suite:

As, B, Ba, Be, Cd, Cr III, Cr VI, Cu, Fe, Pb, Hg, Ni, Se, V, Zn, pH, total sulphur, sulphate (water soluble), TPHCWG (aliphatic/aromatic split with CWG banding, by GCMS), PAH (speciated by GCMS), PCB, VOCs (including BTEX), phenols, asbestos screen, Total Organic Carbon (soils only) and hardness (groundwater only).

Asbestos ID and quantification

Asbestos screen and ID and quantification where asbestos has been positively identified.

WAC

Analytical Suite	Determinants
Full WAC Suite	Leachate Suite: As, Ba, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Sb, Se, Zn, Cl-, F-, SO ₄ , total dissolved solids (TDS), phenol index, dissolved organic carbon.
	Solid Waste Suite: Total organic carbon (TOC), loss on ignition, BTEX by GC-FID, pH, acid neutralisation capacity (ANC), PAHs (total), pH, PCBs (7 congeners), mineral oil (C10 – C40 compounds).

Table 3- Laboratory Testing

Analysis	Minimum quantity
Geo-environmental	
Soil Comprehensive suite	8
Soil basic suite	4
Leachate basic suite	2
Groundwater comprehensive suite	6
Asbestos ID/quantification	6
WAC testing	4

4.5 Reporting

A factual report shall be prepared for the site investigation. The draft factual report will be submitted as soon as the laboratory results are received with the final factual report to be submitted following completion of the monitoring works. The factual report shall be warranted, as described in Section 8 below. AGS data will be provided alongside the factual report.

The factual report shall include: -

- Description of the site and the works undertaken;
- Borehole logs and trial pit logs showing the sequence of the soil types encountered;
- The results of in-situ and laboratory tests;
- The results of the contamination assessment;
- Determination of the nature of any made ground or obstructions encountered;
- Description and location of any tree roots encountered;
- Details of any services encountered, and
- Findings of the investigation and a summary of the results.

4.6 Waste Management and Disposal

The Contractor shall contain all drilling spoil, slurry and extracted borehole fluids/groundwater. This shall be completed in such a manner as to minimise the risk of environmental impacts, including visual impacts.

The Contractor shall allow for appropriate disposal of all waste, including an appropriate quantity of Waste Acceptance Criteria (WAC) tests should potentially hazardous materials be suspected, associated classification and management.

4.7 Environmental Requirements

The Contractor shall use non-toxic, non-petroleum, vegetable-based lubricants for all equipment to be inserted into the ground.

All fuel stored on site shall incorporate 110% secondary containment to prevent contamination of the soil as a result of spillages. Refuelling shall be carried out only with a drip tray placed below the refuelling operation. All necessary provisions must be made to prevent spills/leaks of fuel and oil from plant or otherwise.

Mott MacDonald operates an Environmental Management System which requires that environmental factors are considered at project planning and site operation stages. In order to comply with this requirement, the Contractor shall be required to include pollution prevention measures within the site planning. In respect of site investigation activities such considerations may include, but are not limited to: on site fuel storage, refuelling protocols, aquifer protection, storage and disposal of wastes, environmental impacts on other site users and neighbours, etc.

All operations shall be carried out so as not to damage the trees on the site.

a) **Prevention and Minimisation of Pollution of Surface Water**

In executing any works, precautions must be taken to secure the complete protection of water in underground strata against silting or pollution. If notwithstanding these precautions, such silting, or pollution does take place then the Environment Agency should be advised immediately, and immediate action should be taken to minimise the effect on the underground strata.

Wash waters from mobile pressure washers shall not be discharged to surface water drains or soakaways. Detergents, including those described as bio-degradable shall not be discharged to surface water drains. Where possible washing activities shall be carried out in a designated area draining to the foul sewer or contained within a sealed drainage system or catchpit for offsite disposal by a licensed waste contractor. It is the Contractors responsibility to obtain authorisation to discharge to the foul sewer from the sewerage undertaker.

No water shall be discharged from the site to any drain or soakaway without obtaining the appropriate consents, permissions or licences.

b) **Storage and handling of hazardous materials**

All oil stored on site shall comply with the Control of Pollution (Oil Storage) Regulations 2001 and the guidance contained within Environment Agency Pollution Prevention Guidance Note 2 (PPG2).

Refuelling, oiling and greasing shall be strictly controlled and together with any oil storage tanks should be confined to a location remote from any drain above drip trays or within a surfaced area providing protection to underground strata.

Notwithstanding these precautions the Contractor shall put in place a contingency plan and suitable materials to deal with any incident and ensure that employees know what to do in the event of a spillage.

Only construction equipment and vehicles free of all oil/fuel leaks will be permitted on Site.

Leaking or empty oil drums must be removed from the site immediately.

5.0 CDM Regulations

The successful GI Contractor will be nominally appointed as the Principal Contractor (PC), but the extent to which the PC duties would need to be carried should be commensurate with the identified risks.

The potential residual risks of the ground investigation are understood to be:-

- Buried underground services. Locations of test holes are indicative and final locations should be selected by the GI Contractor to be clear of obstructions and buried services.
- Potential stability issues with excavations. The risk shall be assessed by the GI Contractor's Geotechnical Engineer and appropriate mitigation measures implemented by the GI Contractor.
- The GI Contractor is to submit a Method Statement and Health and Safety Risk Assessment to Mott MacDonald and the CDM-C prior to commencing work. This should be allowed for in your quotation.

6.0 Programme

As part of your quotation we request that you also provide a programme for the works. This should include your mobilisation, site-based and office-based work and proposed dates for issue of deliverables.

Our client would like this work to be completed **as soon as possible** but within the key dates listed below: -

Survey	Time Allowed	Programme
Site work	2 days	2 days
Site logs	1 week	2 weeks 2 days
Monitoring	4 weeks	5 weeks 2 days
Laboratory testing	2 weeks	5 weeks 2 days
Draft factual report	1 week	6 weeks 2 days
Final factual report updated with the results of borehole monitoring	1 week after final monitoring visit	Est. 7 weeks

7.0 Working Hours and Access

Access to the site will be by appointment only and adequate notice shall be given.

Mott MacDonald will liaise with National Grid Property Holdings Ltd during the process of arranging a suitable date/time for the surveys to be undertaken.

8.0 Terms of Agreement

The client shall be Mott MacDonald who will coordinate the survey work and act as the main point of contact.

The contract for the survey work will be as per the enclosed form of agreement. Your quotation must be based on terms of the attached agreement.

9.0 Deliverables

The logs and reports should be provided in the following formats: -

- a) Site logs in Adobe Portable Document Format (PDF) format issued by email (compiled into a single document).
- b) Draft Factual report in Adobe Portable Document Format (PDF) format issued by email (compiled into a single document).
- c) Final Factual report as a hard copy colour report (one copy) issued by post; and an Adobe Portable Document Format (PDF) format issued by email (compiled into a single document) and AGS data.

10.0 Requirements of Quotation

In addition to the above, your quotation must:

- a) Be valid for a period of three months;
- b) Include for the provision of all necessary offices, safety, health and welfare facilities;
- c) Include (and provide details) as appropriate for the provision of any locked accommodation for the safe storage of equipment on site;
- d) Include for the carrying out of the work described herein together with any making good and the subsequent clearing away of any waste;
- e) Include for the provision of all safety barriers and warning signs which are to be erected when removing covers to inspect underground services; and
- f) Include for all necessary enquiries and arrangements for access to the site.
- g) Include a provisional sum of £500 to be expended on additional works at the instruction of the client's Technical Advisor, Mott MacDonald.

The quotation shall be provided for the anticipated scope of works and be based on the assumptions described above. Items which are not lump sums shall be built up in terms of quantities and rates. The quotation shall include a breakdown of the estimated scope of laboratory testing which clearly identifies the proposed laboratory tests and the rates for each test.

Typical items for which the quantities might vary are listed below. The final cost will be recalculated based on the actual ground conditions found on site and the actual work undertaken:

- a) Depth of bores and window samples;
- b) Laboratory testing;
- c) Additional contamination samples and testing;
- d) Disposal of non-hazardous or contaminated hazardous waste; and
- e) Pre-treatment of waste prior to landfill.

Any significant additional work should be pre-approved by Mott MacDonald.

11.0 Quotation return details

Quotations should be returned by email in pdf format to Mott MacDonald by 1700 hours on Friday 16 November 2018. Please contact us if this is not sufficient time.

Each quotation must be returned with completed copies of the enclosed Schedules

The Mott MacDonald will seek to appoint the successful contractor later that week and the contractor shall be able to commence work as soon as possible thereafter. The results of each survey should be provided as it becomes available.

Quotations have been sought from each supplier. The preferred quotation will be the one that combines good value for money with quick mobilisation and execution of the survey works.

Any queries regarding these matters should be made to the undersigned at the above address or by telephone (0)20 8774 2600 or email to emily.royan@mottmac.com.

Yours faithfully,

for Mott MacDonald Ltd

Enclosures:-

Annex A: Plans showing the extent of previous and proposed survey sampling locations

Annex B: Site Photographs

Annex C: Phase 1 Geotechnical and geo-environmental desk study (to be issued to the winning tenderer)

Annex D: Form of Contract

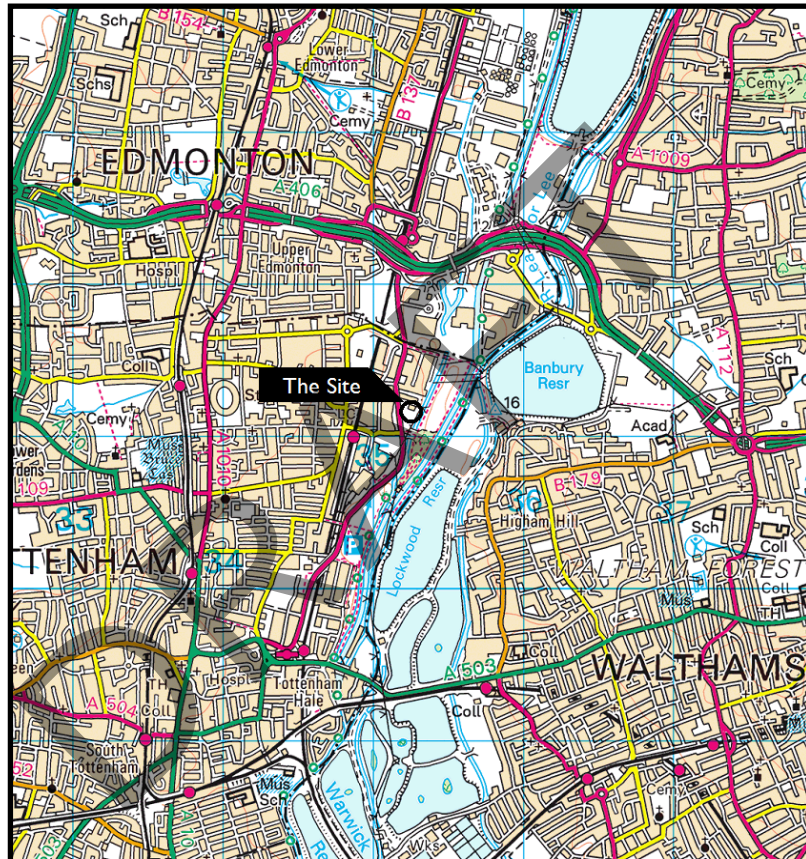
Schedule 1: Survey quotation breakdown and timetable for delivery

Schedule 2: Safety policy statement

Schedule 3: Quality, Safety and Environment (QES) questionnaire

APPENDIX 2
Site Location Plan

SITE LOCATION PLAN



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Ground Investigation
at
Tottenham Substation
for
Mott MacDonald Limited

GEOTECHNICS
geotechnical and geoenvironmental specialists

APPENDIX 3
Dynamic Sample Borehole Records

DATA SHEET - Symbols and Abbreviations used on Records



Sample Types

B	Bulk disturbed sample
BLK	Block sample
C	Core sample
D	Small disturbed sample (tub/jar)
E	Environmental test sample
ES	Environmental soil sample
EW	Environmental water sample
G	Gas sample
L	Liner sample
LB	Large bulk disturbed sample
P	Piston sample (PF - failed P sample)
TW	Thin walled push in sample
U	Open Tube - 102mm diameter with blows to take sample. (UF - failed U sample)
UT	Thin wall open drive tube sampler - 102mm diameter with blows to take sample. (UTF - failed UT sample)
V	Vial sample
W	Water sample
#	Sample Not Recovered

Insitu Testing / Properties

CBRP	CBR using TRL probe
CHP	Constant Head Permeability Test
COND	Electrical conductivity
TC	Thermal Conductivity
TR	Thermal Resistivity
HV	Strength from Hand Vane
ICBR	CBR Test
IDEN	Density Test
IRES	Resistivity Test
MEX	CBR using Mexecon Probe Test
PKR	Packer Permeability Test
PLT	Plate Load Test
PP	Strength from Pocket Penetrometer
Temp	Temperature
VHP	Variable Head Permeability Test
VN	Strength from Insitu Vane
w%	Water content
(All other strengths from undrained triaxial testing)	
S	Standard Penetration Test (SPT)
C	SPT with cone
N	SPT Result
-/-	Blows/penetration (mm) after seating drive
-*/- (mm)	Total blows/penetration
()	Extrapolated value

Groundwater

Water Strike	
Depth Water Rose To	

Instrumentation

Seal

Filter

Seal

Strata

Made Ground Granular

Made Ground Cohesive

Topsoil

Cobbles and Boulders

Gravel

Sand

Silt

Clay

Peat

Note: Composite soil types shown by combined symbols

Chalk

Limestone

Sandstone

Coal

Strata, Continued

Mudstone

Siltstone

Metamorphic Rock

Fine Grained

Medium Grained

Coarse Grained

Igneous Rock

Fine Grained

Medium Grained

Coarse Grained

Backfill Materials

Arisings

Bentonite Seal

Concrete

Fine Gravel Filter

General Fill

Gravel Filter

Grout

Sand Filter

Tarmacadam

Rotary Core

RQD Rock Quality Designation (% of intact core >100mm)

FRACTURE INDEX Fractures/metre

FRACTURE SPACING (m) Maximum Minimum

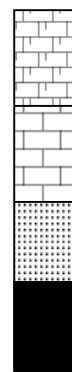
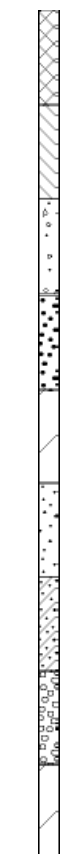
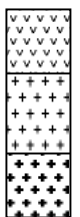
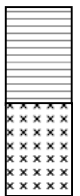
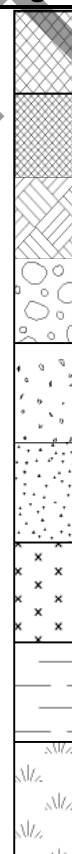
NI Non-intact core

NR No core recovery

AZCL Assumed zone of core loss

(where core recovery is unknown it is assumed to be at the base of the run)

Legend



BOREHOLE RECORD - Dynamic Sampler

Project **TOTTENHAM SUBSTATION GI** Engineer **MOTT MACDONALD** Borehole Project No **MMHA01**
PC187331
 Client **MOTT MACDONALD** National Grid Coordinates **535236.4 E**
191165.5 N Ground Level **10.82 m OD**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.10	ES				TOPSOIL: Dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subrounded fine to coarse quartzite and flint. MADE GROUND: Dark brown slightly gravelly slightly clayey sand. Gravel is subangular to subrounded fine to coarse clinker, quartzite, brick, coal and glass. MADE GROUND: Brown sandy slightly clayey gravel. Gravel is angular to subangular fine to coarse clinker, coal, bone and glass. Below 1.50m, gravel includes ceramic.		G.L.		10.82
0.30	ES						0.20		10.62
0.50	ES						0.70		10.12
1.00	ES				End of Borehole				
2.00	ES						2.00		8.82

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.09	Inspection Pit	NS/MH	G.L.	NIL	DRY	13/12/18	08:00						None encountered during sampling.
2.00		Dynamic Sampler	NS/MH	2.00			13/12/18	18:00						

Remarks **INS** sample = 2 x vials, 1 x plastic jar and 1 amber jar
AGS Inspection pit hand excavated to 1.20m depth and no services were found.
 Backfill details from base of hole: bentonite up to 1.20m, arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **ED**
 Checked by **SC**
 Figure **1 of 1**
 07/01/2019

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BOREHOLE RECORD - Dynamic Sampler

Project **TOTTENHAM SUBSTATION GI** Engineer **MOTT MACDONALD** Borehole Project No **MMHA02 PC187331**

Client **MOTT MACDONALD** National Grid Coordinates **535248.9 E 191161.6 N** Ground Level **10.61 m OD**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.10	ES				TOPSOIL: Dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subrounded fine to coarse flint and quartzite. MADE GROUND: Dark brown sandy slightly clayey gravel. Gravel is angular to subangular fine to coarse clinker, glass and brick.		G.L.		10.61
0.30	ES						0.15		10.46
0.50	ES								
1.00	ES				MADE GROUND: Stiff yellowish brown slightly sandy gravelly clay. Gravel is angular to subrounded fine to coarse clinker, brick and mudstone.		1.50		9.11
2.00	ES						2.00		8.61
					End of Borehole				

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.09	Inspection Pit	NS/MH	G.L.	NIL	DRY	13/12/18	08:00						None encountered during sampling.
2.00		Dynamic Sampler	NS/MH	2.00			13/12/18	18:00						

Remarks **INS** sample = 2 x vials, 1 x plastic jar and 1 amber jar
AGS Inspection pit hand excavated to 1.20m depth and no services were found.
 Backfill details from base of hole: bentonite up to 1.20m, arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **ED**
 Checked by **SC**
 Figure **1 of 1**
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BOREHOLE RECORD - Dynamic Sampler

Project **TOTTENHAM SUBSTATION GI** Engineer **MOTT MACDONALD** Borehole Project No **MMHA03**
 Client **MOTT MACDONALD** National Grid Coordinates **535264.4 E 191158.8 N** Ground Level **10.59 m OD**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description	Depth	Legend	Level m OD	
0.10	ES				TOPSOIL: Dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subrounded fine to coarse brick, flint and quartzite. MADE GROUND: Brown sandy slightly clayey gravel. Gravel is angular to subangular fine to coarse clinker, coal, concrete, glass and brick.	G.L.		10.59	
0.30	ES					0.15		10.44	
0.50	ES								
1.00	ES				MADE GROUND: Stiff yellowish brown slightly sandy gravelly clay with a low cobble content of subangular brick. Gravel is angular to subrounded fine to coarse brick and quartzite. End of Borehole	1.50		9.09	
2.00	ES					2.00		8.59	

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.09	Inspection Pit	NS/MH	G.L.	NIL	DRY	13/12/18	08:00						None encountered during sampling.
2.00		Trial Pit	NS/MH	2.00			13/12/18	18:00						

Remarks **INS** sample = 2 x vials, 1 x plastic jar and 1 amber jar
AGS Inspection pit hand excavated to 1.20m depth and no services were found.
 Backfill details from base of hole: bentonite up to 1.20m, arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **ED**
 Checked by **SC**
 Figure **1 of 1**
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BOREHOLE RECORD - Dynamic Sampler

Project **TOTTENHAM SUBSTATION GI** Engineer **MOTT MACDONALD** Borehole Project No **MMHA04**
PC187331
 Client **MOTT MACDONALD** National Grid Coordinates **535257.6 E**
191131.4 N Ground Level **10.61 m OD**

Sampling			Properties		Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %	Description		Depth	Legend	Level m OD
0.10	ES				TOPSOIL: Grass over dark brown slightly gravelly clayey sand with occasional rootlets. Gravel is angular to subrounded fine to coarse flint and quartzite. Below 0.20m, with occasional pockets (up to 300mm in size) of soft brown clay.		G.L.		10.61
0.30	ES						0.30		10.31
0.50	ES								
1.00	ES				MADE GROUND: Dark brown gravelly slightly clayey sand. Gravel is angular to subangular fine to coarse clinker, glass, ash and ceramic. Below 1.10m, becoming black with a weak organic odour. Gravel includes slate.				
1.50	ES								
2.00	ES						2.00		8.61
End of Borehole									

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20	0.09	Inspection Pit	NS/MH	G.L.	NIL	DRY	13/12/18	08:00						None encountered during sampling.
2.00		Dynamic Sampler	NS/MH	2.00			13/12/18	18:00						

Remarks **INS** sample = 2 x vials, 1 x plastic jar and 1 amber jar
AGS Inspection pit hand excavated to 1.20m depth and no services were found.
 Backfill details from base of hole: bentonite up to 1.20m, arisings up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

Logged by **ED**
 Checked by **SC**
 Figure **1 of 1**
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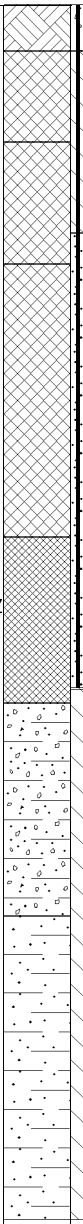
BOREHOLE RECORD - Dynamic Sampler

Project **TOTTENHAM SUBSTATION GI** Engineer **MOTT MACDONALD** Borehole Project No **MMWS01**
PC187331
 Client **MOTT MACDONALD** National Grid Coordinates **535228.3 E**
191136.2 N Ground Level **10.42 m OD**

Sampling			Properties		Strata		Scale 1:50							
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %		Description	Depth	Legend	Level m OD					
						TOPSOIL: Grass over dark brown slightly gravelly clayey sand with frequent rootlets. Gravel is angular to subangular fine to coarse brick and quartzite.	G.L.		10.42					
0.30 0.50	ES ES					MADE GROUND: Dark brown sandy slightly clayey gravel. Gravel is angular to subangular fine to coarse clinker, glass and plastic.	0.30		10.12					
1.00	ES					MADE GROUND: Dark brown gravelly slightly clayey sand. Gravel is subangular to subrounded fine to coarse clinker, quartzite and glass.	0.80		9.62					
1.50	ES					MADE GROUND: Brown sandy clayey gravel. Gravel is angular to subrounded fine to coarse quartzite, plastic and ceramic. Below 1.90m, becoming black with a slight organic odour.	1.10		9.32					
1.90	ES													
4.00	ES					Soft dark greyish brown sandy gravelly CLAY with a weak organic odour. Gravel is angular to subangular fine to coarse quartzite and flint. Below 3.80m, with occasional shell fragments (up to 5mm in size) and occasional pockets (up to 20mm in size) of sand.	3.20		7.22					
4.80	ES					Below 5.00m, with a strong hydrocarbon odour.								
6.00	ES													
6.50	ES					Dark brown sandy GRAVEL with a strong hydrocarbon odour. Gravel is angular to subrounded fine to coarse flint and quartzite.	6.20		4.22					
7.50	ES					Firm to stiff dark grey slightly sandy CLAY.	6.80		3.62					
8.00	D					End of Borehole	8.00		2.42					
Boring			Progress				Groundwater							
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20 7.00 8.00	0.09 0.08	Inspection Pit Dynamic Sampler	NS/MH NS/MH	G.L. 8.00	7.00	3.00	12/12/18 12/12/18	08:00 18:00	3.00					Wet below 3.00m.
Remarks														
AGS Inspection pit hand excavated to 1.20m depth and no services were found. ES sample = 2 x vials, 1 x plastic jar and 1 amber jar A 19mm standpipe was installed to 6.80m with a slotted section from 6.20m to 6.80m with upright lockable protective cover. Backfill details from base of hole: bentonite up to 6.80m, gravel filter up to 6.20m, bentonite up to 0.30m, concrete up to ground level.														
Symbols and abbreviations are explained on the accompanying key sheet.														
All dimensions are in metres.														
Logged in accordance with BS5930:2015														
Logged by Checked by Figure														
ED SC 1 of 1 07/01/2019														
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BOREHOLE RECORD - Dynamic Sampler

Project **TOTTENHAM SUBSTATION GI** Engineer **MOTT MACDONALD** Borehole Project No **MMWS02**
 Client **MOTT MACDONALD** National Grid Coordinates **535250.8 E** **191143.2 N** Ground Level **10.59 m OD**

Sampling			Properties			Strata		Scale 1:50		
Depth	Sample Type	Depth Cased & (to Water)	Strength kPa	w %		Description	Depth	Legend	Level m OD	
0.10	ES					TOPSOIL: Grass over firm brown slightly gravelly sandy clay with frequent rootlets. Gravel is angular to subangular fine to coarse clinker and quartzite.	G.L.		10.59	
0.30	ES						0.30		10.29	
0.50	ES									
0.70	D					MADE GROUND: Dark brown sandy slightly clayey gravel. Gravel is angular to subrounded fine to coarse clinker, glass, plastic and slate.	0.90		9.69	
1.00	ES									
						MADE GROUND: Dark brown gravelly slightly clayey sand. Gravel is subangular to subrounded fine to coarse clinker, coal and glass.				
							1.70		8.89	
2.00	ES					MADE GROUND: Dark brown sandy slightly clayey gravel. Gravel is subangular to subrounded fine to coarse clinker, glass, ceramic, slate and sandstone. Below 1.90m, becoming greyish brown. Gravel includes chalk. At 2.70m, with a low cobble content of subangular brick.				
3.00	ES						3.50		7.09	
3.80	ES					MADE GROUND: Soft orangish brown mottled grey slightly gravelly sandy clay. Gravel is angular to subangular fine to coarse quartzite, brick, clinker and glass.				
5.00	ES					Soft greyish brown slightly sandy gravelly CLAY with occasional shell fragments (up to 5mm in size). Gravel is subangular to subrounded fine to coarse quartzite and flint. Between 4.80-4.90m, layer of sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite and flint.	4.60		5.99	
5.90	ES					Below 5.90m, with a weak organic odour.	6.00		4.59	
7.00	D					Firm dark grey slightly sandy CLAY.				
7.00	ES									
7.50- 8.00	D					Below 7.00m, stiff.				
							8.00		2.59	
						End of Borehole				

Boring				Progress					Groundwater					
Depth	Hole Dia	Technique	Crew	Depth of Hole	Depth Cased	Depth to Water	Date	Time	Depth Struck	Depth Cased	Rose to	in Mins	Depth Sealed	Remarks on Groundwater
1.20		Inspection Pit	NS/MH	G.L.			12/12/18	08:00	4.00					Wet below 4.00m.
4.00	0.09	Dynamic Sampler	NS/MH	8.00	4.00	4.00	12/12/18	18:00						
5.00	0.08	Dynamic Sampler	NS/MH											
6.00	0.07	Dynamic Sampler	NS/MH											
8.00	0.06	Dynamic Sampler	NS/MH											

Remarks **INS** Inspection pit hand excavated to 1.20m depth and no services were found.
AGS ES sample = 2 x vials, 1 x plastic jar and 1 amber jar
 A 19mm standpipe was installed to 4.50m with a slotted section from 1.50m to 4.50m with upright lockable protective cover. Backfill details from base of hole: bentonite up to 4.50m, gravel filter up to 1.50m, bentonite up to 0.30m, concrete up to ground level.

Symbols and abbreviations are explained on the accompanying key sheet.

All dimensions are in metres.

Logged in accordance with BS5930:2015

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 Figure **1 of 1**
 07/01/2019

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APPENDIX 4
Exploratory Hole Location Plan

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APPENDIX 5
Monitoring Results

FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TOTTENHAM SUBSTATION GI

Project No PC187331

Client

Borehole

MMWS01

Sheet No.

1 (1 of 2)

Installation Details

Installation Type	Standpipe	Diameter	19mm
Depth to Base	6.80m	Cover Type	Upright lockable protective cover
Filter Zone	6.20 - 6.80m	Ground Level	10.42 m OD
Date Installed	12 December 2018		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Free Product Thickness (mm)	Water Temp. (deg)	Electrical Conductivity (uS/cm)	Redox (mV)	Dissolved Oxygen (mg/l)	Remarks
19-Dec-2018	10:30:00	2.70	6.82	NIL	10	2.46	24.9	2.20	Hydrocarbon Odour
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Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TOTTENHAM SUBSTATION GI

Project No

PC187331

Borehole

MMWS01

Client

Sheet No.

1 (2 of 2)

Installation Details

Installation Type	Standpipe	Diameter	19mm
Depth to Base	6.80m	Cover Type	Upright lockable protective cover
Filter Zone	6.20 - 6.80m	Ground Level	10.42 m OD
Date Installed	12 December 2018		

Date	Time	Water Sample Taken (After Purging) (Yes/No)	Air Temp. (DegC)	PID Peak (ppm)	Colour (-)	Purged water volume (l)	Remarks
19-Dec-2018	10:30:00	Yes	6.00	0.0	Dark Brown	5	Hydrocarbon Odour
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Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TOTTENHAM SUBSTATION GI

Project No

PC187331

Borehole

MMWS02

Client

Sheet No.

1 (1 of 2)

Installation Details

Installation Type	Standpipe	Diameter	19mm
Depth to Base	4.50m	Cover Type	Upright lockable protective cover
Filter Zone	1.50 - 4.50m	Ground Level	10.59 m OD
Date Installed	12 December 2018		

Date	Time	Depth to Water (m bgl)	Current Hole Depth (m bgl)	Free Product Thickness (mm)	Water Temp. (deg)	Electrical Conductivity (uS/cm)	Redox (mV)	Dissolved Oxygen (mg/l)	Remarks
19-Dec-2018	11:45:00	3.14	4.67	NIL	10	2.94	28.7	3.91	

Remarks

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FIELDWORK - Insitu Gas Monitoring - Instrument Record

Project TOTTENHAM SUBSTATION GI

Project No

PC187331

Borehole

MMWS02

Client

Sheet No.

1 (2 of 2)

Installation Details

Installation Type	Standpipe	Diameter	19mm
Depth to Base	4.50m	Cover Type	Upright lockable protective cover
Filter Zone	1.50 - 4.50m	Ground Level	10.59 m OD
Date Installed	12 December 2018		

Date	Time	Water Sample Taken (After Purging) (Yes/No)	Air Temp. (DegC)	PID Peak (ppm)	Colour (-)	Purged water volume (l)	Remarks
19-Dec-2018	11:45:00	Yes	6.00	0.0	Dark Brown	3	
DRAFT							

Remarks

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APPENDIX 6

Laboratory Test Results - Contamination



Certificate of Analysis

Certificate Number 18-29456

04-Jan-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 18-29456

Client Reference PC187331

Order No AUTH-OC19339

Contract Title Tottenham Substation GI

Description 12 Soil samples, 7 Leachate samples.

Date Received 17-Dec-18

Date Started 17-Dec-18

Date Completed 04-Jan-19

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read "A. Fenwick", is written over a large, light grey "DRAFT" watermark.

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Sample ID	Depth	Lab No	Completed	Matrix Description
MMHA03	1	1436820	04/01/2019	Grey, sandy GRAVEL (Made ground - glass,plastic,slag) (sample matrix outside MCERTS scope of accreditation)
MMWS02	0.5	1436824	04/01/2019	Grey, sandy GRAVEL (Made ground - glass,plastic,slag) (sample matrix outside MCERTS scope of accreditation)
MMWS01	0.3	1436826	04/01/2019	Brown gravelly, sandy CLAY including odd rootlets
MMWS01	6.5	1436829	04/01/2019	Brown gravelly SAND

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Summary of Chemical Analysis

Soil Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436818	1436819	1436820	1436821	1436822	1436823
Sample ID	MMHA01	MMHA02	MMHA03	MMHA03	MMHA04	MMHA04
Depth	1.00	0.30	1.00	2.00	0.30	1.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic mg/kg	DETSC 2301#	0.2	mg/kg	44	67	20	21	27	70
Barium mg/kg	DETSC 2301#	1.5	mg/kg	380	490	370	450	300	97
Beryllium mg/kg	DETSC 2301#	0.2	mg/kg	4.2	3.9	1.5	1.1	2.3	5.2
Boron, Water Soluble mg/kg	DETSC 2123#	0.2	mg/kg	6.0	4.2	2.9	3.4	2.6	20
Cadmium mg/kg	DETSC 2301#	0.1	mg/kg	0.4	0.7	5.3	0.2	1.4	5.9
Chromium mg/kg	DETSC 2301#	0.15	mg/kg		25		43		220
Chromium III mg/kg	DETSC 2301*	0.15	mg/kg	20		20		46	
Chromium, Hexavalent mg/kg	DETSC 2204*	1	mg/kg	< 1.0		< 1.0		< 1.0	
Copper mg/kg	DETSC 2301#	0.2	mg/kg	610	240	2700	160	220	4200
Iron mg/kg	DETSC 2301	25	mg/kg	24000	43000	17000	43000	34000	56000
Lead mg/kg	DETSC 2301#	0.3	mg/kg	280	400	660	700	340	2900
Mercury mg/kg	DETSC 2325#	0.05	mg/kg	0.63	0.25	0.76	0.23	1.6	7.3
Nickel mg/kg	DETSC 2301#	1	mg/kg	48	75	28	44	47	180
Selenium mg/kg	DETSC 2301#	0.5	mg/kg	1.1	2.0	0.7	< 0.5	1.5	1.3
Vanadium mg/kg	DETSC 2301#	0.8	mg/kg	57	79	30	86	84	87
Zinc mg/kg	DETSC 2301#	1	mg/kg	400	730	1000	320	440	2900
Inorganics									
pH	DETSC 2008#			6.6	6.9	7.9	7.9	7.6	8.1
Total Organic Carbon %	DETSC 2002	0.1	%	8.2	7.3	4.5	0.8	3.7	7.6
Sulphate Aqueous Extract as SO4 mg/l	DETSC 2076#	10	mg/l	1300	190	180	150	33	330
Sulphur as S, Total %	DETSC 2320	0.01	%	0.22	0.29	0.07	0.04	0.07	0.79
Petroleum Hydrocarbons									
Aliphatic C5-C6 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aliphatic C6-C8 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aliphatic C8-C10 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aliphatic C10-C12 mg/kg	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5		< 1.5	
Aliphatic C12-C16 mg/kg	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2		< 1.2	
Aliphatic C16-C21 mg/kg	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5		< 1.5	
Aliphatic C21-C35 mg/kg	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4		< 3.4	
Aliphatic C5-C35 mg/kg	DETSC 3072*	10	mg/kg	< 10		< 10		< 10	
Aromatic C5-C7 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C7-C8 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C8-C10 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C10-C12 mg/kg	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9		< 0.9	
Aromatic C12-C16 mg/kg	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5		< 0.5	
Aromatic C16-C21 mg/kg	DETSC 3072#	0.6	mg/kg	< 0.6		0.8		6.0	
Aromatic C21-C35 mg/kg	DETSC 3072#	1.4	mg/kg	< 1.4		2.1		5.1	
Aromatic C5-C35 mg/kg	DETSC 3072*	10	mg/kg	< 10		< 10		11	
TPH Ali/Aro Total mg/kg	DETSC 3072*	10	mg/kg	< 10		< 10		11	
EPH (C10-C40) mg/kg	DETSC 3311#	10	mg/kg		85		320		1300
Benzene mg/kg	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	

Summary of Chemical Analysis

Soil Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436818	1436819	1436820	1436821	1436822	1436823
Sample ID	MMHA01	MMHA02	MMHA03	MMHA03	MMHA04	MMHA04
Depth	1.00	0.30	1.00	2.00	0.30	1.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Ethylbenzene mg/kg	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Toluene mg/kg	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Xylene mg/kg	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PAHs									
Naphthalene mg/kg	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.07
Acenaphthylene mg/kg	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	0.06	0.04
Acenaphthene mg/kg	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.07	< 0.03
Fluorene mg/kg	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.06	< 0.03
Phenanthrene mg/kg	DETSC 3303#	0.03	mg/kg	0.13	0.18	0.10	0.07	1.2	0.28
Anthracene mg/kg	DETSC 3303	0.03	mg/kg	0.05	0.05	0.04	< 0.03	0.20	0.10
Fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	0.38	0.51	0.31	0.10	2.7	0.69
Pyrene mg/kg	DETSC 3303#	0.03	mg/kg	0.43	0.53	0.30	0.10	2.4	0.69
Benzo(a)anthracene mg/kg	DETSC 3303#	0.03	mg/kg	0.37	0.30	0.24	0.06	0.84	0.40
Chrysene mg/kg	DETSC 3303	0.03	mg/kg	0.44	0.44	0.22	0.06	0.88	0.39
Benzo(b)fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	0.66	0.70	0.48	0.09	1.3	0.80
Benzo(k)fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	0.34	0.21	0.13	0.03	0.30	0.25
Benzo(a)pyrene mg/kg	DETSC 3303#	0.03	mg/kg	0.56	0.43	0.34	0.06	0.83	0.45
Indeno(1,2,3-c,d)pyrene mg/kg	DETSC 3303#	0.03	mg/kg	0.31	0.18	0.13	< 0.03	0.27	0.22
Dibenzo(a,h)anthracene mg/kg	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03	< 0.03	0.07	< 0.03
Benzo(g,h,i)perylene mg/kg	DETSC 3303#	0.03	mg/kg	0.32	0.24	0.14	< 0.03	0.32	0.26
Phenanthrene mg/kg	DETSC 3301	0.1	mg/kg	0.1		5.3		3.4	
Pyrene mg/kg	DETSC 3301	0.1	mg/kg	0.4		6.6		8.9	
PAH - USEPA 16, Total mg/kg	DETSC 3303	0.1	mg/kg	4.0	3.8	2.4	0.53	11	4.6
PCBs									
PCB 28 + PCB 31 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 52 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 101 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 118 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 153 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 138 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 180 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 7 Total mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenols									
Phenol - Monohydric mg/kg	DETSC 2130#	0.3	mg/kg	< 0.3	1.6	0.5	0.5	0.4	2.6

Summary of Chemical Analysis

Soil Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436824	1436825	1436826	1436827	1436828	1436829
Sample ID	MMWSO	MMWSO	MMWSO	MMWSO	MMWSO	MMWSO
Depth	0.50	5.90	0.30	1.00	3.00	6.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic mg/kg	DETSC 2301#	0.2	mg/kg	39	15	34	58	18	14
Barium mg/kg	DETSC 2301#	1.5	mg/kg	820	280	390	1400	260	84
Beryllium mg/kg	DETSC 2301#	0.2	mg/kg	2.8	1.5	2.8	2.9	0.8	0.3
Boron, Water Soluble mg/kg	DETSC 2123#	0.2	mg/kg	3.8	4.8	4.5	3.6	3.0	1.8
Cadmium mg/kg	DETSC 2301#	0.1	mg/kg	2.7	0.4	1.6	2.9	0.3	0.1
Chromium mg/kg	DETSC 2301#	0.15	mg/kg		46				
Chromium III mg/kg	DETSC 2301*	0.15	mg/kg	38		51	45	20	13
Chromium, Hexavalent mg/kg	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Copper mg/kg	DETSC 2301#	0.2	mg/kg	1200	76	170	710	86	33
Iron mg/kg	DETSC 2301	25	mg/kg	34000	40000	43000	42000	36000	15000
Lead mg/kg	DETSC 2301#	0.3	mg/kg	1100	79	450	1900	490	95
Mercury mg/kg	DETSC 2325#	0.05	mg/kg	1.2	0.17	1.2	3.6	1.7	0.11
Nickel mg/kg	DETSC 2301#	1	mg/kg	49	42	50	63	21	18
Selenium mg/kg	DETSC 2301#	0.5	mg/kg	0.7	< 0.5	1.2	0.7	< 0.5	< 0.5
Vanadium mg/kg	DETSC 2301#	0.8	mg/kg	78	73	97	71	36	20
Zinc mg/kg	DETSC 2301#	1	mg/kg	1300	200	570	1900	320	140
Inorganics									
pH	DETSC 2008#			8.9	7.6	6.3	7.4	8.3	8.2
Total Organic Carbon %	DETSC 2002	0.1	%	4.9	0.7	5.4	5.9	1.4	0.6
Sulphate Aqueous Extract as SO4 mg/l	DETSC 2076#	10	mg/l	560	60	54	610	490	55
Sulphur as S, Total %	DETSC 2320	0.01	%	0.29	0.03	0.08	0.17	0.58	0.09
Petroleum Hydrocarbons									
Aliphatic C5-C6 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Aliphatic C6-C8 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	0.32
Aliphatic C8-C10 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Aliphatic C10-C12 mg/kg	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16 mg/kg	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21 mg/kg	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35 mg/kg	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35 mg/kg	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	< 76.3
Aromatic C5-C7 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Aromatic C7-C8 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Aromatic C8-C10 mg/kg	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	18
Aromatic C10-C12 mg/kg	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9	< 0.9	< 0.9	90
Aromatic C12-C16 mg/kg	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	1.5	2.0	140
Aromatic C16-C21 mg/kg	DETSC 3072#	0.6	mg/kg	< 0.6		0.9	17	11	120
Aromatic C21-C35 mg/kg	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	54	5.6	50
Aromatic C5-C35 mg/kg	DETSC 3072*	10	mg/kg	< 10		< 10	72	19	420
TPH Ali/Aro Total mg/kg	DETSC 3072*	10	mg/kg	< 10		< 10	72	19	500
EPH (C10-C40) mg/kg	DETSC 3311#	10	mg/kg		< 10				
Benzene mg/kg	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10

Summary of Chemical Analysis

Soil Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436824	1436825	1436826	1436827	1436828	1436829
Sample ID	MMWS0	MMWS0	MMWS0	MMWS0	MMWS0	MMWS0
Depth	0.50	5.90	0.30	1.00	3.00	6.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Ethylbenzene mg/kg	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	3.2
Toluene mg/kg	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Xylene mg/kg	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	3.6
PAHs									
Naphthalene mg/kg	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.30	< 0.03	590
Acenaphthylene mg/kg	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.12	< 0.03	66
Acenaphthene mg/kg	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.17	0.12	100
Fluorene mg/kg	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.17	0.08	86
Phenanthrene mg/kg	DETSC 3303#	0.03	mg/kg	0.14	< 0.03	0.42	2.7	0.28	200
Anthracene mg/kg	DETSC 3303	0.03	mg/kg	0.05	< 0.03	0.07	0.65	0.07	64
Fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	0.32	< 0.03	0.96	5.9	0.74	53
Pyrene mg/kg	DETSC 3303#	0.03	mg/kg	0.30	< 0.03	0.90	5.0	0.73	88
Benzo(a)anthracene mg/kg	DETSC 3303#	0.03	mg/kg	0.18	< 0.03	0.29	2.9	0.22	32
Chrysene mg/kg	DETSC 3303	0.03	mg/kg	0.19	< 0.03	0.36	2.6	0.26	24
Benzo(b)fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	0.32	< 0.03	0.42	4.4	0.29	20
Benzo(k)fluoranthene mg/kg	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.15	1.5	0.10	6.9
Benzo(a)pyrene mg/kg	DETSC 3303#	0.03	mg/kg	0.16	< 0.03	0.22	3.4	0.10	26
Indeno(1,2,3-c,d)pyrene mg/kg	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.13	1.3	< 0.03	6.0
Dibenzo(a,h)anthracene mg/kg	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.38	< 0.03	1.9
Benzo(g,h,i)perylene mg/kg	DETSC 3303#	0.03	mg/kg	0.13	< 0.03	0.12	1.6	< 0.03	5.4
Phenanthrene mg/kg	DETSC 3301	0.1	mg/kg	0.3		2.1	6.5	0.3	41
Pyrene mg/kg	DETSC 3301	0.1	mg/kg	0.8		5.4	18	0.6	17
PAH - USEPA 16, Total mg/kg	DETSC 3303	0.1	mg/kg	2.0	< 0.10	4.0	33	3.0	1400
PCBs									
PCB 28 + PCB 31 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 52 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 101 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 118 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 153 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 138 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 180 mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 7 Total mg/kg	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenols									
Phenol - Monohydric mg/kg	DETSC 2130#	0.3	mg/kg	0.3	< 0.3	1.0	0.6	0.4	< 0.3

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436818	1436820	1436822	1436824	1436826	1436827
Sample ID	MMHA01	MMHA03	MMHA04	MMWS0	MMWS0	MMWS0
Depth	1.00	1.00	0.30	0.50	0.30	1.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
VOCs									
Vinyl Chloride mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene mg/kg	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436818	1436820	1436822	1436824	1436826	1436827
Sample ID	MMHA01	MMHA03	MMHA04	MMWS0	MMWS0	MMWS0
Depth	1.00	1.00	0.30	0.50	0.30	1.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
sec-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	0.06	0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436828	1436829
Sample ID	MMWS0	MMWS0
Depth	3.00	6.50
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	13/12/18	13/12/18
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1 Dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Trans-1,2-dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1-dichloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Cis-1,2-dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
2,2-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Bromochloromethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Chloroform mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1,1-trichloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Carbon tetrachloride mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Benzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dichloroethane mg/kg	DETSC 3431	0.01	mg/kg	0.01	< 0.10
Trichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Dibromomethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Bromodichloromethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
cis-1,3-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Toluene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
trans-1,3-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1,2-trichloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Tetrachloroethylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,3-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Dibromochloromethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dibromoethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Chlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1,1,2-tetrachloroethane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Ethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	0.01	1.8
m+p-Xylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	1.3
o-Xylene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	0.67
Styrene mg/kg	DETSC 3431*	0.01	mg/kg	0.01	< 0.10
Bromoform mg/kg	DETSC 3431	0.01	mg/kg	0.03	< 0.10
Isopropylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	0.21
Bromobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2,3-trichloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
n-propylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
2-chlorotoluene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,3,5-trimethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	0.58
4-chlorotoluene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Tert-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2,4-trimethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	1.5

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436828	1436829
Sample ID	MMWS0	MMWS0
Depth	3.00	6.50
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	13/12/18	13/12/18
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
p-isopropyltoluene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	0.13
1,3-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,4-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
n-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dibromo-3-chloropropane mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2,4-trichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Hexachlorobutadiene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2,3-trichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436830	1436831	1436832	1436833	1436834	1436835	1436836
Sample ID	MMHA0	MMWS0	MMWS0	MMHA0	MMWS0	MMWS0	MMWS0
Depth	2.00	0.50	6.50	1.00	0.50	0.30	6.50
Other ID							
Sample Type	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units							
Preparation										
BS EN 12457 10:1	DETSC 1009*						Y		Y	Y
NRA Leachate Preparation	DETSC 1009*			Y	Y	Y				
Metals										
Arsenic, Dissolved ug/l	DETSC 2306	0.16	ug/l	0.76	0.62	2.0				
Barium, Dissolved ug/l	DETSC 2306	0.26	ug/l	3.3	10	1.9				
Beryllium, Dissolved ug/l	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1				
Boron, Dissolved ug/l	DETSC 2306*	12	ug/l	16	28	< 12				
Cadmium, Dissolved ug/l	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03				
Chromium, Dissolved ug/l	DETSC 2306	0.25	ug/l	< 0.25	0.32	< 0.25				
Copper, Dissolved ug/l	DETSC 2306	0.4	ug/l	0.9	3.1	< 0.4				
Iron, Dissolved ug/l	DETSC 2306	5.5	ug/l	57	44	6.0				
Lead, Dissolved ug/l	DETSC 2306	0.09	ug/l	0.77	1.4	< 0.09				
Mercury, Dissolved ug/l	DETSC 2306	0.01	ug/l	0.02	0.02	0.01				
Nickel, Dissolved ug/l	DETSC 2306	0.5	ug/l	< 0.5	0.5	< 0.5				
Selenium, Dissolved ug/l	DETSC 2306	0.25	ug/l	0.55	1.2	0.57				
Vanadium, Dissolved ug/l	DETSC 2306	0.6	ug/l	< 0.6	< 0.6	< 0.6				
Zinc, Dissolved ug/l	DETSC 2306	1.3	ug/l	1.9	8.6	< 1.3				
Inorganics										
pH	DETSC 2008			6.7	6.5	6.7				
Sulphate as SO4 mg/l	DETSC 2055	0.1	mg/l	13	13	1.8				
Sulphur as S, Total mg/l	DETSC 2320*	10	mg/l	< 10	< 10	< 10				
Petroleum Hydrocarbons										
EPH (C10-C40) ug/l	DETSC 3311	10	ug/l	< 10	32	3700				
PCBs										
PCB 28 + PCB 31 ug/l	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3				
PCB 52 ug/l	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2				
PCB 101 ug/l	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3				
PCB 118 + PCB 123 ug/l	DETSC 3402	0.6	ug/l	< 0.6	< 0.6	< 0.6				
PCB 138 ug/l	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2				
PCB 153 ug/l	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2				
PCB 180 ug/l	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2				
PCB 7 Total ug/l	DETSC 3402	1	ug/l	< 1.0	< 1.0	< 1.0				
Phenols										
Phenol - Monohydric ug/l	DETSC 2130	100	ug/l	< 100	< 100	< 100				

Summary of Asbestos Analysis

Soil Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1436818	MMHA01 1.00	SOIL	NAD	none	Lee Kerridge
1436819	MMHA02 0.30	SOIL	NAD	none	Lee Kerridge
1436820	MMHA03 1.00	SOIL	NAD	none	Lee Kerridge
1436821	MMHA03 2.00	SOIL	NAD	none	Lee Kerridge
1436822	MMHA04 0.30	SOIL	NAD	none	Lee Kerridge
1436823	MMHA04 1.50	SOIL	Chrysotile	Chrysotile present in bundles	Lee Kerridge
1436824	MMWS02 0.50	SOIL	NAD	none	Lee Kerridge
1436825	MMWS02 5.90	SOIL	NAD	none	Lee Kerridge
1436826	MMWS01 0.30	SOIL	NAD	none	Lee Kerridge
1436827	MMWS01 1.00	SOIL	NAD	none	Lee Kerridge
1436828	MMWS01 3.00	SOIL	NAD	none	Lee Kerridge
1436829	MMWS01 6.50	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 18-29456
Client Ref PC187331
Contract Tottenham Substation GI

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1436818	MMHA01 1.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436819	MMHA02 0.30 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436820	MMHA03 1.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436821	MMHA03 2.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436822	MMHA04 0.30 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436823	MMHA04 1.50 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436824	MMWS02 0.50 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436825	MMWS02 5.90 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436826	MMWS01 0.30 SOIL	13/12/18	GJ 250ml, GJ 60ml x2		
1436827	MMWS01 1.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436828	MMWS01 3.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436829	MMWS01 6.50 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436830	MMHA03 2.00 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436831	MMWS02 0.50 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436832	MMWS01 6.50 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436833	MMHA03 1.00 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436834	MMWS02 0.50 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436835	MMWS01 0.30 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2		
1436836	MMWS01 6.50 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.



Certificate of Analysis

Certificate Number 18-29696

21-Dec-18

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 18-29696

Client Reference PC187331

Order No AUTH-OC19339

Contract Title Tottenham Substation GI

Description 3 Soil samples.

Date Received 19-Dec-18

Date Started 19-Dec-18

Date Completed 21-Dec-18

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in blue ink, appearing to read "A Fenwick", is written over a large, light grey "DRAFT" watermark that runs diagonally across the center of the page.

Adam Fenwick
Contracts Manager



Summary of Asbestos Analysis

Soil Samples

Our Ref 18-29696

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1438099	MMHA01 0.50	SOIL	NAD	none	Michael Kay
1438100	MMWS02 2.00	SOIL	NAD	none	Michael Kay
1438101	MMWS02 3.80	SOIL	NAD	none	Michael Kay

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

DRAFT

Information in Support of the Analytical Results

Our Ref 18-29696
 Client Ref PC187331
 Contract Tottenham Substation GI

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1438099	MMHA01 0.50 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1438100	MMWS02 2.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1438101	MMWS02 3.80 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :- Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

APPENDIX 7

Investigation Techniques and General Notes

INTRODUCTION

The following brief review of Ground Investigation techniques, generally used as part of most Site Investigations in the UK, summarises their methodology, advantages and limitations. Detailed descriptions of the techniques are available and can be provided on request. This review should be read in conjunction with the accompanying General Notes.

TRIAL PITS

The trial pit is amongst the simplest yet most effective means of identifying shallow ground conditions on a site. Its advantages include simplicity, speed, potential accuracy and cost-effectiveness. The trial pit is most commonly formed using a back-acting excavator which can typically determine ground conditions to some 4 metres below ground level. Hand excavation is often used to locate, expose and detail existing foundations, features or services. In general, it is difficult to extend pits significantly below the water table in predominantly granular soils, where flows can cause instability. Unless otherwise stated, the trial pits will not have been provided with temporary side support during their construction. Under such circumstances, entrance into the pit is not permitted and hence observations will have been made from the ground surface and samples taken from the excavator bucket.

Where access for personnel is required to allow close observation of the exposed strata, the taking of samples and the carrying out of in situ tests, the sides of the trial pits (Observation Pits in BS 5930:2015) will be made safe using temporary supports or the sides battered back to a stable angle. Some limited access to such Trial Pits (Observation Pits) at depths less than 1m may be allowed in stable conditions or where the sides are benched or battered back to a safe angle.

Trends in strata type, level and thickness can be determined, shear surfaces identified and the behaviour of plant, excavation sides and excavated materials can be related to the construction process. They are particularly valuable in land slip investigations. Some types of in situ test can be undertaken in such pits and large disturbed or block samples obtained.

CABLE PERCUSSION BORING

The light Cable Percussion technique of soft ground boring, typically at a diameter of 150mm, is a well-established simple and flexible method of boring vertical holes and generally allows data to be obtained in respect of strata conditions other than rock. A tubular cutter (for cohesive soils) or shell with a flap valve (for granular soils) is repeatedly lifted and dropped using a winch and rope operating from an "A" frame. Soil which enters these tools is regularly removed and either sampled for subsequent examination or test, or laid to one side for later removal off site and licensed disposal or, if permitted by the Client, use as backfill. Steel casing will have been used to prevent collapse of the borehole sides where necessary. A degree of disturbance of soil and mixing of layers is inevitable and the presence of very thin layers of different soils within a particular stratum may not be identified. Changes in strata type can only be detected on recognition of a change in soil samples at the surface, after the interface has been passed. For the foregoing reasons, depth measurements should not be considered to be more accurate than 0.10 metre. The technique can determine ground conditions to depths in excess of 30 metres under suitable circumstances and usually causes less surface disturbance than trial pitting.

In cohesive soils cylindrical samples are retrieved by driving or pushing in 100mm nominal diameter tubes. In soft soils, piston sampling or vane testing may be undertaken. In granular soils and often in cohesive materials, in situ Standard Penetration Tests (SPTs) are performed. The SPT records the number of standard blows required to drive a 50mm diameter open or cone ended probe for 300mm after an initial 150mm penetration. A modified method of recording is used in denser strata. Small disturbed samples are obtained throughout.

ROTARY DRILLING

Rotary Drilling to produce cores by rotating an annular diamond-impregnated tube or barrel into the ground is the technique most appropriate to the forming of site investigation boreholes through rock or other hard strata. It has the advantage of being able to be used vertically or at an angle. Core diameters of less than 100mm are most common for site investigation purposes. Core is normally retrieved in plastic lining tubes. A flushing fluid such as air, water or foam is used to cool the bit and carry cuttings to the surface. Depths in excess of 60 metres can be achieved under suitable circumstances using rotary techniques, with minimal surface disturbance.

Examination of cores allows detailed rock description and generally enables angled discontinuity surfaces to be observed. However, vertical holes do not necessarily reveal the presence of vertical or near-vertical fissures or joint discontinuities. The core type and/or techniques used will depend on the ground conditions. Where open hole rotary drilling is employed, descriptions of strata result from examination at the surface of small particles ejected from the borehole in the flushing medium. In consequence, no indication of fissuring, bedding, consistency or degree of weathering can be obtained.

DYNAMIC SAMPLING

This technique involves the driving of an open-ended tube into the ground and retrieval of the soil which enters the tube. It was previously called window or windowless sampling. The term "window sample" arose from the original device which had a "window" or slot cut into the side of the tube through which samples were taken. This was superseded by the use of a thin-walled plastic liner to retrieve the soil sample from within a sampler (windowless sampling) which has a solid wall. Line diameters range from 36 to 86mm. Such samples can be used for qualitative logging, selection of samples for classification and chemical analysis and for obtaining a rudimentary assessment of strength.

Driving devices can be hand-held or machine mounted and the drive tubes are typically in 1m lengths. Depending on the type of rig used, the hole formed can be cased to prevent collapse of the borehole sides. Where the type of rig does not allow the insertion of casing, the success of this technique can be limited when soils and groundwater conditions are such that the sides of the hole collapse on withdrawal of the sampler. Obstructions within the ground, the density of the material or its strength can also limit the depth and rate of penetration of this light-weight investigation technique. Nevertheless, it is a valuable tool where access is constrained such as within buildings or on embankments. Depths of up to 10m can be achieved in suitable circumstances depending on the rig type but depths of 5m to 6m are more common.

EXPLORATORY HOLE RECORDS

The data obtained by these techniques are generally presented on Trial Pit, Borehole, Drillhole or Dynamic Sample Records. The descriptions of strata result from information gathered from a number of sources which may include published geological data, preliminary field observations and descriptions, in situ test results, laboratory test results and specimen descriptions. A key to the symbols and abbreviations used accompanies the records. The descriptions on the exploratory hole records accommodate but may not necessarily be identical to those on any preliminary records or the laboratory summaries.

The records show ground conditions at the exploratory hole locations. The degree to which they can be used to represent conditions between or beyond such holes, however, is a matter for geological interpretation rather than factual reporting and the associated uncertainties must be recognised.

DYNAMIC PROBING

This technique typically measures the number of blows of a standard weight falling over a standard height to advance a cone-ended rod over sequential standard distances (typically 100mm). Some devices measure the penetration of the probe per standard blow. It is essentially a profiling tool and is best used in conjunction with other investigation techniques where site-specific correlation can be used to delineate the distribution of soft or loose soils or the upper horizon of a dense or strong layer such as rock.

Both machine-driven and hand-driven equipment is available, the selection depending upon access restrictions and the depth of penetration required. It is particularly useful where access for larger equipment is not available, disturbance is to be minimised or where there are cost constraints. No samples are recovered and some techniques leave a sacrificial cone head in the ground. As with other lightweight techniques, progress is limited in strong or dense soils. The results are presented both numerically and graphically. Depths of up to 10m are commonly achieved in suitable circumstances.

The hand-driven DCP probing device has been calibrated by the Highways Agency to provide a profile of CBR values over a range of depths.

INSTRUMENTATION

The most common form of instrument used in site investigation is either the standpipe or else the standpipe piezometer which can be installed in investigation holes. They are used to facilitate monitoring of groundwater levels and water sampling over a period of time following site work. Normally a standpipe would be formed using rigid plastic tubing which has been perforated or slotted over much of its length whilst a standpipe piezometer would have a filter tip which would be placed at a selected level and the hole sealed above and sometimes below to isolate the zone of interest. Groundwater levels are determined using an electronic "dip meter" to measure the depth to the water surface from ground level. Piezometers can also be used to measure permeability. They are simple and inexpensive instruments for long term monitoring but response times can limit their use in tidal areas and access to the ground surface at each instrument is necessary. Remote reading requires more sophisticated hydraulic, electronic or pneumatic equipment.

Settlement can be monitored using surface or buried target plates whilst lateral movement over a range of depths is monitored using slip indicator or inclinometer equipment.

1. The report is prepared for the exclusive use of the Client named in the document and copyright subsists with Geotechnics Limited. Prior written permission must be obtained to reproduce all or part of the report. It is prepared on the understanding that its contents are only disclosed to parties directly involved in the current investigation, preparation and development of the site.
2. Further copies may be obtained with the Client's written permission, from Geotechnics Limited with whom the master copy of the document will be retained.
3. The report and/or opinion is prepared for the specific purpose stated in the document and in relation to the nature and extent of proposals made available to Geotechnics Limited at that time. Re-consideration will be necessary should those details change. The recommendations should not be used for other schemes on or adjacent to the site without further reference to Geotechnics Limited.
4. The assessment of the significance of the factual data, where called for, is provided to assist the Client and their Engineer and/or Advisers in the preparation of their designs.
5. The report is based on the ground conditions encountered in the exploratory holes together with the results of field and laboratory testing in the context of the proposed development. The data from any commissioned desk study and site reconnaissance are also drawn upon. There may be special conditions appertaining to the site, however, which are not revealed by the investigation and which may not be taken into account in the report.
6. Methods of construction and/or design other than those proposed by the designers or referred to in the report may require consideration during the evolution of the proposals and further assessment of the geotechnical and any geoenvironmental data would be required to provide discussion and evaluations appropriate to these methods.
7. The accuracy of results reported depends upon the technique of measurement, investigation and test used and these values should not be regarded necessarily as characteristics of the strata as a whole (see accompanying notes on Investigation Techniques). Where such measurements are critical, the technique of investigation will need to be reviewed and supplementary investigation undertaken in accordance with the advice of the Company where necessary.
8. The samples selected for laboratory test are prepared and tested in accordance with the relevant Clauses and Parts of BS EN ISO 17892 and BS 1377 Parts 1 to 8, where appropriate, in Geotechnics Limited's UKAS accredited Laboratory, where possible. A list of tests is given.
9. Tests requiring the use of another laboratory having UKAS accreditation where possible are identified.
10. Any unavoidable variations from specified procedures are identified in the report.
11. Specimens are cut vertically, where this is relevant and can be identified, unless otherwise stated
12. All the data required by the test procedures are recorded on individual test sheets but the results in the report are presented in summary form to aid understanding and assimilation for design purposes. Where all details are required, these can be made available.
13. Whilst the report may express an opinion on possible configurations of strata between or beyond exploratory holes, or on the possible presence of features based on either visual, verbal, written, cartographical, photographic or published evidence, this is for guidance only and no liability can be accepted for its accuracy.
14. The Code of Practice for Ground Investigations – BS 5930:2015 calls for man-made soils to be described as Anthropogenic Ground with soils placed in an un-controlled manner classified as Made Ground and soils placed in a controlled manner as Fill. In view of the difficulty in always accurately determining the origin of man-made soils in exploratory holes, Geotechnics Limited classify such materials as Made Ground. Where soils can be clearly identified as being placed in a controlled manner then further classification of the soils as Fill has been added to the Exploratory Hole Records.
15. Classification of man-made soils is based on the inspection of retrieved samples or exposed excavations. Where it is obvious that foreign matter such as paper, plastic or metal is present, classification is clear. Frequently, however, for man-made soils that arise from the adjacent ground or from the backfilling of excavations, their visual characteristics can closely resemble those of undisturbed ground. Other evidence such as site history, exploratory hole location or other tests may need to be drawn upon to provide clarification. For these reasons, classification of soils on the exploratory hole records as either Made Ground or naturally occurring strata, the boundary between them and any interpretation that this gives rise to should be regarded as provisional and subject to re-evaluation in the light of further data.
16. The classification of materials as Topsoil is generally based on visual description and should not be interpreted to mean that the material so described complies with the criteria for Topsoil used in BS 3882:2015. Specific testing would be necessary where such a definition is a requirement.
17. Ground conditions should be monitored during the construction of the works and the report should be re-evaluated in the light of these data by the supervising geotechnical engineers.
18. Any comments on groundwater conditions are based on observations made at the time of the investigation, unless specifically stated otherwise. It should be noted, however, that the observations are subject to the method and speed of boring, drilling or excavation and that groundwater levels will vary due to seasonal or other effects.
19. Any bearing capacities for conventional spread foundations which are given in the report and interpreted from the investigation are for bases at a minimum depth of 1m below finished ground level in naturally occurring strata and at broadly similar levels throughout individual structures, unless otherwise stated. Typically they are based on serviceability criteria taking account of an assessment of the shear strength and/or density data obtained by the investigation. The foundations should be designed in accordance with the good practice embodied in BS 8004:2015 - Foundations, supplemented for housing by NHBC Standards. Foundation design is an iterative process and bearing pressures may need adjustment or other measures may need to be taken in the context of final layouts and levels prior to finalisation of proposals.
20. Unless specifically stated, the investigation does not take account of the possible effects of mineral extraction or of gases from fill or natural sources within, below or outside the site.
21. The costs or economic viability of the proposals referred to in the report, or of the solutions put forward to any problems encountered, will depend on very many factors in addition to geotechnical or geoenvironmental considerations and hence their evaluation is outside the scope of the report.

I. Worley Parsons Ground Investigation Factual Report

A. Figures

A.1 Exploratory location plan



Tottenham
Substation

MMHA02

MMHA03

MMHA01

BH1

BH2

MMWS01

BH3A

MMWS02

MMHA04

BH5

Pymme's Brook

Tottenham
Marshes

A1055

Watermead Way

Legend



Site Boundary



Mott MacDonald Exploratory Locations - 2018



Worley Parsons Exploratory Locations - 2013

0 5 10 20 30 40
Metres

A.2 Proposed Stage 1 Main works plan

B. Disclaimer

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose. We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties. This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

To the extent that this document is based on information supplied by other parties, Mott MacDonald Ltd accepts no liability for any loss or damage suffered by the client stemming from any conclusions based on data supplied by parties other than Mott MacDonald Ltd and used by Mott MacDonald Ltd in preparing this report.

To the extent that this document is based on information obtained in previous or recent ground investigations, persons using or relying on it should recognise that any such investigation can examine only a fraction of the subsurface conditions. In any ground investigation there remains

a risk that pockets or “hot-spots” of contamination or other hazards may not be identified, because investigations are necessarily based on sampling at localised points. Certain indicators or evidence of hazardous substances or conditions may have been outside the portion of the subsurface investigated or monitored, and thus may not have been identified or their full significance appreciated.

Mott MacDonald is not insured for, and therefore will not undertake surveys to identify asbestos or provide any guidance on the treatment of asbestos, or similar for toxic mould. Should the presence of asbestos or toxic mould be suspected during the course of the study, Mott MacDonald would recommend the appointment of a specialist contractor to address the issue and would not provide advice on risk or remedial measures.

C. Key Regulatory Legislation and Drivers

C.1 Key regulatory legislation and drivers

C.1.1 Environmental Protection Act, Part 2A

The primary legislative regime under which historic contaminated land is managed in the UK is Part IIA of the Environmental Protection Act, 1990 (termed “Part IIA”). The framework for the assessment of potential land contamination adopted in this report is based on current guidance documents regarding the implementation of Part IIA of the EPA and the assessment of potentially contaminated land, with particular reference to:

- DEFRA (2012): “Environmental Protection Act 1990: Part 2A, Contaminated Land Statutory Guidance;
- Contaminated Land Research Report SC050021/SR2 and SR3 describing the UK Contaminated Land Exposure Assessment Framework for assessing human health risks;
- British Standard (BS) 10175:2011+A1:2013 “Investigation of potentially contaminated sites: Code of practice”.
- British Standard (BS) 8485:2015 “Code of Practice for the Characterisation and remediation from ground gas in affected developments”.
- CIRIA C665 “Assessing Risks posed by hazardous ground gases to buildings”
- Environment Agency (2012) “Groundwater Protection Policy and Practice”, GP3.

Part IIA principally deals with sites where individual historic contamination linkages present a “Significant Possibility of Significant Harm” (SPOSH) or a Significant Possibility of Significant Pollution to Controlled Waters (SPOSPCOW) representing an unacceptable level of contamination risk for each linkage. The Part IIA clean-up is the minimum which can be done on a cost basis to make and keep the site in a “just safe” condition for an existing use. In determining SPOSPCOW, the requirements of the Groundwater Daughter Directive are taken into account under the Part IIA framework.

Elimination of liability under Part IIA is not always achievable largely because of the inherent risk basis of the statutory regime, changes in statutory guidance, the technical difficulty in establishing levels of contamination that are likely to represent SPOSH, and the variable distribution of contamination at many sites. Statutory guidance on Part IIA, recognises that sites require prioritisation by Local Authorities under the statutory Part IIA site inspection programme to ensure that only those sites likely to present the greatest risks are identified.

It should be recognised that considerable investigation and complex assessment is often required to establish whether sites are likely to meet the definition of contaminated land under Part IIA. As a result it is advised that consensus is sought on any recommendations regarding the significance of contaminated land risks and remedial measures through consultation with the Regulator(s).

C.1.2 Water Resources Act 1991

In addition to liabilities under Part IIA of the Environmental Protection Act 1990, liabilities may also result from historic groundwater pollution under section 161 of the Water Resources Act. Section 161 allows the Environment Agency to recover the costs of cleaning up any poisonous,

noxious or polluting matter or any solid waste matter that persons have caused or knowingly permitted to be present in controlled waters.

C.1.3 Planning Requirements

New development is regulated under the town and country planning act 1990 (as amended). This regime provides a mechanism for the planning authority to enforce the proper investigation of a development site in order to ensure that once development has occurred the site is suitable for its intended use. In England, the National Planning Policy Framework (NPPF) provides guidance on the implementation of contaminated land and pollution management requirements to address contamination risks associated with future site uses through the planning system. Paragraphs 120 and 121 of the NPPF state the following:

“120: To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

121. Planning policies and decisions should also ensure that:

- the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;
- after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990”

The requirements of the NPPF are further detailed by the Planning Practice Guidance (PPG) documents. Reference is therefore made to the ‘Land Affected by Contamination’ PPG [50] which details the risk based approach, identification of pollutant linkages, requirements for site investigation and the objectives of planning conditions.

C.1.4 Environmental Damage (prevention and remediation) Regulations 2009

The Environmental Damage (Prevention and Remediation) Regulations 2009 came into force on 1st March 2009 to implement EC Directive 2004/35 on environmental liability with regard to the prevention and remedying of environmental damage.

These Regulations do not apply retrospectively; environmental damage that took place before the Regulations came into force (1st March 2009), or damage that takes place (or is likely to take place) after that date but is caused by an incident, event or emission that occurred before that date are exempt from the requirements of the Regulations.

The Regulation is concerned with preventing environmental damage. It requires that all operators of activities that cause an imminent threat of environmental damage to take all reasonably practical steps to prevent the damage. Where damage has already been caused, the operator must take all reasonably practical steps to prevent further damage from occurring.

D. Contaminated Land Risk Assessment Methodology

The following classification published by the NHBC, EA, and CIEH (2008) has been developed from DOE Guide to Risk Assessment and Risk Management for Environmental Protection and the Statutory Guidance on Contaminated Land (Defra September 2006). The methodology differs from that presented in Contaminated Land Risk Assessment, A Guide to Good Practice (CIRIA C552, 2001), particularly in terms of the definitions of classification of consequence, which include a consideration of immediacy of hazards.

The key to the classification is that the designation of risk is based upon the consideration of both:

- the magnitude of the potential consequence (i.e. severity). [takes into account both the potential severity of the hazard and the sensitivity of the receptor]
- the magnitude of probability (i.e. likelihood). [takes into account both the presence of the hazard and receptor and the integrity of the pathway]

The potential consequences of contamination risks occurring at this Site are classified in accordance within the table below.

Table 22: Classification of consequence

Classification	Definition of consequence
Severe	Highly elevated concentrations likely to result in “significant harm” to human health as defined by the EPA 1990, Part 2A, if exposure occurs. Equivalent to EA Category 1 pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Catastrophic damage to crops, buildings or property.
Medium	Elevated concentrations which could result in “significant harm” to human health as defined by the EPA 1990, Part 2A if exposure occurs. Equivalent to EA Category 2 pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.
Mild	Exposure to human health unlikely to lead to “significant harm”. Equivalent to EA Category 3 pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population. Minor damage to crops, buildings or property.
Minor	No measurable effect on humans. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.

Source: R&D 66:2008

The probability of contamination risks occurring at this Site will be classified in accordance with Table 23 below from the CIRIA guidance. Note: A pollution linkage must first be established before probability is classified. If there is no pollution linkage then there is no potential risk. If there is no pollution linkage then there is no need to apply tests for probability and consequence.

Table 23: Classification of probability

Classification	Definition of probability
High likelihood	There is pollutant linkage and an event would appear very likely in the short-term and almost inevitable over the long-term, or there is evidence at the receptor of harm or pollution.
Likely	There is pollutant linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long-term.
Low likelihood	There is pollutant linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a long period such an event would take place, and is less likely in the shorter term.
Unlikely	There is pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long-term.

For each possible pollution linkage (source-pathway-receptor) identified, the potential risk can be evaluated based upon the following probability x consequence matrix shown in Table 24

Table 24: Overall contamination risk matrix

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Moderate / Low risk	Low risk
	Low likelihood	Moderate risk	Moderate / Low risk	Low risk	Very low risk
	Unlikely	Moderate / Low risk	Low risk	Very low risk	Very low risk

R&D 66:2008 presents definitions of the risk categories, together with the investigatory and remedial actions that are likely to be necessary in each case. These definitions are reproduced in Table 25. These risk categories apply to each pollutant linkage, not simply to each hazard or receptor.

Table 25: Definition of risk categories and likely actions required

Risk category	Definition and likely actions required
Very high	There is a high probability that severe harm could arise to a designated receptor from an identified hazard at the site without remediation action OR there is evidence that severe harm to a designated receptor is already occurring. Realisation of that risk is likely to present a substantial liability to be site owner/or occupier. Investigation is required as a matter of urgency and remediation works likely to follow in the short-term.
High	Harm is likely to arise to a designated receptor from an identified hazard at the site without remediation action. Realisation of the risk is likely to present a substantial liability to the site owner/or occupier. Investigation is required as a matter of urgency to clarify the risk. Remediation works may be necessary in the short-term and are likely over the longer term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Further investigative work is normally required to clarify the risk and to determine the potential liability to site owner/occupier. Some remediation works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from identified hazard, but it is likely at worst, that this harm if realised would normally be mild. It is unlikely that the site owner/or occupier would face substantial liabilities from such a risk. Further investigative work (which is likely to be limited) to clarify the risk may be required. Any subsequent remediation works are likely to be relatively limited.
Very Low	It is a low possibility that harm could arise to a designated receptor, but it is likely at worst, that this harm if realised would normally be mild or minor.
No potential risk	There is no potential risk if no pollution linkage has been established.

E. Contamination Assessment Criteria and Methodology

E.1 Contamination assessment criteria

E.1.1 Legislative background

Contaminated land is defined in UK Legislation (Environmental Protection Act 1990, Part II, and Contaminated Land Regulations 2000) as:

‘any land which appears to the Local Authority in whose area is situated to be in such a condition, by reasons of substances in, on or under the land, that:

- Significant harm is being caused or there is significant possibility of significant harm being caused, or
- Pollution of controlled waters is being caused or is likely to be caused’.

Harm is defined such that it should meet the following criteria:

- ‘Be harmful to a receptor listed in Table A of the statutory guidance (including human beings, certain ecological systems or living organisms, crops, livestock and certain buildings);
- Be within the description of harm specified for each receptor in the same table’.

In order to determine whether there is a possibility for significant harm, the following should be taken into account:

- The nature and degree of harm;
- The susceptibility of the receptors;
- The time scale within which the harm may occur.

Current regulatory guidance requires that the findings from a site investigation are evaluated for contamination on a site-specific basis using a risk-based approach. Risk assessment involves identification and evaluation of the hazards presented by the concentrations of contaminants measured, followed by an estimation of the risks that are associated with these hazards. Such estimation can be qualitative or quantitative depending on the extent and nature of the investigation data available. Quantitative risk assessment requires detailed toxicological, chemical, geological, hydrological and geotechnical data, and is not required unless the qualitative risk assessment demonstrates that a significant risk may exist but that there is enough uncertainty to make further detailed investigation and assessment desirable in order to reduce potential remediation costs. For the purposes of the investigations detailed herein, qualitative risk assessments have been undertaken.

The first step in assessing any risks, therefore, is to determine what hazards exist from the contaminants identified during the investigation. Hazard identification is widely undertaken by reference to published generic and site-specific guidelines. The following sections describe the available guidelines against which the chemical analytical data has been interpreted.

E.1.2 Risks to human health

This part of the risk assessment process uses a comparison of measured concentrations of contaminants in soil samples against conservative generic screening criteria. The generic

screening criteria are selected based upon the industry-accepted hierarchy, as follows: Land Quality Management (LQM) Suitable for Use Values (S4UL's) 2014, Defra Category 4 Screening Levels (C4SL's) 2014 then other UK standards, followed by European standards, then US standards and then standards from the rest of the world. The most relevant of these criteria are now discussed.

E.1.3 Suitable for use levels (S4ULs)

In the UK, the most authoritative standards are those which were published by Land Quality Management Ltd (LQM) in 2014. LQM has revised their guidance values for soils to produce 'Suitable for Use' levels (S4ULs) for the additional land uses and exposure assumptions presented in Defra's recent C4SL guidance. The S4ULs however, are all based on Health Criteria that represent minimal or tolerable levels of risks to health as described in the Environment Agency's SR2 guidance, ensuring that the resulting assessment criteria are 'suitable for use' under planning (Nathanail, McCaffrey, Gillett, Ogden, & Nathanail, 2015). Whilst representing a tolerable risk level they are generally less conservative than the previous Soil Guidance Values (SGVs) produced by CLEA. These revised values were released for use in 2014.

The S4ULs replace the previous LQM Generic Assessment Criteria which were published in 2009. S4ULs are available for residential, allotments, commercial and public open space land uses and for a variety of soil organic contents.

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E.1.4 Category 4 screening levels (C4SLs)

To support Defra's revised Statutory Guidance (SG) for Part 2A of the Environmental Protection Act 1990 (Part 2A) (Defra, 2012a) a methodology for deriving Category 4 Screening Levels (C4SLs) was presented by CL:AIRE in 2014. C4SLs have been derived using this methodology for six contaminants (arsenic, benzene, benzo(a)pyrene, cadmium, chromium VI and lead) to date and act as guidance values to determine if sites fall into Category 4 of Part 2A. These were produced to support the planning process in determining which sites fall into 'Category 4' of Part IIA of the Environmental Protection Act. Category 4 refers to sites where there is no risk that land poses a significant possibility of significant harm (SPOSH), or the level of risk is low. Sites with contaminant concentrations below these levels would therefore be classified as low level of toxicological concern.

E.1.5 Other criteria

In the absence of S4ULs and C4SLs, results have been assessed using:

- Contaminated Land Applications in Real Environments (CL:AIRE) Soil Generic Assessment Criteria (CL:AIRE, 2009).

E.1.5.1 CL:AIRE GAC

A range of GACs for 35 contaminants have been derived by a collection of scientific professionals under the oversight of Contaminated Land Applications in Real Environments (CL:AIRE, 2009). The methodology adopted in deriving the GACs was consistent with that used for producing the revised SGVs and used the CLEA model (v 1.06). These screening criteria will be used for any contaminants not covered by the current SGVs or LQM GACs.

The GAC have been derived for four generic land-uses; residential with consumption of homegrown produce, residential without consumption of homegrown produce, allotments and commercial land-use. Each land-use scenario has had GAC produced for 3 soil organic matter (SOM) contents; 1%, 2.5% and 6%.

E.1.6 Risk to controlled waters

Risks to the aqueous environment (groundwater and surface water) are generally assessed in the UK by reference to the Environment Agency's Remedial Targets Methodology Hydrogeological Risk Assessment for Land Contamination (EA, 2006). This allows remedial target concentrations for leachate extracts and groundwater to be derived for selected contaminants. The methodology is a tiered approach, with a remedial target being derived at the end of each tier, which would provide sufficient protection to controlled water resources.

There are four tiers of assessment, with each subsequent tier deriving a less conservative remedial target, due to examining further ways in which the contaminant may be reduced e.g. dilution, natural attenuation and degradation. For this site, it is considered appropriate to conduct a 'Tier 1 Assessment', using this guidance. This involves firstly selection of appropriate Assessment Criteria. For this site, the most sensitive receptor is considered to be groundwater in the underlying Principal Aquifer. The Tier 1 assessment requires a comparison of soil 'pore water' quality with the selected Assessment Criteria. 'Pore water quality' may be obtained by one of three methods:

- Laboratory analysis of pore water quality (or perched water quality).
- Laboratory analysis of soil leachate extracts (according to the Environment Agency R&D Note 301 – Leaching Tests for the Assessment of Contaminated Land).
- Theoretical calculation of the 'pore-water' concentration based on total soil concentrations, using soil-water partition coefficients.

The Environment Agency recommends that at least one of the above methods is used for analysis of data to allow for discrepancies, variations and errors in results. For reasons of accuracy and practicality, laboratory analysis of the leachate quality and groundwater has been used to provide an indication of the risk to the environment.

F. Laboratory Results

F.1.1 Soil Results



Certificate of Analysis

Certificate Number 18-29456-1

14-Jan-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 18-29456-1

Client Reference PC187331

Order No AUTH-OC19339

Contract Title Tottenham Substation GI

Description 12 Soil samples, 7 Leachate samples.

Date Received 17-Dec-18

Date Started 17-Dec-18

Date Completed 14-Jan-19

Test Procedures Identified by prefix DETSn (details on request).

Notes **This report supersedes 18-29456. Extra testing**

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Matrix Descriptions

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Sample ID	Depth	Lab No	Completed	Matrix Description
MMHA03	1	1436820	09/01/2019	Grey, sandy GRAVEL (Made ground - glass,plastic,slag) (sample matrix outside MCERTS scope of accreditation)
MMWS02	0.5	1436824	09/01/2019	Grey, sandy GRAVEL (Made ground - glass,plastic,slag) (sample matrix outside MCERTS scope of accreditation)
MMWS01	0.3	1436826	09/01/2019	Brown gravelly, sandy CLAY including odd rootlets
MMWS01	6.5	1436829	09/01/2019	Brown gravelly SAND

Summary of Chemical Analysis

Soil Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436818	1436819	1436820	1436821	1436822	1436823
Sample ID	MMHA01	MMHA02	MMHA03	MMHA03	MMHA04	MMHA04
Depth	1.00	0.30	1.00	2.00	0.30	1.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0							Y
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	44	67	20	21	27	70
Barium	DETSC 2301#	1.5	mg/kg	380	490	370	450	300	97
Beryllium	DETSC 2301#	0.2	mg/kg	4.2	3.9	1.5	1.1	2.3	5.2
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	6.0	4.2	2.9	3.4	2.6	20
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.7	5.3	0.2	1.4	5.9
Chromium	DETSC 2301#	0.15	mg/kg		25		43		220
Chromium III	DETSC 2301*	0.15	mg/kg	20		20		46	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0		< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	610	240	2700	160	220	4200
Iron	DETSC 2301	25	mg/kg	24000	43000	17000	43000	34000	56000
Lead	DETSC 2301#	0.3	mg/kg	280	400	660	700	340	2900
Mercury	DETSC 2325#	0.05	mg/kg	0.63	0.25	0.76	0.23	1.6	7.3
Nickel	DETSC 2301#	1	mg/kg	48	75	28	44	47	180
Selenium	DETSC 2301#	0.5	mg/kg	1.1	2.0	0.7	< 0.5	1.5	1.3
Vanadium	DETSC 2301#	0.8	mg/kg	57	79	30	86	84	87
Zinc	DETSC 2301#	1	mg/kg	400	730	1000	320	440	2900
Inorganics									
pH	DETSC 2008#			6.6	6.9	7.9	7.9	7.6	8.1
Total Organic Carbon	DETSC 2002	0.1	%	8.2	7.3	4.5	0.8	3.7	7.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1300	190	180	150	33	330
Sulphur as S, Total	DETSC 2320	0.01	%	0.22	0.29	0.07	0.04	0.07	0.79
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5		< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2		< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5		< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4		< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10		< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9		< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5		< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		0.8		6.0	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		2.1		5.1	
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10		11	
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		< 10		11	
EPH (C10-C40)	DETSC 3311#	10	mg/kg		85		320		1300

Summary of Chemical Analysis

Soil Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436818	1436819	1436820	1436821	1436822	1436823
Sample ID	MMHA01	MMHA02	MMHA03	MMHA03	MMHA04	MMHA04
Depth	1.00	0.30	1.00	2.00	0.30	1.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01		< 0.01	
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.03	< 0.03	0.07
Acenaphthylene	DETSC 3303#	0.03	mg/kg	0.04	< 0.03	< 0.03	< 0.03	0.06	0.04
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.07	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	0.06	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.13	0.18	0.10	0.07	1.2	0.28
Anthracene	DETSC 3303	0.03	mg/kg	0.05	0.05	0.04	< 0.03	0.20	0.10
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.38	0.51	0.31	0.10	2.7	0.69
Pyrene	DETSC 3303#	0.03	mg/kg	0.43	0.53	0.30	0.10	2.4	0.69
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.37	0.30	0.24	0.06	0.84	0.40
Chrysene	DETSC 3303	0.03	mg/kg	0.44	0.44	0.22	0.06	0.88	0.39
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.66	0.70	0.48	0.09	1.3	0.80
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.34	0.21	0.13	0.03	0.30	0.25
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.56	0.43	0.34	0.06	0.83	0.45
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.31	0.18	0.13	< 0.03	0.27	0.22
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	0.07	< 0.03	< 0.03	0.07	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.32	0.24	0.14	< 0.03	0.32	0.26
Phenanthrene	DETSC 3301	0.1	mg/kg	0.1		5.3		3.4	
Pyrene	DETSC 3301	0.1	mg/kg	0.4		6.6		8.9	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.0	3.8	2.4	0.53	11	4.6
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	1.6	0.5	0.5	0.4	2.6

Summary of Chemical Analysis

Soil Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436824	1436825	1436826	1436827	1436828	1436829
Sample ID	MMWSO	MMWSO	MMWSO	MMWSO	MMWSO	MMWSO
Depth	0.50	5.90	0.30	1.00	3.00	6.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Asbestos Quantification	DETSC 1102	0							
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	39	15	34	58	18	14
Barium	DETSC 2301#	1.5	mg/kg	820	280	390	1400	260	84
Beryllium	DETSC 2301#	0.2	mg/kg	2.8	1.5	2.8	2.9	0.8	0.3
Boron, Water Soluble	DETSC 2123#	0.2	mg/kg	3.8	4.8	4.5	3.6	3.0	1.8
Cadmium	DETSC 2301#	0.1	mg/kg	2.7	0.4	1.6	2.9	0.3	0.1
Chromium	DETSC 2301#	0.15	mg/kg		46				
Chromium III	DETSC 2301*	0.15	mg/kg	38		51	45	20	13
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0		< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	1200	76	170	710	86	33
Iron	DETSC 2301	25	mg/kg	34000	40000	43000	42000	36000	15000
Lead	DETSC 2301#	0.3	mg/kg	1100	79	450	1900	490	95
Mercury	DETSC 2325#	0.05	mg/kg	1.2	0.17	1.2	3.6	1.7	0.11
Nickel	DETSC 2301#	1	mg/kg	49	42	50	63	21	18
Selenium	DETSC 2301#	0.5	mg/kg	0.7	< 0.5	1.2	0.7	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	78	73	97	71	36	20
Zinc	DETSC 2301#	1	mg/kg	1300	200	570	1900	320	140
Inorganics									
pH	DETSC 2008#			8.9	7.6	6.3	7.4	8.3	8.2
Total Organic Carbon	DETSC 2002	0.1	%	4.9	0.7	5.4	5.9	1.4	0.6
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	560	60	54	610	490	55
Sulphur as S, Total	DETSC 2320	0.01	%	0.29	0.03	0.08	0.17	0.58	0.09
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	0.32
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2		< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5		< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4		< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	< 10	< 10	< 76.3
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	18
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9		< 0.9	< 0.9	< 0.9	90
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5		< 0.5	1.5	2.0	140
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6		0.9	17	11	120
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4		< 1.4	54	5.6	50
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10		< 10	72	19	420
TPH Ali/Aro Total	DETSC 3072*	10	mg/kg	< 10		< 10	72	19	500
EPH (C10-C40)	DETSC 3311#	10	mg/kg		< 10				

Summary of Chemical Analysis

Soil Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436824	1436825	1436826	1436827	1436828	1436829
Sample ID	MMWSO	MMWSO	MMWSO	MMWSO	MMWSO	MMWSO
Depth	0.50	5.90	0.30	1.00	3.00	6.50
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	3.2
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	< 0.10
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01		< 0.01	< 0.01	< 0.01	3.6
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.30	< 0.03	590
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.12	< 0.03	66
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.17	0.12	100
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.17	0.08	86
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.14	< 0.03	0.42	2.7	0.28	200
Anthracene	DETSC 3303	0.03	mg/kg	0.05	< 0.03	0.07	0.65	0.07	64
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.32	< 0.03	0.96	5.9	0.74	53
Pyrene	DETSC 3303#	0.03	mg/kg	0.30	< 0.03	0.90	5.0	0.73	88
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.18	< 0.03	0.29	2.9	0.22	32
Chrysene	DETSC 3303	0.03	mg/kg	0.19	< 0.03	0.36	2.6	0.26	24
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.32	< 0.03	0.42	4.4	0.29	20
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.15	1.5	0.10	6.9
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.16	< 0.03	0.22	3.4	0.10	26
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.10	< 0.03	0.13	1.3	< 0.03	6.0
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.38	< 0.03	1.9
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.13	< 0.03	0.12	1.6	< 0.03	5.4
Phenanthrene	DETSC 3301	0.1	mg/kg	0.3		2.1	6.5	0.3	41
Pyrene	DETSC 3301	0.1	mg/kg	0.8		5.4	18	0.6	17
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	2.0	< 0.10	4.0	33	3.0	1400
PCBs									
PCB 28 + PCB 31	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 52	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 101	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 118	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 153	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 138	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 180	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PCB 7 Total	DETSC 3401#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.3	< 0.3	1.0	0.6	0.4	< 0.3

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436818	1436820	1436822	1436824	1436826	1436827
Sample ID	MMHA01	MMHA03	MMHA04	MMWS0	MMWS0	MMWS0
Depth	1.00	1.00	0.30	0.50	0.30	1.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
VOCs									
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436818	1436820	1436822	1436824	1436826	1436827
Sample ID	MMHA01	MMHA03	MMHA04	MMWS0	MMWS0	MMWS0
Depth	1.00	1.00	0.30	0.50	0.30	1.00
Other ID						
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	0.06	0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436828	1436829
Sample ID	MMWS0	MMWS0
Depth	3.00	6.50
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	13/12/18	13/12/18
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	0.01	< 0.10
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Ethylbenzene	DETSC 3431	0.01	mg/kg	0.01	1.8
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	1.3
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	0.67
Styrene	DETSC 3431*	0.01	mg/kg	0.01	< 0.10
Bromoform	DETSC 3431	0.01	mg/kg	0.03	< 0.10
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.21
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	0.58
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	1.5

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436828	1436829
Sample ID	MMWS0	MMWS0
Depth	3.00	6.50
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	13/12/18	13/12/18
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	0.13
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.10

Summary of Chemical Analysis

Leachate Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436830	1436831	1436832
Sample ID	MMHA0	MMWS0	MMWS0
Depth	3	2	1
Other ID			
Sample Type	LEACHATE	LEACHATE	LEACHATE
Sampling Date	13/12/18	13/12/18	13/12/18
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Preparation						
NRA Leachate Preparation	DETSC 1009*			Y	Y	Y
Metals						
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	0.76	0.62	2.0
Barium, Dissolved	DETSC 2306	0.26	ug/l	3.3	10	1.9
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	16	28	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.32	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	0.9	3.1	< 0.4
Iron, Dissolved	DETSC 2306	5.5	ug/l	57	44	6.0
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.77	1.4	< 0.09
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	0.02	0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	0.55	1.2	0.57
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	< 0.6	< 0.6	< 0.6
Zinc, Dissolved	DETSC 2306	1.3	ug/l	1.9	8.6	< 1.3
Inorganics						
pH	DETSC 2008			6.7	6.5	6.7
Sulphate as SO ₄	DETSC 2055	0.1	mg/l	13	13	1.8
Sulphur as S, Total	DETSC 2320*	10	mg/l	< 10	< 10	< 10
Petroleum Hydrocarbons						
EPH (C10-C40)	DETSC 3311	10	ug/l	< 10	32	3700
PCBs						
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0	< 1.0
Phenols						
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100	< 100

Summary of Asbestos Analysis

Soil Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
1436818	MMHA01 1.00	SOIL	NAD	none	Lee Kerridge
1436819	MMHA02 0.30	SOIL	NAD	none	Lee Kerridge
1436820	MMHA03 1.00	SOIL	NAD	none	Lee Kerridge
1436821	MMHA03 2.00	SOIL	NAD	none	Lee Kerridge
1436822	MMHA04 0.30	SOIL	NAD	none	Lee Kerridge
1436823	MMHA04 1.50	SOIL	Chrysotile	Chrysotile present in bundles	Lee Kerridge
1436824	MMWS02 0.50	SOIL	NAD	none	Lee Kerridge
1436825	MMWS02 5.90	SOIL	NAD	none	Lee Kerridge
1436826	MMWS01 0.30	SOIL	NAD	none	Lee Kerridge
1436827	MMWS01 1.00	SOIL	NAD	none	Lee Kerridge
1436828	MMWS01 3.00	SOIL	NAD	none	Lee Kerridge
1436829	MMWS01 6.50	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 18-29456-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1436823
Sample ID	MMHA04
Depth	1.50
Other ID	
Sample Type	SOIL
Sampling Date	13/12/18
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETS 1102	Mass %	0.003
Gravimetric Quantification (a)	DETS 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETS 1102	Mass %	0.003
Quantification by PCOM (c)	DETS 1102	Mass %	na
Potentially Respirable Fibres (d)	DETS 1102	Fibres/g	na

Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	307.30
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Chrysotile bundles in sample		Mass %	0.003

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Chrysotile fibres in sample		Mass %	na

Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 18-29456
Client Ref PC187331
Contract Title Tottenham Substation GI
Sample Id MMHA03 1.00

Sample Numbers 1436820 1436833
Date Analysed 21/12/2018

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	22
DETSC 2003# Loss On Ignition	%	18
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	150
DETSC 3301 PAHs	mg/kg	42
DETSC 2008# pH	pH Units	7.9
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.7	< 0.01
DETSC 2306 Barium as Ba	8.3	< 0.1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	0.6	< 0.02
DETSC 2306 Mercury as Hg	0.03	< 0.002
DETSC 2306 Molybdenum as Mo	2.3	< 0.1
DETSC 2306 Nickel as Ni	< 0.5	< 0.1
DETSC 2306 Lead as Pb	0.91	< 0.05
DETSC 2306 Antimony as Sb	0.31	< 0.05
DETSC 2306 Selenium as Se	1.9	< 0.03
DETSC 2306 Zinc as Zn	6.2	0.06
DETSC 2055 Chloride as Cl	1200	< 100
DETSC 2055* Fluoride as F	140	1.4
DETSC 2055 Sulphate as SO4	14000	140
DETSC 2009* Total Dissolved Solids	59000	590
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	3400	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.8
DETSC 2009 Conductivity uS/cm	83.8
* Temperature*	15
Mass of Sample Kg*	0.140
Mass of dry Sample Kg*	0.122
Stage 1	
Volume of Leachant L2*	1.206
Volume of Eluate VE1*	0.93

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
Values are correct at time of issue.
* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 18-29456
Client Ref PC187331
Contract Title Tottenham Substation GI
Sample Id MMWS02 0.50

Sample Numbers 1436824 1436834
Date Analysed 21/12/2018

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	22
DETSC 2003# Loss On Ignition	%	19
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	95
DETSC 3301 PAHs	mg/kg	8.5
DETSC 2008# pH	pH Units	8.9
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.88	< 0.01
DETSC 2306 Barium as Ba	25	0.2
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	0.41	< 0.1
DETSC 2306 Copper as Cu	6.1	0.06
DETSC 2306 Mercury as Hg	0.04	< 0.002
DETSC 2306 Molybdenum as Mo	2.6	< 0.1
DETSC 2306 Nickel as Ni	0.9	< 0.1
DETSC 2306 Lead as Pb	2.6	< 0.05
DETSC 2306 Antimony as Sb	4.7	< 0.05
DETSC 2306 Selenium as Se	0.28	< 0.03
DETSC 2306 Zinc as Zn	18	0.18
DETSC 2055 Chloride as Cl	1000	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	2500	< 100
DETSC 2009* Total Dissolved Solids	94000	940
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	3900	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	135
* Temperature*	15

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.101
Stage 1	
Volume of Leachant L2*	0.996
Volume of Eluate VE1*	0.88

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 18-29456
Client Ref PC187331
Contract Title Tottenham Substation GI
Sample Id MMWS01 0.30

Sample Numbers 1436826 1436835
Date Analysed 21/12/2018

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	10
DETSC 2003# Loss On Ignition	%	17
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	120
DETSC 3301 PAHs	mg/kg	34
DETSC 2008# pH	pH Units	6.3
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	3.6	0.04
DETSC 2306 Barium as Ba	5.1	< 0.1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	1.2	< 0.02
DETSC 2306 Mercury as Hg	0.03	< 0.002
DETSC 2306 Molybdenum as Mo	1.8	< 0.1
DETSC 2306 Nickel as Ni	1.5	< 0.1
DETSC 2306 Lead as Pb	0.96	< 0.05
DETSC 2306 Antimony as Sb	1.1	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	3.3	0.03
DETSC 2055 Chloride as Cl	930	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	13000	130
DETSC 2009* Total Dissolved Solids	23000	230
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	4100	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	32.5
* Temperature*	15
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.937
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 18-29456
Client Ref PC187331
Contract Title Tottenham Substation GI
Sample Id MMWS01 6.50

Sample Numbers 1436829 1436836
Date Analysed 02/01/2019

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	0.8
DETSC 2003# Loss On Ignition	%	1.6
DETSC 3321# BTEX	mg/kg	6.8
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	710
DETSC 3301 PAHs	mg/kg	280
DETSC 2008# pH	pH Units	8.2
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	3.7	0.04
DETSC 2306 Barium as Ba	1.6	< 0.1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	0.6	< 0.02
DETSC 2306 Mercury as Hg	0.02	< 0.002
DETSC 2306 Molybdenum as Mo	3	< 0.1
DETSC 2306 Nickel as Ni	1.3	< 0.1
DETSC 2306 Lead as Pb	0.56	< 0.05
DETSC 2306 Antimony as Sb	0.86	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	1.3	0.01
DETSC 2055 Chloride as Cl	1600	< 100
DETSC 2055* Fluoride as F	170	1.7
DETSC 2055 Sulphate as SO4	13000	130
DETSC 2009* Total Dissolved Solids	48000	480
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	3600	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	7.3
DETSC 2009 Conductivity uS/cm	68.7
* Temperature*	15

Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.100
Stage 1	
Volume of Leachant L2*	0.969
Volume of Eluate VE1*	0.91

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

Information in Support of the Analytical Results

Our Ref 18-29456
Client Ref PC187331
Contract Tottenham Substation GI

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1436818	MMHA01 1.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436819	MMHA02 0.30 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436820	MMHA03 1.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436821	MMHA03 2.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436822	MMHA04 0.30 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436823	MMHA04 1.50 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436824	MMWS02 0.50 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436825	MMWS02 5.90 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436826	MMWS01 0.30 SOIL	13/12/18	GJ 250ml, GJ 60ml x2		
1436827	MMWS01 1.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436828	MMWS01 3.00 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436829	MMWS01 6.50 SOIL	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436830	MMHA03 1.00 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436831	MMWS02 0.50 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436832	MMWS01 6.50 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436833	MMHA03 1.00 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436834	MMWS02 0.50 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		
1436835	MMWS01 0.30 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2		
1436836	MMWS01 6.50 LEACHATE	13/12/18	GJ 250ml, GJ 60ml x2, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 2002	Organic matter	%	0.1	Air Dried	No	Yes	Yes
DETSC 2003	Loss on ignition	%	0.01	Air Dried	No	Yes	Yes
DETSC 2008	pH	pH Units	1	Air Dried	No	Yes	Yes
DETSC 2024	Sulphide	mg/kg	10	Air Dried	No	Yes	Yes
DETSC 2076	Sulphate Aqueous Extract as SO ₄	mg/l	10	Air Dried	No	Yes	Yes
DETSC 2084	Total Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2084	Total Organic Carbon	%	0.5	Air Dried	No	Yes	Yes
DETSC 2119	Ammoniacal Nitrogen as N	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide free	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Cyanide total	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC 2130	Phenol - Monohydric	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC 2130	Thiocyanate	mg/kg	0.6	Air Dried	No	Yes	Yes
DETSC 2321	Total Sulphate as SO ₄	%	0.01	Air Dried	No	Yes	Yes
DETSC 2325	Mercury	mg/kg	0.05	Air Dried	No	Yes	Yes
DETSC 3049	Sulphur (free)	mg/kg	0.75	Air Dried	No	Yes	Yes
DETSC2123	Boron (water soluble)	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Arsenic	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Barium	mg/kg	1.5	Air Dried	No	Yes	Yes
DETSC2301	Beryllium	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Cadmium Available	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cadmium	mg/kg	0.1	Air Dried	No	Yes	Yes
DETSC2301	Cobalt	mg/kg	0.7	Air Dried	No	Yes	Yes
DETSC2301	Chromium	mg/kg	0.15	Air Dried	No	Yes	Yes
DETSC2301	Copper	mg/kg	0.2	Air Dried	No	Yes	Yes
DETSC2301	Manganese	mg/kg	20	Air Dried	No	Yes	Yes
DETSC2301	Molybdenum	mg/kg	0.4	Air Dried	No	Yes	Yes
DETSC2301	Nickel	mg/kg	1	Air Dried	No	Yes	Yes
DETSC2301	Lead	mg/kg	0.3	Air Dried	No	Yes	Yes
DETSC2301	Selenium	mg/kg	0.5	Air Dried	No	Yes	Yes
DETSC2301	Zinc	mg/kg	1	Air Dried	No	Yes	Yes
DETSC 3072	Ali/Aro C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	1.2	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	1.5	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aliphatic C21-C35	mg/kg	3.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	0.9	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C12	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C10-C35	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	0.5	As Received	No	Yes	Yes
DETSC 3072	Aromatic C12-C16	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	0.6	As Received	No	Yes	Yes
DETSC 3072	Aromatic C16-C21	mg/kg	10	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETSC 3072	Aromatic C21-C35	mg/kg	1.4	As Received	No	Yes	Yes
DETS 062	Benzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Ethylbenzene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Toluene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	m+p Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETS 062	o Xylene	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3311	C10-C24 Diesel Range Organics (DRO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	C24-C40 Lube Oil Range Organics (LORO)	mg/kg	10	As Received	No	Yes	Yes
DETSC 3311	EPH (C10-C40)	mg/kg	10	As Received	No	Yes	Yes

Appendix A - Details of Analysis

Method	Parameter	Units	Limit of Detection	Sample Preparation	Sub-Contracted	UKAS	MCERTS
DETSC 3303	Acenaphthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Acenaphthylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(a)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(b)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(k)fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Benzo(g,h,i)perylene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Dibenzo(a,h)anthracene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Fluoranthene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Naphthalene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Phenanthrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3303	Pyrene	mg/kg	0.03	As Received	No	Yes	Yes
DETSC 3401	PCB 28 + PCB 31	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 52	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 101	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 118	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 153	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 138	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB 180	mg/kg	0.01	As Received	No	Yes	Yes
DETSC 3401	PCB Total	mg/kg	0.01	As Received	No	Yes	Yes

Method details are shown only for those determinands listed in Annex A of the MCERTS standard. Anything not included on this list falls outside the scope of MCERTS. No Recovery Factors are used in the determination of results. Results reported assume 100% recovery. Full method statements are available on request.

Summary of Chemical Analysis

Soil VOC Samples

Our Ref 18-29456
Client Ref PC187331
Contract Title Tottenham Substation GI

				Lab No															
Test	Method	LOD	Units	Commercial GAC - SOM 6%		Sample ID	Depth	Other ID	Sample Type	Sampling Date	Sampling Time	1436818	1436820	1436822	1436824	1436826	1436827	1436828	1436829
						MMHA01	MMHA03	MMHA04	MMW50	MMW50	1	1	MMW50	MMW50					
						1.00	1.00	0.30	0.50	0.30	1.00	3.00	6.50						
						SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL						
						13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18	13/12/18						
						n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s
VOCS																			
Vinyl Chloride mg/kg	DETSC 3431	0.01	mg/kg	0.12	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,1-Dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Trans-1,2-dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,1-dichloroethane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Cis-1,2-dichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
2,2-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Bromochloromethane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Chloroform mg/kg	DETSC 3431	0.01	mg/kg	350	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,1,1-trichloroethane mg/kg	DETSC 3431	0.01	mg/kg	3000	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,1-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Carbon tetrachloride mg/kg	DETSC 3431	0.01	mg/kg	14	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Benzene mg/kg	DETSC 3431	0.01	mg/kg	90	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2-dichloroethane mg/kg	DETSC 3431	0.01	mg/kg	1.7	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Trichloroethylene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Dibromomethane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Bromodichloromethane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
cis-1,3-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Toluene mg/kg	DETSC 3431	0.01	mg/kg	180000 (4360)	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
trans-1,3-dichloropropene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,1,2-trichloroethane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Tetrachloroethylene mg/kg	DETSC 3431	0.01	mg/kg	95	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,3-dichloropropane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Dibromochloromethane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2-dibromoethane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Chlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,1,1,2-tetrachloroethane mg/kg	DETSC 3431	0.01	mg/kg	560	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Ethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	27000 (2840)	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	1.8
m+p-Xylene mg/kg	DETSC 3431	0.01	mg/kg	30000 (3170)	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	1.3
o-Xylene mg/kg	DETSC 3431	0.01	mg/kg	33000 (2620)	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.67
Styrene mg/kg	DETSC 3431*	0.01	mg/kg	11000 (3400)	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Bromoform mg/kg	DETSC 3431	0.01	mg/kg	3000	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.03
Isopropylbenzene mg/kg	DETSC 3431	0.01	mg/kg	7300 (2250)	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.21
Bromobenzene mg/kg	DETSC 3431	0.01	mg/kg	490	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2,3-trichloropropane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
n-propylbenzene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
2-chlorotoluene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,3,5-trimethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.58
4-chlorotoluene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Tert-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2,4-trimethylbenzene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	1.5
sec-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
p-isopropyltoluene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.13
1,3-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	170	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,4-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	21000 (1280)	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
n-butylbenzene mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2-dichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	11300 (3240)	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2-dibromo-3-chloropropane mg/kg	DETSC 3431	0.01	mg/kg	-	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2,4-trichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	1300	-	0.02	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
Hexachlorobutadiene mg/kg	DETSC 3431	0.01	mg/kg	120	-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10
1,2,3-trichlorobenzene mg/kg	DETSC 3431	0.01	mg/kg	590	-	0.06	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.10



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No.4225

Attention :	Philip Harrison
Date :	17th May, 2013
Your reference :	305008-00018 51603-00
Our reference :	Test Report 13/4280 Batch 1
Location :	TOTTENHAM MARSH
Date samples received :	4th May, 2013
Status :	Final report
Issue :	1

Ten samples were received for analysis on 4th May, 2013. 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.

Compiled By:

Paul Lee-Boden B.Sc
Project Manager

Bob Millward B.Sc
Principal Chemist

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4280

Report : Solid

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

J E Sample No.	1-6	7-9	10-12	13-15	16-18	25-27	28-30	31-33			Please see attached notes for all abbreviations and acronyms		
Sample ID	01BH6/2.010513S01.9-2.0	02BH6/10.0513S03.8-4.0	03BH6/20.0513S07.4-7.8	04CPLC/47B01013S03.8-4.0	05BH4/2300413S04.2-4.3	06BH4/2.010513S01.9-2.0	08BH4/30.0513S03.8-3.9	10BH4/40.0513S06.4-6.5					
Depth	1.9-2.0	3.8-4.0	7.4-7.8	3.8-4.0	4.2-4.3	1.9-2.0	3.8-3.9	6.4-6.5					
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	01/05/2013	01/05/2013	01/05/2013	01/05/2013	30/04/2013	01/05/2013	01/05/2013	02/05/2013					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1			LOD	Units	Method No.
Date of Receipt	04/05/2013	04/05/2013	04/05/2013	04/05/2013	04/05/2013	04/05/2013	04/05/2013	04/05/2013					
Arsenic #	21.9	7.5	14.3	9.6	16.7	-	16.3	10.0			<0.5	mg/kg	TM30/PM15
Cadmium #	0.3	0.2	0.2	0.2	0.4	-	1.5	0.5			<0.1	mg/kg	TM30/PM15
Chromium #	6.2	43.6	22.0	17.4	38.6	-	57.9	41.5			<0.5	mg/kg	TM30/PM15
Copper #	36	32	<1	50	15	-	45	16			<1	mg/kg	TM30/PM15
Lead #	22	20	15	50	124	-	6	11			<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1	0.4	-	0.1	<0.1			<0.1	mg/kg	TM30/PM15
Nickel #	13.7	21.3	34.7	23.4	33.5	-	41.9	37.2			<0.7	mg/kg	TM30/PM15
Selenium #	1	<1	<1	<1	<1	-	16	2			<1	mg/kg	TM30/PM15
Total Sulphate #	4579	-	-	-	-	1592	-	-			<50	mg/kg	TM50/PM15
Water Soluble Boron #	3.8	3.3	0.6	3.8	4.7	-	91.7	8.5			<0.1	mg/kg	TM74/PM32
Zinc #	107	79	36	144	124	-	169	95			<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	2.15	<0.04	<0.04	<0.04	2.00	-	<0.04	0.15			<0.04	mg/kg	TM4/PM8
Acenaphthylene	6.11	0.05	<0.03	<0.03	0.24	-	<0.03	<0.03			<0.03	mg/kg	TM4/PM8
Acenaphthene #	1.87	<0.05	<0.05	<0.05	0.16	-	<0.05	<0.05			<0.05	mg/kg	TM4/PM8
Fluorene #	3.11	0.06	<0.04	<0.04	0.29	-	<0.04	<0.04			<0.04	mg/kg	TM4/PM8
Phenanthrene #	16.50	0.53	<0.03	0.20	0.88	-	<0.03	<0.03			<0.03	mg/kg	TM4/PM8
Anthracene #	7.84	0.20	<0.04	0.05	0.32	-	<0.04	<0.04			<0.04	mg/kg	TM4/PM8
Fluoranthene #	15.00	0.94	0.05	0.39	0.84	-	<0.03	<0.03			<0.03	mg/kg	TM4/PM8
Pyrene #	27.38	0.77	0.03	0.30	0.94	-	<0.03	<0.03			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	9.33	0.41	<0.06	0.24	0.51	-	<0.06	<0.06			<0.06	mg/kg	TM4/PM8
Chrysene #	9.80	0.43	<0.02	0.19	0.73	-	<0.02	<0.02			<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	6.78	0.56	<0.07	0.26	0.87	-	<0.07	<0.07			<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	5.61	0.33	<0.04	0.15	0.57	-	<0.04	<0.04			<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	1.42	0.21	<0.04	0.10	0.37	-	<0.04	<0.04			<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.46	<0.04	<0.04	<0.04	0.08	-	<0.04	<0.04			<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	1.65	0.20	<0.04	0.10	0.35	-	<0.04	<0.04			<0.04	mg/kg	TM4/PM8
PAH 16 Total	115.0	4.7	<0.6	2.0	9.2	-	<0.6	<0.6			<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	4.88	0.40	<0.05	0.19	0.63	-	<0.05	<0.05			<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	1.90	0.16	<0.02	0.07	0.24	-	<0.02	<0.02			<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	125	111	118	107	106	-	104	107			<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<0.002	<0.002	<0.002	<0.002	<0.002	-	<0.002	<0.002			<0.002	mg/kg	TM15/PM10
Benzene #	<0.003	<0.003	<0.003	<0.003	0.013	-	<0.003	<0.003			<0.003	mg/kg	TM15/PM10
Toluene #	<0.003	<0.003	<0.003	<0.003	0.005	-	<0.003	<0.003			<0.003	mg/kg	TM15/PM10
Ethylbenzene #	<0.003	<0.003	<0.003	<0.003	0.028	-	<0.003	0.241			<0.003	mg/kg	TM15/PM10
p/m-Xylene #	<0.006	<0.006	<0.006	<0.006	0.035	-	<0.006	0.038			<0.006	mg/kg	TM15/PM10
o-Xylene #	<0.003	<0.003	<0.003	<0.003	0.011	-	<0.003	0.050			<0.003	mg/kg	TM15/PM10
Surrogate Recovery Toluene D8	77	114	112	113	127	-	84	114			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	79	100	107	110	114	-	77	107			<0	%	TM15/PM10
EPH (C8-C40) #	833	50	62	53	126	-	<30	<30			<30	mg/kg	TM5/PM8

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4280

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

Please see attached notes for all abbreviations and acronyms

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4280

Report : NRA Leachate

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

J E Sample No.	1-6	25-27											
Sample ID	01B6/2 0010513501.9-2.0	01B6/2 0010513501.9-2.0											
Depth	1.9-2.0	1.9-2.0											
COC No / misc													
Containers	V J T	V J T											
Sample Date	01/05/2013	01/05/2013											
Sample Type	Soil	Soil											
Batch Number	1	1											
Date of Receipt	04/05/2013	04/05/2013											
										LOD	Units	Method No.	
Dissolved Arsenic	<0.0009	-								<0.0009	mg/l	TM30/PM14	
Dissolved Cadmium	<0.00003	-								<0.00003	mg/l	TM30/PM14	
Dissolved Chromium	0.0010	-								<0.0002	mg/l	TM30/PM14	
Dissolved Copper	<0.003	-								<0.003	mg/l	TM30/PM14	
Dissolved Iron	0.0055	-								<0.0047	mg/l	TM30/PM14	
Dissolved Lead	0.0008	-								<0.0004	mg/l	TM30/PM14	
Dissolved Nickel	0.0263	-								<0.0002	mg/l	TM30/PM14	
Dissolved Selenium	<0.0012	-								<0.0012	mg/l	TM30/PM14	
Dissolved Zinc	0.1848	-								<0.0015	mg/l	TM30/PM14	
Mercury Dissolved by CVAf	0.00012	-								<0.00001	mg/l	TM61/PM38	
Total Dissolved Sulphur	125.00	-								<0.01	mg/l	TM30/PM14	
PAH MS													
Naphthalene	<0.000014	-								<0.000014	mg/l	TM4/PM30	
Acenaphthylene	0.000130	-								<0.000013	mg/l	TM4/PM30	
Acenaphthene	<0.000013	-								<0.000013	mg/l	TM4/PM30	
Fluorene	0.000030	-								<0.000014	mg/l	TM4/PM30	
Phenanthrene	0.000090	-								<0.000011	mg/l	TM4/PM30	
Anthracene	0.000040	-								<0.000013	mg/l	TM4/PM30	
Fluoranthene	0.000110	-								<0.000012	mg/l	TM4/PM30	
Pyrene	0.000250	-								<0.000013	mg/l	TM4/PM30	
Benzo(a)anthracene	0.000180	-								<0.000015	mg/l	TM4/PM30	
Chrysene	0.000220	-								<0.000011	mg/l	TM4/PM30	
Benzo(bk)fluoranthene	0.000200	-								<0.000018	mg/l	TM4/PM30	
Benzo(a)pyrene	0.000170	-								<0.000016	mg/l	TM4/PM30	
Indeno(123cd)pyrene	0.000080	-								<0.000011	mg/l	TM4/PM30	
Dibenzo(ah)anthracene	0.00002	-								<0.00001	mg/l	TM4/PM30	
Benzo(ghi)perylene	0.000080	-								<0.000011	mg/l	TM4/PM30	
PAH 16 Total	0.001600	-								<0.000195	mg/l	TM4/PM30	
Benzo(b)fluoranthene	0.00014	-								<0.00001	mg/l	TM4/PM30	
Benzo(k)fluoranthene	0.00006	-								<0.00001	mg/l	TM4/PM30	
PAH Surrogate % Recovery	89	-								<0	%	TM4/PM30	
Methyl Tertiary Butyl Ether	<0.001	-								<0.001	mg/l	TM15/PM10	
Benzene	<0.001	-								<0.001	mg/l	TM15/PM10	
Toluene	<0.002	-								<0.002	mg/l	TM15/PM10	
Ethylbenzene	<0.002	-								<0.002	mg/l	TM15/PM10	
p/m-Xylene	<0.003	-								<0.003	mg/l	TM15/PM10	
o-Xylene	<0.002	-								<0.002	mg/l	TM15/PM10	
Surrogate Recovery Toluene D8	104	-								<0	%	TM15/PM10	
Surrogate Recovery 4-Bromofluorobenzene	108	-								<0	%	TM15/PM10	
EPH (C8-C40)	<0.01	-								<0.01	mg/l	TM5/PM30	

Please see attached notes for all abbreviations and acronyms

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4280

Report : NRA Leachate

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

J E Sample No.		1-6	25-27								Please see attached notes for all abbreviations and acronyms		
Sample ID		018H402.0010513501.9-2.0	008H402.0010513501.9-2.0										
Depth		1.9-2.0	1.9-2.0										
COC No / misc													
Containers		V J T	V J T										
Sample Date		01/05/2013	01/05/2013										
Sample Type		Soil	Soil										
Batch Number		1	1										
Date of Receipt		04/05/2013	04/05/2013										
Resorcinol	<0.0005	-									<0.0005	mg/l	TM26/PM0
Catechol	<0.0005	-									<0.0005	mg/l	TM26/PM0
Phenol	<0.0005	-									<0.0005	mg/l	TM26/PM0
m/p-cresol	<0.0005	-									<0.0005	mg/l	TM26/PM0
o-cresol	<0.0005	-									<0.0005	mg/l	TM26/PM0
Total cresols	<0.0005	-									<0.0005	mg/l	TM26/PM0
Xylenols	<0.0005	-									<0.0005	mg/l	TM26/PM0
1-naphthol	<0.0005	-									<0.0005	mg/l	TM26/PM0
2,3,5-trimethyl phenol	<0.0005	-									<0.0005	mg/l	TM26/PM0
2-isopropylphenol	<0.0005	-									<0.0005	mg/l	TM26/PM0
Total Speciated Phenols HPLC	<0.005	-									<0.005	mg/l	TM26/PM0
Chloride	<0.3	-									<0.3	mg/l	TM27/PM0
Sulphate	312.05	-									<0.05	mg/l	TM27/PM0
Sulphate	293.68	119.36									<0.05	mg/l	TM38/PM0
Free Cyanide	<0.005	-									<0.005	mg/l	TM89/PM0
Total Cyanide	<0.005	-									<0.005	mg/l	TM89/PM0
Complex Cyanide	<0.01	-									<0.01	mg/l	TM89/PM0
Ammoniacal Nitrogen as NH4	0.08	-									<0.03	mg/l	TM38/PM0
Sulphide	<0.3	-									<0.3	mg/l	TM106/PM0
Thiocyanate	<0.02	-									<0.02	mg/l	TM107/PM0
Dissolved Organic Carbon	4	-									<2	mg/l	TM60/PM0
Electrical Conductivity @25C	200	-									<2	uS/cm	TM76/PM0
pH	7.59	-									<0.01	pH units	TM73/PM0

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 13/4280

SOILS

Please note we are only MCERTS accredited 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 we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

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.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and 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

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

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.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final 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.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
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 a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No 13/4280

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Solid Results expressed on Dry/Wet basis
PM4	Moisture Content	PM0	No Preparation				
PM4	Moisture Content	PM0	No Preparation				WET
TM4	16 PAH by GC-MS, modified USEPA 8270	PM30	Magnetic stirrer extraction			AR	
TM4	16 PAH by GC-MS, modified USEPA 8270	PM30	Magnetic stirrer extraction			AR	WET
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	End Over End extraction			AR	DRY
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	End Over End extraction	Yes		AR	DRY
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	End Over End extraction			AR	
TM5	EPH by GC-FID, modified USEPA 8015	PM30	Magnetic stirrer extraction			AR	WET
TM5	EPH by GC-FID, modified USEPA 8015	PM8	End Over End extraction	Yes		AR	DRY
PM13	Soil Typing for MCERTS	PM0	No Preparation			AR	
TM15	VOC - Target by GC-MS, modified USEPA 8260	PM10	VOC GC-MS			AR	DRY
TM15	VOC - Target by GC-MS, modified USEPA 8260	PM10	VOC GC-MS	Yes		AR	DRY
TM15	VOC - Target by GC-MS, modified USEPA 8260	PM10	VOC GC-MS			AR	
TM15	VOC - Target by GC-MS, modified USEPA 8260	PM10	VOC GC-MS			AR	WET
TM21	TOC and TC by Combustion	PM24	Eltra preparation			AD	DRY
TM22	Loss on Ignition (LOI) - gravimetric	PM0	No Preparation	Yes		AD	DRY
TM26	Phenols by HPLC	PM0	No Preparation			AR	WET
TM26	Phenols by HPLC	PM21	Methanol : NaOH extraction			AR	DRY
TM26	Phenols by HPLC	PM21	Methanol : NaOH extraction	Yes		AR	DRY
TM27	SO ₄ ,Cl,NO ₃ ,NO ₂ ,F,PO ₄ by Dionex	PM0	No Preparation			AR	WET
TM30	Metals by ICP-OES	PM14	Metals by ICP (Waters)			AR	WET
TM30	Metals by ICP-OES	PM15	Aqua Regia extraction (Soils)	Yes		AD	DRY
TM38	SO ₄ ,Cl,NO ₃ ,NO ₂ ,F,PO ₄ , Amm N ₂ ,ThioCN, Hex Cr by Aquakem	PM0	No Preparation			AR	WET
TM38	SO ₄ ,Cl,NO ₃ ,NO ₂ ,F,PO ₄ , Amm N ₂ ,ThioCN, Hex Cr by Aquakem	PM20	1:2 soil to water extraction	Yes		AD	DRY
TM38	SO ₄ ,Cl,NO ₃ ,NO ₂ ,F,PO ₄ , Amm N ₂ ,ThioCN, Hex Cr by Aquakem	PM20	1:2 soil to water extraction			AR	DRY
TM50	Total Sulphate by ICP-OES	PM15	Aqua Regia extraction (Soils)	Yes		AD	DRY
TM60	TOC/DOC by NDIR	PM0	No Preparation			AR	WET
TM61	Mercury - low level CVAf	PM38	Mercury CVAf			AR	WET
TM73	pH in by Metrohm	PM0	No Preparation			AR	WET
TM73	pH in by Metrohm	PM11	1:2.5 soil/water extraction	Yes		AR	WET
TM74	Water Soluble Boron by ICP-OES	PM32	Preparation of soils for WSB	Yes		AD	DRY
TM76	Electrical Conductivity by Metrohm	PM0	No Preparation			AR	WET
TM89	Cyanide by FIA	PM0	No Preparation			AR	WET
TM89	Cyanide by FIA	PM45	Cyanide & Thiocyanate prep for soils			AR	DRY
TM89	Cyanide by FIA	PM45	Cyanide & Thiocyanate prep for soils	Yes		AR	DRY
TM106	Sulphide by CFA	PM0	No Preparation			AR	WET
TM107	Thiocyanate by CFA	PM0	No Preparation			AR	WET
TM107	Thiocyanate by CFA	PM45	Cyanide & Thiocyanate prep for soils			AR	DRY
TM108	Elemental Sulphur by HPLC	PM8	End Over End extraction			AR	DRY



Jones Environmental Laboratory

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No.4225

Attention :	Philip Harrison
Date :	21st May, 2013
Your reference :	305008-00018 51603-00
Our reference :	Test Report 13/4457 Batch 1
Location :	TOTTENHAM MARSH
Date samples received :	11th May, 2013
Status :	Final report
Issue :	1

Eight samples were received for analysis on 11th May, 2013. 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.

Compiled By:

Paul Lee-Boden B.Sc
Project Manager

Bob Millward B.Sc
Principal Chemist

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4457

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	16-21	22-24	25-27			Please see attached notes for all abbreviations and acronyms		
Sample ID	01BH01080513501.9-2.0	02BH020805135020.2-1	03BH03080513506.4-6.5	04BH040805135018.4-18.5	05BH05100513502.5-2.7	06BH02.000513501.9-2.0	07BH03090513503.5-3.7	08BH04CATC080513503.5-3.7					
Depth	1.9-2.0	2.0-2.1	6.4-6.5	19.4-19.5	2.5-2.7	1.9-2.0	3.5-3.7	2.5-2.7					
COC No / misc							HIGH PID						
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	08/05/2013	08/05/2013	08/05/2013	09/05/2013	09/05/2013	09/05/2013	09/05/2013	09/05/2013					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013			LOD	Units	Method No.
Arsenic #	17.3	-	8.0	24.8	90.0	7.5	8.4	68.0			<0.5	mg/kg	TM30/PM15
Cadmium #	0.2	-	0.3	0.1	0.9	0.5	<0.1	0.7			<0.1	mg/kg	TM30/PM15
Chromium #	17.8	-	39.5	38.2	29.5	61.8	6.4	28.8			<0.5	mg/kg	TM30/PM15
Copper #	42	-	28	<1	8	17	4	10			<1	mg/kg	TM30/PM15
Lead #	466	-	16	8	8	17	<5	8			<5	mg/kg	TM30/PM15
Mercury #	0.6	-	<0.1	<0.1	<0.1	0.3	<0.1	<0.1			<0.1	mg/kg	TM30/PM15
Nickel #	21.2	-	38.1	17.3	46.7	50.7	9.2	38.8			<0.7	mg/kg	TM30/PM15
Selenium #	<1	-	<1	<1	10	2	<1	9			<1	mg/kg	TM30/PM15
Total Sulphate #	-	649	-	-	-	1130	-	-			<50	mg/kg	TM50/PM15
Water Soluble Boron #	2.0	-	5.5	1.3	15.3	4.1	0.2	13.5			<0.1	mg/kg	TM74/PM32
Zinc #	143	-	86	69	57	148	11	60			<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	0.32	-	2.25	<0.04	0.07	<0.04	0.14	<0.04			<0.04	mg/kg	TM4/PM8
Acenaphthylene	0.15	-	0.10	<0.03	0.44	0.04	2.15	1.49			<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	-	<0.05	<0.05	2.10	<0.05	10.91	4.44			<0.05	mg/kg	TM4/PM8
Fluorene #	0.09	-	0.05	<0.04	1.08	<0.04	7.42	2.43			<0.04	mg/kg	TM4/PM8
Phenanthrene #	0.67	-	0.12	<0.03	0.99	0.14	20.02	2.95			<0.03	mg/kg	TM4/PM8
Anthracene #	0.19	-	<0.04	<0.04	0.56	0.06	7.02	1.60			<0.04	mg/kg	TM4/PM8
Fluoranthene #	1.75	-	0.05	<0.03	1.15	0.10	9.78	3.45			<0.03	mg/kg	TM4/PM8
Pyrene #	1.41	-	0.05	<0.03	1.41	0.10	12.43	4.32			<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	0.89	-	0.07	<0.06	0.55	<0.06	3.93	1.53			<0.06	mg/kg	TM4/PM8
Chrysene #	0.93	-	0.04	<0.02	0.46	0.07	3.66	1.47			<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	1.41	-	<0.07	<0.07	0.46	<0.07	3.86	1.74			<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.85	-	<0.04	<0.04	0.39	<0.04	2.94	1.30			<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.60	-	<0.04	<0.04	0.19	<0.04	1.44	0.69			<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	0.17	-	<0.04	<0.04	<0.04	<0.04	0.23	0.16			<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.50	-	<0.04	<0.04	0.18	<0.04	1.37	0.60			<0.04	mg/kg	TM4/PM8
PAH 16 Total	9.9	-	2.7	<0.6	10.0	<0.6	87.3	28.2			<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	1.02	-	<0.05	<0.05	0.33	<0.05	2.78	1.25			<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.39	-	<0.02	<0.02	0.13	<0.02	1.08	0.49			<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	98	-	96	102	97	93	99	112			<0	%	TM4/PM8
Methyl Tertiary Butyl Ether #	<0.002	-	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002			<0.002	mg/kg	TM15/PM10
Benzene #	0.016	-	0.055	0.011	0.109	0.019	0.244	0.112			<0.003	mg/kg	TM15/PM10
Toluene #	0.008	-	0.020	0.009	0.007	0.009	0.014	0.014			<0.003	mg/kg	TM15/PM10
Ethylbenzene #	0.007	-	2.828	0.010	0.028	0.006	0.111	0.023			<0.003	mg/kg	TM15/PM10
p/m-Xylene #	0.011	-	1.463	0.015	0.069	0.013	7.257**	0.075			<0.006	mg/kg	TM15/PM10
o-Xylene #	0.005	-	0.840	0.006	0.028	0.006	0.131	0.025			<0.003	mg/kg	TM15/PM10
Surrogate Recovery Toluene D8	125	-	130	141	87	137	107	89			<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	119	-	124	123	70	124	102	72			<0	%	TM15/PM10
EPH (C8-C40) #	119	-	37	<30	2829	<30	7052	3634			<30	mg/kg	TM5/PM8

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4457

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	16-21	22-24	25-27			Please see attached notes for all abbreviations and acronyms		
Sample ID	01BH01080513501.9-2.0	02BH020805135020.2-1	03BH03080513506.4-6.5	04BH040805135018.4-18.5	05BH05080513502.5-2.7	06BH06080513501.9-2.0	07BH07080513503.5-3.7	08BH080513503.5-3.7					
Depth	1.9-2.0	2.0-2.1	6.4-6.5	19.4-19.5	2.5-2.7	1.9-2.0	3.5-3.7	2.5-2.7					
COC No / misc							HIGH PID						
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	08/05/2013	08/05/2013	08/05/2013	09/05/2013	09/05/2013	09/05/2013	09/05/2013	09/05/2013					
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil					
Batch Number	1	1	1	1	1	1	1	1					
Date of Receipt	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013			LOD	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	-	-	-	-	-	-	NDP	-			<0.1	mg/kg	TM36/PM12
>C6-C8 #	-	-	-	-	-	-	NDP	-			<0.1	mg/kg	TM36/PM12
>C8-C10	-	-	-	-	-	-	NDP	-			<0.1	mg/kg	TM36/PM12
>C10-C12 #	-	-	-	-	-	-	116.1	-			<0.2	mg/kg	TM5/PM16
>C12-C16 #	-	-	-	-	-	-	1032	-			<4	mg/kg	TM5/PM16
>C16-C21 #	-	-	-	-	-	-	880	-			<7	mg/kg	TM5/PM16
>C21-C35 #	-	-	-	-	-	-	302	-			<7	mg/kg	TM5/PM16
Total aliphatics C5-35	-	-	-	-	-	-	NDP	-			<19	mg/kg	TM5/PM16/PM2/PM15
Total aliphatics C5-C12	-	-	-	-	-	-	NDP	-			<0.5	mg/kg	TM5/PM16/PM2/PM15
Total aliphatics >C12-C35 #	-	-	-	-	-	-	2214	-			<18	mg/kg	TM5/PM16/PM2/PM15
Aromatics													
>C5-EC7	-	-	-	-	-	-	NDP	-			<0.1	mg/kg	TM36/PM12
>EC7-EC8	-	-	-	-	-	-	NDP	-			<0.1	mg/kg	TM36/PM12
>EC8-EC10 #	-	-	-	-	-	-	NDP	-			<0.1	mg/kg	TM36/PM12
>EC10-EC12 #	-	-	-	-	-	-	30.7	-			<0.2	mg/kg	TM5/PM16
>EC12-EC16 #	-	-	-	-	-	-	320	-			<4	mg/kg	TM5/PM16
>EC16-EC21 #	-	-	-	-	-	-	458	-			<7	mg/kg	TM5/PM16
>EC21-EC35 #	-	-	-	-	-	-	820	-			<7	mg/kg	TM5/PM16
Total aromatics C5-35	-	-	-	-	-	-	NDP	-			<19	mg/kg	TM5/PM16/PM2/PM15
Total aromatics C5-C12	-	-	-	-	-	-	NDP	-			<0.5	mg/kg	TM5/PM16/PM2/PM15
Total aromatics >EC12-EC35 #	-	-	-	-	-	-	1598	-			<18	mg/kg	TM5/PM16/PM2/PM15
Total aliphatics and aromatics(C5-35)	-	-	-	-	-	-	NDP	-			<38	mg/kg	TM5/PM16/PM2/PM15
Resorcinol	<0.01	-	<0.01	<0.01	<0.10	<0.01	<0.10	<0.20			<0.01	mg/kg	TM26/PM21
Catechol	<0.01	-	<0.01	<0.01	<0.10	<0.01	<0.10	<0.20			<0.01	mg/kg	TM26/PM21
Phenol #	<0.01	-	<0.01	<0.01	<0.10	<0.01	<0.10	<0.20			<0.01	mg/kg	TM26/PM21
m/p-cresol #	<0.02	-	<0.02	<0.02	<0.20	<0.02	<0.20	<0.40			<0.02	mg/kg	TM26/PM21
o-cresol #	<0.01	-	<0.01	<0.01	<0.10	<0.01	<0.10	<0.20			<0.01	mg/kg	TM26/PM21
Total cresols #	<0.03	-	<0.03	<0.03	<0.30	<0.03	<0.30	<0.60			<0.03	mg/kg	TM26/PM21
Xylenols #	<0.06	-	<0.06	<0.06	<0.60	<0.06	<0.60	<1.20			<0.06	mg/kg	TM26/PM21
1-naphthol	<0.01	-	<0.01	<0.01	<0.10	<0.01	<0.10	<0.20			<0.01	mg/kg	TM26/PM21
2,3,5-trimethyl phenol #	<0.01	-	<0.01	<0.01	<0.10	<0.01	<0.10	<0.20			<0.01	mg/kg	TM26/PM21
2-isopropylphenol #	<0.01	-	<0.01	<0.01	<0.10	<0.01	<0.10	<0.20			<0.01	mg/kg	TM26/PM21
Total Speciated Phenols HPLC	<0.15	-	<0.15	<0.15	<1.50	<0.15	<1.50	<3.00			<0.15	mg/kg	TM26/PM21
Natural Moisture Content	14.7	-	24.1	24.8	76.4	43.8	5.7	77.7			<0.1	%	PM4/PM0
Stone Content >= 10mm	28.6	-	<0.1	<0.1	0.1	<0.1	46.4	<0.1			<0.1	%	PM4/PM0
Ammoniacal Nitrogen as NH4 Chloride #	64.2 ⁺⁺	-	4.7	1.0	7.4	<0.6	<0.6	8.0			<0.6	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	8	32	51	55	783	21	27	511			<2	mg/kg	TM38/PM20
	0.0670	-	0.1214	0.1292	1.3927	0.5256	0.0255	1.2056			<0.0015	g/l	TM38/PM20

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4457

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

Please see attached notes for all abbreviations and acronyms

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4457

Report : NRA Leachate

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

Please see attached notes for all abbreviations and acronyms

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4457

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

Please see attached notes for all abbreviations and acronyms

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/75	05/75	05/75	05/75	05/75	Method No.
J E QC Sample No.	2	3	4	5	6	7	8	9	
QC Sample ID	QC 2	QC 3	QC 4	QC 5	QC 6	QC 7	QC 8	QC 9	
Arsenic	-	-	-	-	-	-	-	-	TM30/PM15
Barium	-	-	-	-	-	-	-	-	TM30/PM15
Cadmium	-	-	-	-	-	-	-	-	TM30/PM15
Chromium	-	-	-	-	-	-	-	-	TM30/PM15
Cobalt	-	-	-	-	-	-	-	-	TM30/PM15
Copper	-	-	-	-	-	-	-	-	TM30/PM15
Lead	-	-	-	-	-	-	-	-	TM30/PM15
Manganese	-	-	-	-	-	-	-	-	TM30/PM15
Mercury	-	-	-	-	-	-	-	-	TM30/PM15
Molybdenum	-	-	-	-	-	-	-	-	TM30/PM15
Nickel	-	-	-	-	-	-	-	-	TM30/PM15
Selenium	-	-	-	-	-	-	-	-	TM30/PM15
Total Sulphate	-	-	-	-	-	-	-	-	TM50/PM15
Water Soluble Boron	-	-	-	-	-	-	-	-	TM74/PM32
Zinc	-	-	-	-	-	-	-	-	TM30/PM15
PAH MS									
Naphthalene	-	-	-	-	-	-	-	-	TM4/PM8
Acenaphthylene	-	-	-	-	-	-	-	-	TM4/PM8
Acenaphthene	-	-	-	-	-	-	-	-	TM4/PM8
Fluorene	-	-	-	-	-	-	-	-	TM4/PM8
Phenanthrene	-	-	-	-	-	-	-	-	TM4/PM8
Anthracene	-	-	-	-	-	-	-	-	TM4/PM8
Fluoranthene	-	-	-	-	-	-	-	-	TM4/PM8
Pyrene	-	-	-	-	-	-	-	-	TM4/PM8
Benzo(a)anthracene	-	-	-	-	-	-	-	-	TM4/PM8
Chrysene	-	-	-	-	-	-	-	-	TM4/PM8
Benzo(bk)fluoranthene	-	-	-	-	-	-	-	-	TM4/PM8
Benzo(a)pyrene	-	-	-	-	-	-	-	-	TM4/PM8
Indeno(123cd)pyrene	-	-	-	-	-	-	-	-	TM4/PM8
Dibenzo(ah)anthracene	-	-	-	-	-	-	-	-	TM4/PM8
Benzo(ghi)perylene	-	-	-	-	-	-	-	-	TM4/PM8

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/75	05/75	05/75	05/75	05/75	
J E QC Sample No.	2	3	4	5	6	7	8	9	Method No.
QC Sample ID	QC 2	QC 3	QC 4	QC 5	QC 6	QC 7	QC 8	QC 9	
VOC MS									
Methyl Tertiary Butyl Ether	-	93.51 67.20 : 127.38	-	-	-	-	-	-	TM15/PM10
Chloromethane	-	76.86 55.35 : 149.79	-	-	-	-	-	-	TM15/PM10
Chloroethane	-	85.92 68.33 : 129.58	-	-	-	-	-	-	TM15/PM10
Trichlorofluoromethane	-	105.22 70.90 : 130.87	-	-	-	-	-	-	TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	96.21 71.27 : 127.12	-	-	-	-	-	-	TM15/PM10
Dichloromethane (DCM)	-	105.20 69.02 : 134.42	-	-	-	-	-	-	TM15/PM10
trans-1-2-Dichloroethene	-	96.45 73.71 : 123.12	-	-	-	-	-	-	TM15/PM10
1,1-Dichloroethane	-	103.42 74.45 : 123.41	-	-	-	-	-	-	TM15/PM10
cis-1-2-Dichloroethene	-	101.20 70.38 : 128.61	-	-	-	-	-	-	TM15/PM10
2,2-Dichloropropane	-	75.07 74.77 : 123.21	-	-	-	-	-	-	TM15/PM10
Bromochloromethane	-	115.84 68.96 : 136.21	-	-	-	-	-	-	TM15/PM10
Chloroform	-	117.92 74.99 : 128.23	-	-	-	-	-	-	TM15/PM10
1,1,1-Trichloroethane	-	104.36 74.22 : 125.57	-	-	-	-	-	-	TM15/PM10
1,1-Dichloropropene	-	102.86 74.54 : 123.07	-	-	-	-	-	-	TM15/PM10
Carbon tetrachloride	-	104.49 71.51 : 130.30	-	-	-	-	-	-	TM15/PM10
1,2-Dichloroethane	-	121.14 69.73 : 139.62	-	-	-	-	-	-	TM15/PM10
Benzene	-	104.26 75.56 : 125.89	-	-	-	-	-	-	TM15/PM10
Trichloroethene (TCE)	-	107.59 72.32 : 123.87	-	-	-	-	-	-	TM15/PM10
1,2-Dichloropropane	-	107.36 74.83 : 125.63	-	-	-	-	-	-	TM15/PM10
Dibromomethane	-	124.05 71.85 : 134.63	-	-	-	-	-	-	TM15/PM10
Bromodichloromethane	-	103.25 72.50 : 130.62	-	-	-	-	-	-	TM15/PM10
Toluene	-	107.65 75.41 : 123.26	-	-	-	-	-	-	TM15/PM10
1,1,2-Trichloroethane	-	126.64 70.81 : 135.35	-	-	-	-	-	-	TM15/PM10
Tetrachloroethene (PCE)	-	110.32 69.58 : 129.59	-	-	-	-	-	-	TM15/PM10
1,3-Dichloropropane	-	119.47 72.72 : 132.84	-	-	-	-	-	-	TM15/PM10
Dibromochloromethane	-	100.34 68.58 : 137.32	-	-	-	-	-	-	TM15/PM10
1,2-Dibromoethane	-	114.39 69.38 : 133.93	-	-	-	-	-	-	TM15/PM10
Chlorobenzene	-	109.21 77.21 : 121.35	-	-	-	-	-	-	TM15/PM10
1,1,1,2-Tetrachloroethane	-	113.80 74.33 : 125.85	-	-	-	-	-	-	TM15/PM10
Ethylbenzene	-	104.15 74.10 : 120.27	-	-	-	-	-	-	TM15/PM10
p/m-Xylene	-	106.11 75.02 : 121.79	-	-	-	-	-	-	TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/75	05/75	05/75	05/75	05/75	Method No.
J E QC Sample No.	2	3	4	5	6	7	8	9	
QC Sample ID	QC 2	QC 3	QC 4	QC 5	QC 6	QC 7	QC 8	QC 9	
GRO (>C4-C12)	-	-	-	-	-	-	-	-	TM36/PM12
MTBE	-	-	-	-	-	-	-	-	TM36/PM12
Benzene	-	-	-	-	-	-	-	-	TM36/PM12
Toluene	-	-	-	-	-	-	-	-	TM36/PM12
Ethylbenzene	-	-	-	-	-	-	-	-	TM36/PM12
m/p-Xylene	-	-	-	-	-	-	-	-	TM36/PM12
o-Xylene	-	-	-	-	-	-	-	-	TM36/PM12
>C5-C10	-	-	-	-	-	-	-	-	TM36/PM12
Phenol	-	-	-	64.96 48 : 114	-	94.28 48 : 114	-	-	TM26/PM21
m/p-cresol	-	-	-	65.02 52 : 113	-	100.13 52 : 113	-	-	TM26/PM21
o-cresol	-	-	-	60.95 33 : 131	-	93.07 33 : 131	-	-	TM26/PM21
Total Cresols	-	-	-	63.66 48 : 116	-	97.78 48 : 116	-	-	TM26/PM21
Xylenols	-	-	-	74.97 47 : 119	-	99.05 47 : 119	-	-	TM26/PM21
2,3,5-trimethyl phenol	-	-	-	66.01 41 : 128	-	107.38 41 : 128	-	-	TM26/PM21
2-isopropylphenol	-	-	-	60.18 32 : 128	-	102.38 32 : 128	-	-	TM26/PM21
Total, Free & Complex Cyanide	-	-	-	-	-	-	-	-	TM89/PM45
Total Organic Carbon	-	-	-	-	82.6 75 : 94	-	87.0 75 : 94	87.0 75 : 94	TM21/PM24
Loss on Ignition	102.6 77 : 115	94.2 77 : 115	-	-	-	-	-	-	TM22/PM0
pH (% recovery)	-	-	100.55 86 : 111	-	-	-	-	-	TM73/PM11

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Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/75	05/75	05/75	05/75	05/75	Method No.
J E QC Sample No.	11	13	14	15	16	18	20	32	
QC Sample ID	QC 11	QC 13	QC 14	QC 15	QC 16	QC 18	QC 20	QC 32	
Arsenic	-	-	-	-	-	-	-	113.75 102.50 : 122.34	TM30/PM15
Barium	-	-	-	-	-	-	-	94.41 81.16 : 108.39	TM30/PM15
Cadmium	-	-	-	-	-	-	-	104.35 93.79 : 114.29	TM30/PM15
Chromium	-	-	-	-	-	-	-	89.51 79.03 : 103.82	TM30/PM15
Cobalt	-	-	-	-	-	-	-	93.26 85.19 : 108.96	TM30/PM15
Copper	-	-	-	-	-	-	-	99.75 89.43 : 110.92	TM30/PM15
Lead	-	-	-	-	-	-	-	99.42 81.59 : 110.09	TM30/PM15
Manganese	-	-	-	-	-	-	-	106.85 89.45 : 118.85	TM30/PM15
Mercury	-	-	-	-	-	-	-	101.509 74.09 : 114.34	TM30/PM15
Molybdenum	-	-	-	-	-	-	-	-	TM30/PM15
Nickel	-	-	-	-	-	-	-	93.07 84.70 : 107.31	TM30/PM15
Selenium	-	-	-	-	-	-	-	-	TM30/PM15
Total Sulphate	-	-	-	-	-	94.09 76 : 124	120.80 76 : 124	-	TM50/PM15
Water Soluble Boron	-	-	-	-	106.32 81.58 : 118.42	-	95.79 81.58 : 118.42	-	TM74/PM32
Zinc	-	-	-	-	-	-	-	100.30 85.78 : 121.17	TM30/PM15
PAH MS									
Naphthalene	-	-	-	-	-	105.88 85.13 : 125.25	102.63 85.13 : 125.25	-	TM4/PM8
Acenaphthylene	-	-	-	-	-	103.00 82.00 : 126.50	101.63 82.00 : 126.50	-	TM4/PM8
Acenaphthene	-	-	-	-	-	101.63 81.88 : 125.75	101.38 81.88 : 125.75	-	TM4/PM8
Fluorene	-	-	-	-	-	104.25 81.13 : 126.63	105.88 81.13 : 126.63	-	TM4/PM8
Phenanthrene	-	-	-	-	-	106.25 82.00 : 126.13	99.88 82.00 : 126.13	-	TM4/PM8
Anthracene	-	-	-	-	-	105.63 80.88 : 121.63	100.88 80.88 : 121.63	-	TM4/PM8
Fluoranthene	-	-	-	-	-	106.00 83.13 : 126.88	100.50 83.13 : 126.88	-	TM4/PM8
Pyrene	-	-	-	-	-	105.00 81.13 : 127.00	99.50 81.13 : 127.00	-	TM4/PM8
Benzo(a)anthracene	-	-	-	-	-	110.75 72.50 : 135.38	102.63 72.50 : 135.38	-	TM4/PM8
Chrysene	-	-	-	-	-	101.25 76.88 : 126.50	110.25 76.88 : 126.50	-	TM4/PM8
Benzo(bk)fluoranthene	-	-	-	-	-	107.50 79.63 : 130.13	98.88 79.63 : 130.13	-	TM4/PM8
Benzo(a)pyrene	-	-	-	-	-	107.75 81.75 : 125.50	99.38 81.75 : 125.50	-	TM4/PM8
Indeno(123cd)pyrene	-	-	-	-	-	103.50 79.25 : 125.75	92.63 79.25 : 125.75	-	TM4/PM8
Dibenzo(ah)anthracene	-	-	-	-	-	106.38 78.38 : 129.75	92.63 78.38 : 129.75	-	TM4/PM8
Benzo(ghi)perylene	-	-	-	-	-	102.63 83.00 : 125.00	97.75 83.00 : 125.00	-	TM4/PM8

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/75	05/75	05/75	05/75	05/75	Method No.
J E QC Sample No.	11	13	14	15	16	18	20	32	
QC Sample ID	QC 11	QC 13	QC 14	QC 15	QC 16	QC 18	QC 20	QC 32	
VOC MS									
Methyl Tertiary Butyl Ether	-	-	-	-	-	-	-	-	TM15/PM10
Chloromethane	-	-	-	-	-	-	-	-	TM15/PM10
Chloroethane	-	-	-	-	-	-	-	-	TM15/PM10
Trichlorofluoromethane	-	-	-	-	-	-	-	-	TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	-	-	-	-	-	-	-	TM15/PM10
Dichloromethane (DCM)	-	-	-	-	-	-	-	-	TM15/PM10
trans-1-2-Dichloroethene	-	-	-	-	-	-	-	-	TM15/PM10
1,1-Dichloroethane	-	-	-	-	-	-	-	-	TM15/PM10
cis-1-2-Dichloroethene	-	-	-	-	-	-	-	-	TM15/PM10
2,2-Dichloropropane	-	-	-	-	-	-	-	-	TM15/PM10
Bromochloromethane	-	-	-	-	-	-	-	-	TM15/PM10
Chloroform	-	-	-	-	-	-	-	-	TM15/PM10
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	TM15/PM10
1,1-Dichloropropene	-	-	-	-	-	-	-	-	TM15/PM10
Carbon tetrachloride	-	-	-	-	-	-	-	-	TM15/PM10
1,2-Dichloroethane	-	-	-	-	-	-	-	-	TM15/PM10
Benzene	-	-	-	-	-	-	-	-	TM15/PM10
Trichloroethene (TCE)	-	-	-	-	-	-	-	-	TM15/PM10
1,2-Dichloropropane	-	-	-	-	-	-	-	-	TM15/PM10
Dibromomethane	-	-	-	-	-	-	-	-	TM15/PM10
Bromodichloromethane	-	-	-	-	-	-	-	-	TM15/PM10
Toluene	-	-	-	-	-	-	-	-	TM15/PM10
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	TM15/PM10
Tetrachloroethene (PCE)	-	-	-	-	-	-	-	-	TM15/PM10
1,3-Dichloropropane	-	-	-	-	-	-	-	-	TM15/PM10
Dibromochloromethane	-	-	-	-	-	-	-	-	TM15/PM10
1,2-Dibromoethane	-	-	-	-	-	-	-	-	TM15/PM10
Chlorobenzene	-	-	-	-	-	-	-	-	TM15/PM10
1,1,1,2-Tetrachloroethane	-	-	-	-	-	-	-	-	TM15/PM10
Ethylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
p/m-Xylene	-	-	-	-	-	-	-	-	TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/75	05/75	05/75	05/75	05/75
J E QC Sample No.	11	13	14	15	16	18	20	32
QC Sample ID	QC 11	QC 13	QC 14	QC 15	QC 16	QC 18	QC 20	QC 32
GRO (>C4-C12)	-	-	83 53 : 132	-	-	-	-	-
MTBE	-	95 65 : 132	-	-	-	-	-	-
Benzene	-	88 63 : 129	-	-	-	-	-	-
Toluene	-	85 60 : 131	-	-	-	-	-	-
Ethylbenzene	-	78 52 : 138	-	-	-	-	-	-
m/p-Xylene	-	83 50 : 140	-	-	-	-	-	-
o-Xylene	-	80 52 : 143	-	-	-	-	-	-
>C5-C10	-	-	73 56 : 133	-	-	-	-	-
Phenol	-	-	-	-	-	-	-	-
m/p-cresol	-	-	-	-	-	-	-	-
o-cresol	-	-	-	-	-	-	-	-
Total Cresols	-	-	-	-	-	-	-	-
Xylenols	-	-	-	-	-	-	-	-
2,3,5-trimethyl phenol	-	-	-	-	-	-	-	-
2-isopropylphenol	-	-	-	-	-	-	-	-
Total, Free & Complex Cyanide	-	-	-	-	109.70 68 : 127	-	-	-
Total Organic Carbon	-	-	-	-	-	-	-	-
Loss on Ignition	-	-	-	-	-	-	-	-
pH (% recovery)	-	-	-	-	-	-	-	-

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/76	05/76				
J E QC Sample No.	33	38	39	1	3				Method No.
QC Sample ID	QC 33	QC 38	QC 39	QC 1	QC 3				
Arsenic	-	112.28 102.50 : 122.34	-	-	-				TM30/PM15
Barium	-	87.10 81.16 : 108.39	-	-	-				TM30/PM15
Cadmium	-	104.35 93.79 : 114.29	-	-	-				TM30/PM15
Chromium	-	86.45 79.03 : 103.82	-	-	-				TM30/PM15
Cobalt	-	93.48 85.19 : 108.96	-	-	-				TM30/PM15
Copper	-	94.67 89.43 : 110.92	-	-	-				TM30/PM15
Lead	-	98.04 81.59 : 110.09	-	-	-				TM30/PM15
Manganese	-	100.89 89.45 : 118.85	-	-	-				TM30/PM15
Mercury	-	106.164 74.09 : 114.34	-	-	-				TM30/PM15
Molybdenum	113.97 106.56 : 132.57	-	113.53 106.56 : 132.57	-	-				TM30/PM15
Nickel	-	92.31 84.70 : 107.31	-	-	-				TM30/PM15
Selenium	100.87 90.63 : 132.45	-	100.00 90.63 : 132.45	-	-				TM30/PM15
Total Sulphate	-	-	-	-	-				TM50/PM15
Water Soluble Boron	-	-	-	-	-				TM74/PM32
Zinc	-	100.18 85.78 : 121.17	-	-	-				TM30/PM15
PAH MS									
Naphthalene	-	-	-	-	-				TM4/PM8
Acenaphthylene	-	-	-	-	-				TM4/PM8
Acenaphthene	-	-	-	-	-				TM4/PM8
Fluorene	-	-	-	-	-				TM4/PM8
Phenanthrene	-	-	-	-	-				TM4/PM8
Anthracene	-	-	-	-	-				TM4/PM8
Fluoranthene	-	-	-	-	-				TM4/PM8
Pyrene	-	-	-	-	-				TM4/PM8
Benzo(a)anthracene	-	-	-	-	-				TM4/PM8
Chrysene	-	-	-	-	-				TM4/PM8
Benzo(bk)fluoranthene	-	-	-	-	-				TM4/PM8
Benzo(a)pyrene	-	-	-	-	-				TM4/PM8
Indeno(123cd)pyrene	-	-	-	-	-				TM4/PM8
Dibenzo(ah)anthracene	-	-	-	-	-				TM4/PM8
Benzo(ghi)perylene	-	-	-	-	-				TM4/PM8

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/76	05/76				
J E QC Sample No.	33	38	39	1	3				Method No.
QC Sample ID	QC 33	QC 38	QC 39	QC 1	QC 3				
VOC MS									
Methyl Tertiary Butyl Ether	-	-	-	-	-				TM15/PM10
Chloromethane	-	-	-	-	-				TM15/PM10
Chloroethane	-	-	-	-	-				TM15/PM10
Trichlorofluoromethane	-	-	-	-	-				TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	-	-	-	-				TM15/PM10
Dichloromethane (DCM)	-	-	-	-	-				TM15/PM10
trans-1-2-Dichloroethene	-	-	-	-	-				TM15/PM10
1,1-Dichloroethane	-	-	-	-	-				TM15/PM10
cis-1-2-Dichloroethene	-	-	-	-	-				TM15/PM10
2,2-Dichloropropane	-	-	-	-	-				TM15/PM10
Bromochloromethane	-	-	-	-	-				TM15/PM10
Chloroform	-	-	-	-	-				TM15/PM10
1,1,1-Trichloroethane	-	-	-	-	-				TM15/PM10
1,1-Dichloropropene	-	-	-	-	-				TM15/PM10
Carbon tetrachloride	-	-	-	-	-				TM15/PM10
1,2-Dichloroethane	-	-	-	-	-				TM15/PM10
Benzene	-	-	-	-	-				TM15/PM10
Trichloroethene (TCE)	-	-	-	-	-				TM15/PM10
1,2-Dichloropropane	-	-	-	-	-				TM15/PM10
Dibromomethane	-	-	-	-	-				TM15/PM10
Bromodichloromethane	-	-	-	-	-				TM15/PM10
Toluene	-	-	-	-	-				TM15/PM10
1,1,2-Trichloroethane	-	-	-	-	-				TM15/PM10
Tetrachloroethene (PCE)	-	-	-	-	-				TM15/PM10
1,3-Dichloropropane	-	-	-	-	-				TM15/PM10
Dibromochloromethane	-	-	-	-	-				TM15/PM10
1,2-Dibromoethane	-	-	-	-	-				TM15/PM10
Chlorobenzene	-	-	-	-	-				TM15/PM10
1,1,1,2-Tetrachloroethane	-	-	-	-	-				TM15/PM10
Ethylbenzene	-	-	-	-	-				TM15/PM10
p/m-Xylene	-	-	-	-	-				TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Solid
Type: AQC

J E QC Job No.	05/75	05/75	05/75	05/76	05/76				
J E QC Sample No.	33	38	39	1	3				Method No.
QC Sample ID	QC 33	QC 38	QC 39	QC 1	QC 3				
GRO (>C4-C12)	-	-	-	-	-				TM36/PM12
MTBE	-	-	-	-	-				TM36/PM12
Benzene	-	-	-	-	-				TM36/PM12
Toluene	-	-	-	-	-				TM36/PM12
Ethylbenzene	-	-	-	-	-				TM36/PM12
m/p-Xylene	-	-	-	-	-				TM36/PM12
o-Xylene	-	-	-	-	-				TM36/PM12
>C5-C10	-	-	-	-	-				TM36/PM12
Phenol	-	-	-	-	-				TM26/PM21
m/p-cresol	-	-	-	-	-				TM26/PM21
o-cresol	-	-	-	-	-				TM26/PM21
Total Cresols	-	-	-	-	-				TM26/PM21
Xylenols	-	-	-	-	-				TM26/PM21
2,3,5-trimethyl phenol	-	-	-	-	-				TM26/PM21
2-isopropylphenol	-	-	-	-	-				TM26/PM21
Total, Free & Complex Cyanide	-	-	-	-	-				TM89/PM45
Total Organic Carbon	-	-	-	91.3 75 : 94	-				TM21/PM24
Loss on Ignition	-	-	-	-	74.6 77 : 115				TM22/PM0
pH (% recovery)	-	-	-	-	-				TM73/PM11

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/75	06/75	06/75	06/75	06/75	06/75	06/75	06/75
J E QC Sample No.	16	20	21	23	25	35	37	38
QC Sample ID	QC 16	QC 20	QC 21	QC 23	QC 25	QC 35	QC 37	QC 38
PAH MS								
Naphthalene	-	-	-	-	94.57 44.62 : 117.72	-	-	-
Acenaphthylene	-	-	-	-	82.04 42.66 : 120.50	-	-	-
Acenaphthene	-	-	-	-	86.56 44.52 : 117.81	-	-	-
Fluorene	-	-	-	-	82.98 42.81 : 117.49	-	-	-
Phenanthrene	-	-	-	-	84.05 46.13 : 118.70	-	-	-
Anthracene	-	-	-	-	84.38 46.61 : 115.64	-	-	-
Fluoranthene	-	-	-	-	79.15 42.64 : 115.97	-	-	-
Pyrene	-	-	-	-	77.07 41.94 : 112.90	-	-	-
Benzo(a)anthracene	-	-	-	-	91.88 44.56 : 123.39	-	-	-
Chrysene	-	-	-	-	91.22 44.52 : 117.61	-	-	-
Benzo(bk)fluoranthene	-	-	-	-	89.93 36.44 : 125.67	-	-	-
Benzo(a)pyrene	-	-	-	-	90.47 37.09 : 126.04	-	-	-
Indeno(123cd)pyrene	-	-	-	-	94.40 39.01 : 123.20	-	-	-
Dibenzo(ah)anthracene	-	-	-	-	87.07 21.13 : 95.42	-	-	-
Benzo(ghi)perylene	-	-	-	-	74.01 34.05 : 112.95	-	-	-

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/75	06/75	06/75	06/75	06/75	06/75	06/75	06/75	
J E QC Sample No.	16	20	21	23	25	35	37	38	Method No.
QC Sample ID	QC 16	QC 20	QC 21	QC 23	QC 25	QC 35	QC 37	QC 38	
VOC MS									
Methyl Tertiary Butyl Ether	-	-	-	-	-	92.98 57.73 : 140.00	-	-	TM15/PM10
Chloromethane	-	-	-	-	-	87.50 54.23 : 144.84	-	-	TM15/PM10
Chloroethane	-	-	-	-	-	95.96 67.36 : 124.26	-	-	TM15/PM10
Trichlorofluoromethane	-	-	-	-	-	89.80 74.07 : 123.40	-	-	TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	-	-	-	-	89.06 68.69 : 120.31	-	-	TM15/PM10
Dichloromethane (DCM)	-	-	-	-	-	93.82 70.62 : 123.55	-	-	TM15/PM10
trans-1-2-Dichloroethene	-	-	-	-	-	90.48 71.16 : 118.34	-	-	TM15/PM10
1,1-Dichloroethane	-	-	-	-	-	90.12 71.44 : 119.49	-	-	TM15/PM10
cis-1-2-Dichloroethene	-	-	-	-	-	90.63 72.56 : 116.04	-	-	TM15/PM10
Bromochloromethane	-	-	-	-	-	91.18 75.34 : 121.37	-	-	TM15/PM10
Chloroform	-	-	-	-	-	91.09 76.39 : 118.08	-	-	TM15/PM10
1,1,1-Trichloroethane	-	-	-	-	-	84.11 75.95 : 115.86	-	-	TM15/PM10
1,1-Dichloropropene	-	-	-	-	-	90.14 71.30 : 116.65	-	-	TM15/PM10
Carbon tetrachloride	-	-	-	-	-	86.66 70.98 : 126.82	-	-	TM15/PM10
1,2-Dichloroethane	-	-	-	-	-	94.95 76.77 : 121.51	-	-	TM15/PM10
Benzene	-	-	-	-	-	99.21 75.91 : 116.02	-	-	TM15/PM10
Trichloroethene (TCE)	-	-	-	-	-	92.33 76.71 : 122.61	-	-	TM15/PM10
1,2-Dichloropropane	-	-	-	-	-	92.51 71.76 : 117.59	-	-	TM15/PM10
Dibromomethane	-	-	-	-	-	94.46 75.19 : 128.88	-	-	TM15/PM10
Bromodichloromethane	-	-	-	-	-	90.59 76.25 : 118.04	-	-	TM15/PM10
Toluene	-	-	-	-	-	99.88 75.39 : 115.14	-	-	TM15/PM10
1,1,2-Trichloroethane	-	-	-	-	-	98.38 75.70 : 122.00	-	-	TM15/PM10
Tetrachloroethene (PCE)	-	-	-	-	-	91.75 75.03 : 122.30	-	-	TM15/PM10
1,3-Dichloropropane	-	-	-	-	-	97.32 72.82 : 123.58	-	-	TM15/PM10
Dibromochloromethane	-	-	-	-	-	92.08 72.49 : 131.11	-	-	TM15/PM10
1,2-Dibromoethane	-	-	-	-	-	95.87 74.54 : 123.25	-	-	TM15/PM10
Chlorobenzene	-	-	-	-	-	99.73 79.23 : 115.18	-	-	TM15/PM10
1,1,1,2-Tetrachloroethane	-	-	-	-	-	95.20 80.58 : 124.35	-	-	TM15/PM10
Ethylbenzene	-	-	-	-	-	112.63 75.46 : 116.33	-	-	TM15/PM10
p/m-Xylene	-	-	-	-	-	108.40 76.09 : 117.11	-	-	TM15/PM10
o-Xylene	-	-	-	-	-	109.47 78.91 : 118.20	-	-	TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/75	06/75	06/75	06/75	06/75	06/75	06/75	06/75	
J E QC Sample No.	16	20	21	23	25	35	37	38	Method No.
QC Sample ID	QC 16	QC 20	QC 21	QC 23	QC 25	QC 35	QC 37	QC 38	
Styrene	-	-	-	-	-	102.95 61.59 : 150.44	-	-	TM15/PM15
Bromoform	-	-	-	-	-	101.63 72.99 : 135.07	-	-	TM15/PM15
Isopropylbenzene	-	-	-	-	-	101.98 77.50 : 120.59	-	-	TM15/PM15
Bromobenzene	-	-	-	-	-	112.40 75.14 : 126.30	-	-	TM15/PM15
1,2,3-Trichloropropane	-	-	-	-	-	112.10 81.43 : 131.79	-	-	TM15/PM15
Propylbenzene	-	-	-	-	-	101.03 75.22 : 121.68	-	-	TM15/PM15
2-Chlorotoluene	-	-	-	-	-	102.54 78.98 : 120.71	-	-	TM15/PM15
1,3,5-Trimethylbenzene	-	-	-	-	-	101.34 82.24 : 125.72	-	-	TM15/PM15
4-Chlorotoluene	-	-	-	-	-	117.12 76.18 : 124.56	-	-	TM15/PM15
tert-Butylbenzene	-	-	-	-	-	118.53 74.06 : 135.20	-	-	TM15/PM15
1,2,4-Trimethylbenzene	-	-	-	-	-	122.86 82.68 : 126.68	-	-	TM15/PM15
sec-Butylbenzene	-	-	-	-	-	113.30 81.02 : 128.81	-	-	TM15/PM15
4-Isopropyltoluene	-	-	-	-	-	121.13 80.46 : 133.00	-	-	TM15/PM15
1,3-Dichlorobenzene	-	-	-	-	-	111.71 85.94 : 126.45	-	-	TM15/PM15
1,4-Dichlorobenzene	-	-	-	-	-	117.91 87.88 : 129.22	-	-	TM15/PM15
n-Butylbenzene	-	-	-	-	-	116.96 75.29 : 137.17	-	-	TM15/PM15
1,2-Dichlorobenzene	-	-	-	-	-	129.29 91.99 : 133.66	-	-	TM15/PM15
EPH (C8-C40)	-	-	-	89.69 71 : 129	-	-	-	-	TM5/PM30
Total, Free & Complex Cyanide	107.3000 77.15 : 137.35	-	-	-	-	-	-	-	TM89/PM15
Ammoniacal Nitrogen as NH4 (High)	-	-	-	-	-	-	-	101.07 86 : 114	TM38/PM15
Ammoniacal Nitrogen as NH4 (Low)	-	-	-	-	-	-	98.00 84 : 134	-	TM38/PM15
Inorganic Carbon (50 mg/l)	-	104 93 : 114	-	-	-	-	-	-	TM60/PM15
Organic Carbon (50 mg/l)	-	102 90 : 109	-	-	-	-	-	-	TM60/PM15
Inorganic Carbon (150 mg/l)	-	-	103 90 : 110	-	-	-	-	-	TM60/PM15
Organic Carbon (150 mg/l)	-	-	99 88 : 105	-	-	-	-	-	TM60/PM15

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report Solid
Type: BLANK

[illegible]

Where analysis is blank corrected, blank data, although available, is not routinely supplied.

Client Name: Worley Parsons
Reference: 305008-00018 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report Liquid
Type: BLANK

[illegible]

Where analysis is blank corrected, blank data, although available, is not routinely supplied.

Jones Environmental Laboratory

Client Name: Worley Parsons

Reference: 305008-00018 51603-00

Location: TOTTENHAM MARSH

Contact: Philip Harrison

NDP Reason Report

Matrix : Solid

[illegible]

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 13/4457

SOILS

Please note we are only MCERTS accredited 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 we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

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.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and 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

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

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.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final 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.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
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 a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No 13/4457

Test Method No.	Description	Prep Method No. (if appropriate)	Description	UKAS	MCERTS (soils only)	Analysis done on As Received (AR) or Air Dried (AD)	Solid Results expressed on Dry/Wet basis
PM4	Moisture Content	PM0	No Preparation				
PM4	Moisture Content	PM0	No Preparation				WET
TM4	16 PAH by GC-MS, modified USEPA 8270	PM30	Magnetic stirrer extraction			AR	
TM4	16 PAH by GC-MS, modified USEPA 8270	PM30	Magnetic stirrer extraction			AR	WET
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	End Over End extraction			AR	DRY
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	End Over End extraction	Yes		AR	DRY
TM4	16 PAH by GC-MS, modified USEPA 8270	PM8	End Over End extraction			AR	
TM5	EPH by GC-FID, modified USEPA 8015	PM16	Aliphatic/Aromatic fractionation	Yes		AR	DRY
TM5	EPH by GC-FID, modified USEPA 8015	PM30	Magnetic stirrer extraction			AR	WET
TM5	EPH by GC-FID, modified USEPA 8015	PM8	End Over End extraction	Yes		AR	DRY
TM5/TM36	TPH CWG by GC-FID	PM12/PM16	CWG GC-FID			AR	DRY
TM5/TM36	TPH CWG by GC-FID	PM12/PM16	CWG GC-FID	Yes		AR	DRY
PM13	Soil Typing for MCERTS	PM0	No Preparation			AR	
TM15	VOC - Target by GC-MS, modified USEPA 8260	PM10	VOC GC-MS			AR	DRY
TM15	VOC - Target by GC-MS, modified USEPA 8260	PM10	VOC GC-MS	Yes		AR	DRY
TM15	VOC - Target by GC-MS, modified USEPA 8260	PM10	VOC GC-MS			AR	
TM15	VOC - Target by GC-MS, modified USEPA 8260	PM10	VOC GC-MS			AR	WET
TM21	TOC and TC by Combustion	PM24	Eltra preparation			AD	DRY
TM22	Loss on Ignition (LOI) - gravimetric	PM0	No Preparation	Yes		AD	DRY
TM26	Phenols by HPLC	PM0	No Preparation			AR	WET
TM26	Phenols by HPLC	PM21	Methanol : NaOH extraction			AR	DRY
TM26	Phenols by HPLC	PM21	Methanol : NaOH extraction	Yes		AR	DRY
TM27	SO ₄ ,Cl,NO ₃ ,NO ₂ ,F,PO ₄ by Dionex	PM0	No Preparation			AR	WET
TM30	Metals by ICP-OES	PM14	Metals by ICP (Waters)			AR	WET
TM30	Metals by ICP-OES	PM15	Aqua Regia extraction (Soils)	Yes		AD	DRY
TM36	GRO by Headspace GC-FID	PM12	GRO GC-FID			AR	DRY
TM36	GRO by Headspace GC-FID	PM12	GRO GC-FID	Yes		AR	DRY
TM38	SO ₄ ,Cl,NO ₃ ,NO ₂ ,F,PO ₄ , Amm N ₂ ,ThioCN, Hex Cr by Aquakem	PM0	No Preparation			AR	WET
TM38	SO ₄ ,Cl,NO ₃ ,NO ₂ ,F,PO ₄ , Amm N ₂ ,ThioCN, Hex Cr by Aquakem	PM20	1:2 soil to water extraction	Yes		AD	DRY
TM38	SO ₄ ,Cl,NO ₃ ,NO ₂ ,F,PO ₄ , Amm N ₂ ,ThioCN, Hex Cr by Aquakem	PM20	1:2 soil to water extraction			AR	DRY
TM50	Total Sulphate by ICP-OES	PM15	Aqua Regia extraction (Soils)	Yes		AD	DRY
TM60	TOC/DOC by NDIR	PM0	No Preparation			AR	WET
TM61	Mercury - low level CVAf	PM38	Mercury CVAf			AR	WET
TM73	pH in by Metrohm	PM0	No Preparation			AR	WET
TM73	pH in by Metrohm	PM11	1:2.5 soil/water extraction	Yes		AR	WET
TM74	Water Soluble Boron by ICP-OES	PM32	Preparation of soils for WSB	Yes		AD	DRY
TM76	Electrical Conductivity by Metrohm	PM0	No Preparation			AR	WET
TM89	Cyanide by FIA	PM0	No Preparation			AR	WET
TM89	Cyanide by FIA	PM45	Cyanide & Thiocyanate prep for soils			AR	DRY
TM89	Cyanide by FIA	PM45	Cyanide & Thiocyanate prep for soils	Yes		AR	DRY
TM106	Sulphide by CFA	PM0	No Preparation			AR	WET
TM107	Thiocyanate by CFA	PM0	No Preparation			AR	WET
TM107	Thiocyanate by CFA	PM45	Cyanide & Thiocyanate prep for soils			AR	DRY

JE Job No 13/4457

[illegible]

Worley Parsons - 2013

Summary of Chemical Analysis

Soil Samples

Sample ID					01BH2/10805 13S01.9-2.0	03BH2/3080513S 06.4-6.5	04BH2/40905 13S019.4- 19.5	05BH1/33004 13S04.2-4.3
Depth					1.9-2.0	6.4-6.5	19.4-19.5	4.2-4.3
Sample Type					Soil	Soil	Soil	Soil
Sampling Date					08/05/2013	08/05/2013	09/05/2013	30/04/2013
Test	LOD	Units	Method No.	Commercial GAC - SOM 6%				
Arsenic [#]	<0.5	mg/kg	TM30/PM15	640	17.3	8	24.8	16.7
Water Soluble Boron [#]	<0.1	mg/kg	TM30/PM15	240000	2	5.5	1.3	4.7
Cadmium [#]	<0.5	mg/kg	TM30/PM15	190	0.2	0.3	0.1	0.4
Chromium [#]	<1	mg/kg	TM30/PM15		17.8	39.5	38.2	38.6
Copper [#]	<5	mg/kg	TM30/PM15	68000	42	28	<1	15
Lead [#]	<0.1	mg/kg	TM30/PM15	2330	466	16	8	124
Mercury [#]	<0.7	mg/kg	TM30/PM15	1100	0.6	<0.1	<0.1	0.4
Nickel [#]	<1	mg/kg	TM30/PM15	980	21.2	38.1	17.3	33.5
Selenium [#]	<50	mg/kg	TM50/PM15	12000	<1	<1	<1	<1
Zinc [#]	<0.1	mg/kg	TM74/PM32	730000	143	86	69	124
Ph	<5	mg/kg	TM30/PM15	-	8.24	8.34	8.58	7.6
FOC	<0.001	None	TM21/PM24	-	-	-	<0.001	-
Total Sulphate [#]	<50	mg/kg	TM50/PM15	-	-	-	-	-
Natural Moisture Content	<0.1	%	PM4/PM0	-	14.7	24.1	24.8	33.6
Stone Content >= 10mm	<0.1	%	PM4/PM0	-	28.6	<0.1	<0.1	<0.1
Ammoniacal Nitrogen as NH4	<0.6	mg/kg	TM38/PM20	-	64.2**	4.7	1	17.9
Chloride [#]	<2	mg/kg	TM38/PM20	-	8	51	55	37
Sulphate as SO4 (2:1 Ext) [#]	<0.0015	g/l	TM38/PM20	-	0.067	0.1214	0.1292	0.1809
Free Cyanide	<0.5	mg/kg	TM89/PM45	85	<0.5	<0.5	<0.5	<0.5
Total Cyanide [#]	<0.5	mg/kg	TM89/PM45	-	<0.5	<0.5	<0.5	0.9
Complex Cyanide	<0.5	mg/kg	TM89/PM45	-	<0.5	<0.5	<0.5	0.9
Thiocyanate	<0.6	mg/kg	TM107/PM45	-	<0.6	1.6	1.1	2
EPH (C8-C10)	<30	mg/kg	TM5/PM8	-	119	37	<30	126
Benzene	<0.003	mg/kg	TM15/PM10	90	0.016	0.055	0.011	0.013
Ethylbenzene	<0.003	mg/kg	TM15/PM10	27000 (2840)	0.007	2.828	0.01	0.028
Toluene	<0.003	mg/kg	TM15/PM10	180000 (4360)	0.008	0.02	0.009	0.005
p/m-Xylene [#]	<0.006	mg/kg	TM15/PM10	-	-			0.035
o-Xylene [#]	<0.003	mg/kg	TM15/PM10	33000 [2620]	0.005	0.84	0.006	0.011
Naphthalene	<0.04	mg/kg	TM4/PM8	1100 [432]	0.32	2.25	<0.04	2
Acenaphthylene	<0.03	mg/kg	TM4/PM8	100000	0.15	0.1	<0.03	0.24
Acenaphthene	<0.05	mg/kg	TM4/PM8	100000	<0.05	<0.05	<0.05	0.16
Fluorene	<0.04	mg/kg	TM4/PM8	71000	0.09	0.05	<0.04	0.29
Phenanthrene	<0.03	mg/kg	TM4/PM8	23000	0.67	0.12	<0.03	0.88
Anthracene	<0.04	mg/kg	TM4/PM8	540000	0.19	<0.04	<0.04	0.32
Fluoranthene	<0.03	mg/kg	TM4/PM8	23000	1.75	0.05	<0.03	0.84
Pyrene	<0.03	mg/kg	TM4/PM8	54000	1.41	0.05	<0.03	0.94
Benzo(a)anthracene	<0.06	mg/kg	TM4/PM8	180	0.89	0.07	<0.06	0.51
Chrysene	<0.02	mg/kg	TM4/PM8	350	0.93	0.04	<0.02	0.73
Benzo(b)fluoranthene	<0.05	mg/kg	TM4/PM8	45	1.02	<0.05	<0.05	0.63
Benzo(k)fluoranthene	<0.02	mg/kg	TM4/PM8	1200	0.39	<0.02	<0.02	0.24
Benzo(a)pyrene	<0.04	mg/kg	TM4/PM8	36	0.85	<0.04	<0.04	0.57
Indeno(1,2,3- c,d)pyrene	<0.04	mg/kg	TM4/PM8	510	0.6	<0.04	<0.04	0.37
Dibenzo(a,h)anthracene	<0.04	mg/kg	TM4/PM8	3.6	0.17	<0.04	<0.04	0.08
Benzo(g,h,i)perylene	<0.04	mg/kg	TM4/PM8	4000	0.5	<0.04	<0.04	0.35
PAH - USEPA 16, Total	<0.6	mg/kg	TM4/PM8	-	9.9	2.7	<0.6	106
Resorcinol	<0.01	mg/kg	TM26/PM21	-	<0.01	<0.01	<0.01	<0.01
Catechol	<0.01	mg/kg	TM26/PM21	-	<0.01	<0.01	<0.01	<0.01
Phenol [#]	<0.01	mg/kg	TM26/PM21	1300 [34000]	<0.01	<0.01	<0.01	<0.01
m/p-cresol [#]	<0.02	mg/kg	TM26/PM21	-	<0.02	<0.02	<0.02	<0.02
o-cresol [#]	<0.01	mg/kg	TM26/PM21	-	<0.01	<0.01	<0.01	<0.01
Total cresols [#]	<0.03	mg/kg	TM26/PM21	180000 (73000)	<0.03	<0.03	<0.03	<0.03
Xylenols [#]	<0.06	mg/kg	TM26/PM21	-	<0.06	<0.06	<0.06	<0.06
1-naphthol	<0.01	mg/kg	TM26/PM21	-	<0.01	<0.01	<0.01	<0.01
2,3,5-trimethyl phenol [#]	<0.01	mg/kg	TM26/PM21	1300 [34000]	<0.01	<0.01	<0.01	<0.01
2-isopropylphenol [#]	<0.01	mg/kg	TM26/PM21	-	<0.01	<0.01	<0.01	<0.01
Total Speciated Phenols HPLC	<0.15	mg/kg	TM26/PM21	-	<0.15	<0.15	<0.15	<0.15
Methyl Tertiary Butyl Ether [#]	<0.002	mg/kg	TM15/PM10	-	<0.002	<0.002	<0.002	<0.002

F.1.2 Leachate Results

Summary of Chemical Analysis

Leachate Samples

Our Ref 18-29456

Client Ref PC187331

Contract Title Tottenham Substation GI

Test	Method	LOD	Units	Lab No				
				Sample ID	Depth	Other ID	Sample Type	
				Sampling Date	Sampling Time			
Preparation				UKDWS	EQS			
BS EN 12457 10:1	DETSC 1009*							
NRA Leachate Preparation	DETSC 1009*					Y	Y	Y
Metals								
Arsenic, Dissolved ug/l	DETSC 2306	0.16	ug/l	10	50	0.76	0.62	2
Barium, Dissolved ug/l	DETSC 2306	0.26	ug/l	100		3.3	10	1.9
Beryllium, Dissolved ug/l	DETSC 2306*	0.1	ug/l			< 0.1	< 0.1	< 0.1
Boron, Dissolved ug/l	DETSC 2306*	12	ug/l	1000	2000	16	28	< 12
Cadmium, Dissolved ug/l	DETSC 2306	0.03	ug/l	5	0.25	< 0.03	< 0.03	< 0.03
Chromium, Dissolved ug/l	DETSC 2306	0.25	ug/l	50	50	< 0.25	0.32	< 0.25
Copper, Dissolved ug/l	DETSC 2306	0.4	ug/l	2000	28	0.9	3.1	< 0.4
Iron, Dissolved ug/l	DETSC 2306	5.5	ug/l	200	100	57	44	6
Lead, Dissolved ug/l	DETSC 2306	0.09	ug/l	10	1.2	0.77	1.4	< 0.09
Mercury, Dissolved ug/l	DETSC 2306	0.01	ug/l	1	0.07	0.02	0.02	0.01
Nickel, Dissolved ug/l	DETSC 2306	0.5	ug/l	20	4	< 0.5	0.5	< 0.5
Selenium, Dissolved ug/l	DETSC 2306	0.25	ug/l	10		0.55	1.2	0.57
Vanadium, Dissolved ug/l	DETSC 2306	0.6	ug/l			< 0.6	< 0.6	< 0.6
Zinc, Dissolved ug/l	DETSC 2306	1.3	ug/l	5000	125	1.9	8.6	< 1.3
Inorganics								
pH	DETSC 2008				6 to 9	6.7	6.5	6.7
Sulphate as SO4 mg/l	DETSC 2055	0.1	mg/l			13	13	1.8
Sulphur as S, Total mg/l	DETSC 2320*	10	mg/l			< 10	< 10	< 10
Petroleum Hydrocarbons								
EPH (C10-C40) ug/l	DETSC 3311	10	ug/l			< 10	32	3700
PCBs								
PCB 28 + PCB 31 ug/l	DETSC 3402	0.3	ug/l			< 0.3	< 0.3	< 0.3
PCB 52 ug/l	DETSC 3402	0.2	ug/l			< 0.2	< 0.2	< 0.2
PCB 101 ug/l	DETSC 3402	0.3	ug/l			< 0.3	< 0.3	< 0.3
PCB 118 + PCB 123 ug/l	DETSC 3402	0.6	ug/l			< 0.6	< 0.6	< 0.6
PCB 138 ug/l	DETSC 3402	0.2	ug/l			< 0.2	< 0.2	< 0.2
PCB 153 ug/l	DETSC 3402	0.2	ug/l			< 0.2	< 0.2	< 0.2
PCB 180 ug/l	DETSC 3402	0.2	ug/l			< 0.2	< 0.2	< 0.2
PCB 7 Total ug/l	DETSC 3402	1	ug/l			< 1.0	< 1.0	< 1.0
Phenols								
Phenol - Monohydric ug/l	DETSC 2130	100	ug/l			< 100	< 100	< 100

F.1.3 Groundwater Results



Certificate of Analysis

Certificate Number 19-00095-1

11-Jan-19

Client Geotechnics LTD
203 Torrington Avenue
Tile Hill
Coventry
CV4 9AP

Our Reference 19-00095-1

Client Reference PC187331

Order No AUTH-OC19375

Contract Title Tottenham Substation GI

Description 2 Water samples.

Date Received 20-Dec-18

Date Started 20-Dec-18

Date Completed 11-Jan-19

Test Procedures Identified by prefix DETSn (details on request).

Notes This report supersedes 19-00095, amendments.

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Adam Fenwick
Contracts Manager



Summary of Chemical Analysis

Water Samples

Our Ref 19-00095-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1441355	1441356
Sample ID	WS01	WS02
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	19/12/18	19/12/18
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Metals					
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	9.3	5.1
Barium, Dissolved	DETSC 2306	0.26	ug/l	200	60
Beryllium, Dissolved	DETSC 2306*	0.1	ug/l	< 0.1	< 0.1
Boron, Dissolved	DETSC 2306*	12	ug/l	870	3200
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	0.04	< 0.03
Chromium III, Dissolved	DETSC 2306*	1	ug/l	< 1.0	< 1.0
Chromium, Hexavalent	DETSC 2203	7	ug/l	< 7.0	< 7.0
Copper, Dissolved	DETSC 2306	0.4	ug/l	3.8	0.8
Iron, Dissolved	DETSC 2306	5.5	ug/l	2300	720
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.59	0.56
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	9.9	18
Selenium, Dissolved	DETSC 2306	0.25	ug/l	1.5	1.1
Vanadium, Dissolved	DETSC 2306	0.6	ug/l	1.1	1.0
Zinc, Dissolved	DETSC 2306	1.3	ug/l	13	380
Inorganics					
pH	DETSC 2008			7.3	7.1
Hardness	DETSC 2303	0.1	mg/l	454	1410
Sulphate as SO4	DETSC 2055	0.1	mg/l	94	690
Sulphur as S, Total	DETSC 2320*	10	mg/l	170	480
Petroleum Hydrocarbons					
Aliphatic C5-C6	DETSC 3322	0.1	ug/l	67	< 0.1
Aliphatic C6-C8	DETSC 3322	0.1	ug/l	1700	< 0.1
Aliphatic C8-C10	DETSC 3322	0.1	ug/l	10000	< 0.1
Aliphatic C10-C12	DETSC 3072*	1	ug/l	9.2	< 1.0
Aliphatic C12-C16	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C16-C21	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C21-C35	DETSC 3072*	1	ug/l	< 1.0	< 1.0
Aliphatic C5-C35	DETSC 3072*	10	ug/l	12000	< 10
Aromatic C5-C7	DETSC 3322	0.1	ug/l	1000	< 0.1
Aromatic C7-C8	DETSC 3322	0.1	ug/l	640	< 0.1
Aromatic C8-C10	DETSC 3322	0.1	ug/l	< 0.1	< 0.1
Aromatic C10-C12	DETSC 3072*	1	ug/l	5300	12
Aromatic C12-C16	DETSC 3072*	1	ug/l	750	< 1.0
Aromatic C16-C21	DETSC 3072*	1	ug/l	67	< 1.0
Aromatic C21-C35	DETSC 3072*	1	ug/l	5.9	< 1.0
Aromatic C5-C35	DETSC 3072*	10	ug/l	7800	12
TPH Ali/Aro Total	DETSC 3072*	10	ug/l	20000	12

Summary of Chemical Analysis

Water Samples

Our Ref 19-00095-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1441355	1441356
Sample ID	WS01	WS02
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	19/12/18	19/12/18
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
PAHs					
Naphthalene	DETSC 3304	0.05	ug/l	82000	19
Acenaphthylene	DETSC 3304	0.01	ug/l	3600	0.19
Acenaphthene	DETSC 3304	0.01	ug/l	5900	1.1
Fluorene	DETSC 3304	0.01	ug/l	5000	0.24
Phenanthrene	DETSC 3304	0.01	ug/l	11000	0.42
Anthracene	DETSC 3304	0.01	ug/l	6300	0.14
Fluoranthene	DETSC 3304	0.01	ug/l	2700	0.60
Pyrene	DETSC 3304	0.01	ug/l	4400	0.70
Benzo(a)anthracene	DETSC 3304	0.01	ug/l	1400	0.33
Chrysene	DETSC 3304	0.01	ug/l	1400	0.55
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	880	0.70
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	390	0.27
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	1200	0.59
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	460	0.49
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	120	0.10
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	440	0.47
PAH Total	DETSC 3304	0.2	ug/l	130000	26
PCBs					
PCB 28 + PCB 31	DETSC 3402	0.3	ug/l	< 0.3	< 0.3
PCB 52	DETSC 3402	0.2	ug/l	< 0.2	< 0.2
PCB 101	DETSC 3402	0.3	ug/l	< 0.3	< 0.3
PCB 118 + PCB 123	DETSC 3402	0.6	ug/l	< 0.6	< 0.6
PCB 138	DETSC 3402	0.2	ug/l	< 0.2	< 0.2
PCB 153	DETSC 3402	0.2	ug/l	< 0.2	< 0.2
PCB 180	DETSC 3402	0.2	ug/l	< 0.2	< 0.2
PCB 7 Total	DETSC 3402	1	ug/l	< 1.0	< 1.0
Phenols					
Phenol - Monohydric	DETSC 2130	100	ug/l	< 100	< 100

Summary of Chemical Analysis

Water Samples

Our Ref 19-00095-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1441355	1441356
Sample ID	WS01	WS02
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	19/12/18	19/12/18
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
VOCs					
Dichlorodifluoromethane	DETS 3432	1	ug/l	< 1	< 1
Chloromethane	DETS 3432	1	ug/l	< 1	< 1
Vinyl Chloride	DETS 3432	1	ug/l	< 1	< 1
Bromomethane	DETS 3432	1	ug/l	< 1	< 1
Chloroethane	DETS 3432	1	ug/l	< 1	< 1
Trichlorofluoromethane	DETS 3432*	1	ug/l	< 1	< 1
1,1-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1
Trans-1,2-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1
1,1-dichloroethane	DETS 3432	1	ug/l	< 1	< 1
Cis-1,2-dichloroethylene	DETS 3432	1	ug/l	< 1	< 1
2,2-dichloropropane	DETS 3432	2	ug/l	< 2	< 2
Bromochloromethane	DETS 3432	4	ug/l	< 4	< 4
Chloroform	DETS 3432	1	ug/l	< 1	< 1
1,1,1-trichloroethane	DETS 3432	1	ug/l	< 1	< 1
1,1-dichloropropene	DETS 3432	1	ug/l	< 1	< 1
Carbon tetrachloride	DETS 3432	1	ug/l	< 1	< 1
Benzene	DETS 3432	1	ug/l	< 1	< 1
1,2-dichloroethane	DETS 3432	1	ug/l	49	< 1
Trichloroethylene	DETS 3432*	1	ug/l	< 1	< 1
1,2-dichloropropane	DETS 3432	1	ug/l	< 1	< 1
Dibromomethane	DETS 3432	1	ug/l	< 1	< 1
Bromodichloromethane	DETS 3432	4	ug/l	< 4	< 4
cis-1,3-dichloropropene	DETS 3432	1	ug/l	< 1	< 1
Toluene	DETS 3432	1	ug/l	4100	< 1
trans-1,3-dichloropropene	DETS 3432	1	ug/l	< 1	< 1
1,1,2-trichloroethane	DETS 3432	1	ug/l	< 1	< 1
Tetrachloroethylene	DETS 3432	1	ug/l	< 1	< 1
1,3-dichloropropane	DETS 3432	1	ug/l	< 1	< 1
Dibromochloromethane	DETS 3432	1	ug/l	< 1	< 1
1,2-dibromoethane	DETS 3432	1	ug/l	< 1	< 1
Chlorobenzene	DETS 3432	1	ug/l	< 1	< 1
1,1,1,2-tetrachloroethane	DETS 3432	1	ug/l	< 1	< 1
Ethylbenzene	DETS 3432	1	ug/l	340	< 1
m+p-Xylene	DETS 3432	2	ug/l	< 2	< 2
o-Xylene	DETS 3432	1	ug/l	17000	2
Styrene	DETS 3432	1	ug/l	59	< 1
Bromoform	DETS 3432	1	ug/l	< 1	< 1
Isopropylbenzene	DETS 3432	1	ug/l	4100	< 1
1,1,2,2-tetrachloroethane	DETS 3432	1	ug/l	< 1	< 1
Bromobenzene	DETS 3432	1	ug/l	< 100	< 1
1,2,3-trichloropropane	DETS 3432	1	ug/l	< 1	< 1

Summary of Chemical Analysis

Water Samples

Our Ref 19-00095-1

Client Ref PC187331

Contract Title Tottenham Substation GI

Lab No	1441355	1441356
Sample ID	WS01	WS02
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	19/12/18	19/12/18
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
n-propylbenzene	DETSC 3432	1	ug/l	33	< 1
2-chlorotoluene	DETSC 3432	1	ug/l	8400	< 1
1,3,5-trimethylbenzene	DETSC 3432	1	ug/l	7500	< 1
4-chlorotoluene	DETSC 3432	1	ug/l	28	< 1
Tert-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trimethylbenzene	DETSC 3432	1	ug/l	17000	< 1
sec-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
p-isopropyltoluene	DETSC 3432	1	ug/l	23	< 1
1,3-dichlorobenzene	DETSC 3432	2	ug/l	< 2	< 2
1,4-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
n-butylbenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
1,2-dibromo-3-chloropropane	DETSC 3432	1	ug/l	< 1	< 1
1,2,4-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
Hexachlorobutadiene	DETSC 3432	1	ug/l	< 1	< 1
1,2,3-trichlorobenzene	DETSC 3432	1	ug/l	< 1	< 1
MTBE	DETSC 3432*	1	ug/l	< 1	< 1

Information in Support of the Analytical Results

Our Ref 19-00095-1
 Client Ref PC187331
 Contract Tottenham Substation GI

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
1441355	WS01 WATER	19/12/18	GB 1L, GV x2, PB 1L		
1441356	WS02 WATER	19/12/18	GB 1L, GV x2, PB 1L		

Key: G-Glass P-Plastic B-Bottle V-Vial

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Summary of Chemical Analysis**Water Samples**

Our Ref 19-00095-1
Client Ref PC187331
Contract Title Tottenham Substation GI

Lab No	1441355	1441356
Sample ID	WS01	WS02
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	18/12/18	18/12/18
Sampling Time	n/s	n/s

UK DWS
(mg/l)

Test	Method	LOD	Units			
Metals						
Arsenic, Dissolved	DETS 2306	0.00016	mg/l	0.01	0.0093	0.0051
Barium, Dissolved	DETS 2306	0.00026	mg/l	1	0.2	0.06
Beryllium, Dissolved	DETS 2306*	0.0001	mg/l	-	<0.0000001	<0.0000001
Boron, Dissolved	DETS 2306*	0.012	mg/L	1	0.82	2.3
Cadmium, Dissolved	DETS 2306	0.00003	mg/l	0.005	0.00004	<0.00003
Chromium III, Dissolved	DETS 2306*	0.0001	mg/l	-	<0.001	<0.001
Chromium, Hexavalent	DETS 2203	0.007	mg/l	-	<0.007	<0.007
Copper, Dissolved	DETS 2306	0.00004	mg/l	2	0.0038	0.0008
Iron, Dissolved	DETS 2306	0.00055	mg/l	0.2	2.3	0.72
Lead, Dissolved	DETS 2306	0.00009	mg/l	0.01	0.00059	0.00016
Mercury, Dissolved	DETS 2306	0.00001	mg/l	0.001	0.00002	<0.00001
Nickel, Dissolved	DETS 2306	0.00005	mg/l	0.02	0.0099	0.018
Selenium, Dissolved	DETS 2306	0.00025	mg/l	0.01	0.0015	0.0011
Sulfuric Acid, Dissolved	DETS 2306	0.0006	mg/l	-	0.0011	0.001
Zinc, Dissolved	DETS 2306	0.00013	mg/l	5	0.013	0.38
Inorganics						
pH	DETS 2008			7.3	7.1	
Hardness	DETS 2303	0.1	mg/l	-	454	1410
Sulphate as SO4	DETS 2055	0.1	mg/l	250	94	590
Sulphur as S, Total	DETS 2320*	10	mg/l	-	170	480
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETS 3322	0.0001	mg/l	0.01	0.067	<0.0001
Aliphatic C6-C8	DETS 3322	0.0001	mg/l	0.01	3.7	<0.0001
Aliphatic C8-C10	DETS 3322	0.0001	mg/l	0.01	10	<0.0001
Aliphatic C10-C12	DETS 3072*	0.001	mg/l	0.01	0.0092	<0.001
Aliphatic C12-C16	DETS 3072*	0.001	mg/l	0.01	<0.001	<0.001
Aliphatic C16-C21	DETS 3072*	0.001	mg/l	0.01	<0.001	<0.001
Aliphatic C21-C35	DETS 3072*	0.001	mg/l	0.01	<0.001	<0.001
Aliphatic C5-C15	DETS 3072*	0.01	mg/l	-	12	<0.01
Aromatic C7-C8	DETS 3322	0.0001	mg/l	0.01	0.64	<0.0001
Aromatic C9-C10	DETS 3322	0.0001	mg/l	0.01	<0.0001	<0.0001
Aromatic C10-C12	DETS 3072*	0.001	mg/l	0.01	5.3	0.012
Aromatic C12-C16	DETS 3072*	0.001	mg/l	0.01	0.75	<0.001
Aromatic C16-C21	DETS 3072*	0.001	mg/l	0.01	0.067	<0.001
Aromatic C21-C35	DETS 3072*	0.001	mg/l	0.01	0.0059	<0.001
Aromatic C5-C35	DETS 3072*	0.01	mg/l	-	2.8	0.012
TPH All Aro. Total	DETS 3072*	0.01	mg/l	-	0	0.012
PAHs						
Naphthalene	DETS 3304	0.00005	mg/l	-	82	0.019
Acenaphthylene	DETS 3304	0.00001	mg/l	-	3.6	0.00019
Acenaphthene	DETS 3304	0.00001	mg/l	-	5.9	0.0011
Fluorene	DETS 3304	0.00001	mg/l	-	5	0.00024
Phenanthrene	DETS 3304	0.00001	mg/l	-	11	0.00042
Anthracene	DETS 3304	0.00001	mg/l	-	6.3	0.00014
Fluoranthene	DETS 3304	0.00001	mg/l	-	2.7	0.0006
Pyrene	DETS 3304	0.00001	mg/l	-	4.4	0.0007
Benzo[a]anthracene	DETS 3304	0.00001	mg/l	-	1.4	0.00033
Chrysene	DETS 3304	0.00001	mg/l	-	1.4	0.00055
Benzo[b]fluoranthene	DETS 3304	0.00001	mg/l	-	0.88	0.0007
Benzo[k]fluoranthene	DETS 3304	0.00001	mg/l	-	0.39	0.00027
Benzo[e]pyrene	DETS 3304	0.00001	mg/l	-	0.44	0.00047
Indeno[1,2,3-cd]pyrene	DETS 3304	0.00001	mg/l	-	0.46	0.00049
Sum of 4 PAH	DETS 3304	0.00001	mg/l	0.0001	2.17	0.00059
Benzo[a]pyrene	DETS 3304	0.00001	mg/l	0.00001	1.2	0.00059
Dibenz[a,h]anthracene	DETS 3304	0.00001	mg/l	-	0.12	0.0001
PAH Total	DETS 3304	0.00002	mg/l	0.0001	1.89	0.006
PCB						
PCB 28 + PCB 31	DETS 3402	0.0003	mg/l	-	<0.0003	<0.0003
PCB 52	DETS 3402	0.0002	mg/l	-	<0.0002	<0.0002
PCB 101	DETS 3402	0.0003	mg/l	-	<0.0003	<0.0003
PCB 118 + PCB 123	DETS 3402	0.0006	mg/l	-	<0.0006	<0.0006
PCB 138	DETS 3402	0.0002	mg/l	-	<0.0002	<0.0002
PCB 153	DETS 3402	0.0002	mg/l	-	<0.0002	<0.0002
PCB 180	DETS 3402	0.0002	mg/l	-	<0.0002	<0.0002
PCB 7 Total	DETS 3402	0.001	mg/l	-	<0.001	<0.001
Phenols						
Phenol, Monohydric	DETS 2130	0.1	mg/l	0.0005	<0.1	<0.1
VOCs						
Dichlorodifluoromethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Chloromethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Vinyl Chloride	DETS 3432	0.001	mg/l	0.0001	<0.001	<0.001
Bromomethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Chloroethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Trichlorofluoromethane	DETS 3432*	0.001	mg/l	-	<0.001	<0.001
1,1,1-trichloroethylene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Trans-1,2-dichloroethylene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,1,2-trichloroethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Cis-1,2-dichloroethylene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,2-dichloropropane	DETS 3432	0.002	mg/l	-	<0.002	<0.002
Bromochloromethane	DETS 3432	0.004	mg/l	-	<0.004	<0.004
Chloroform	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,1,1-trichloroethane	DETS 3432	0.001	mg/l	0.003	<0.001	<0.001
1,1,2-trichloropropane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Carbon tetrachloride	DETS 3432	0.001	mg/l	0.003	<0.001	<0.001
Benzene	DETS 3432	0.001	mg/l	0.001	<0.001	<0.001
1,2-dichloropropane	DETS 3432	0.001	mg/l	-	0.049	<0.001
Trichloroethylene	DETS 3432*	0.001	mg/l	-	<0.001	<0.001
1,2-dichloropropane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Dibromomethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Bromodichloromethane	DETS 3432	0.004	mg/l	-	<0.004	<0.004
cis-1,3-dichloropropane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Toluene	DETS 3432	0.001	mg/l	-	4.1	<0.001
trans-1,3-dichloropropane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,1,2-trichloroethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Tetrachloroethylene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,3-dichloropropane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Dibromochloromethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,2-dibromomethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Chlorobenzene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,1,1,2-tetrachloroethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Ethylbenzene	DETS 3432	0.001	mg/l	-	0.34	<0.001
m,p-Xylene	DETS 3432	0.002	mg/l	-	<0.002	<0.002
o-Xylene	DETS 3432	0.001	mg/l	-	17	0.003
Sum of Xylenes	-	-	mg/l	-	17.002	0.004
Styrene	DETS 3432	0.001	mg/l	-	0.059	<0.001
Bromoform	DETS 3432	0.001	mg/l	-	<0.001	<0.001
isopropylbenzene	DETS 3432	0.001	mg/l	-	4.1	<0.001
1,1,1,2,2-tetrachloroethane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Bromobenzene	DETS 3432	0.001	mg/l	-	<0.1	<0.001
1,2,3-trichloropropane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
o-propylbenzene	DETS 3432	0.001	mg/l	-	0.033	<0.001
2-chlorobutane	DETS 3432	0.001	mg/l	-	8.4	<0.001
1,3,5-trimethylbenzene	DETS 3432	0.001	mg/l	-	7.5	<0.001
4-chlorotoluene	DETS 3432	0.001	mg/l	-	0.028	<0.001
tert-butylbenzene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,2,4-trimethylbenzene	DETS 3432	0.001	mg/l	-	17	<0.001
sec-butylbenzene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
p-isopropyltoluene	DETS 3432	0.001	mg/l	-	0.023	<0.001
1,3-dichlorobenzene	DETS 3432	0.002	mg/l	-	<0.002	<0.002
1,4-dichlorobenzene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
n-butylbenzene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,2-dichlorobenzene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,2-dibrom-3-chloropropane	DETS 3432	0.001	mg/l	-	<0.001	<0.001
1,2,4-trichlorobenzene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
Hexachlorobutadiene	DETS 3432	0.001	mg/l	0.0001	<0.001	<0.001
1,2,3-trichlorobenzene	DETS 3432	0.001	mg/l	-	<0.001	<0.001
MTBE	DETS 3432*	0.001	mg/l	-	<0.001	<0.001

Summary of Chemical Analysis

Water Samples

Our Ref 19-00095-1
Client Ref PC187331
Contract Title Tottenham Substation GI

Lab No	1441375	1441376
Sample ID	WS01	WS02
Depth		
Other ID		
Sample Type	WATER	WATER
Sampling Date	19/12/18	19/12/18
Sampling Time	n/a	n/a

Test	Method	LOD	Units	Aqueous solubility (mg/l)		
Metals						
Arsenic, Dissolved	DETSC 2306	0.00016	mg/l	-	0.0093	0.0051
Barium, Dissolved	DETSC 2306	0.00026	mg/l	-	0.2	0.06
Beryllium, Dissolved	DETSC 2306*	0.0001	mg/l	-	<0.0000001	<0.0000001
Boron, Dissolved	DETSC 2306*	0.012	mg/l	-	0.87	3.2
Cadmium, Dissolved	DETSC 2306	0.00003	mg/l	-	0.00004	<0.00003
Chromium III, Dissolved	DETSC 2306*	0.0001	mg/l	-	<0.001	<0.001
Chromium, Hexavalent	DETSC 2203	0.007	mg/l	-	<0.007	<0.007
Copper, Dissolved	DETSC 2306	0.0004	mg/l	-	0.0038	0.0008
Iron, Dissolved	DETSC 2306	0.0055	mg/l	-	2.3	0.72
Lead, Dissolved	DETSC 2306	0.00009	mg/l	-	0.00059	0.00056
Mercury, Dissolved	DETSC 2306	0.00001	mg/l	-	0.00002	<0.00001
Nickel, Dissolved	DETSC 2306	0.0005	mg/l	-	0.0099	0.018
Selenium, Dissolved	DETSC 2306	0.00025	mg/l	-	0.0015	0.0011
Vanadium, Dissolved	DETSC 2306	0.0006	mg/l	-	0.0011	0.001
Zinc, Dissolved	DETSC 2306	0.0013	mg/l	-	0.013	0.38
Inorganics						
pH	DETSC 2008				7.3	7.1
Hardness	DETSC 2303	0.1	mg/l	-	454	1410
Sulphate as SO4	DETSC 2055	0.1	mg/l	-	94	690
Sulphur as S, Total	DETSC 2320*	10	mg/l	-	170	480
Petroleum Hydrocarbons						
Aliphatic C5-C6	DETSC 3322	0.0001	mg/l	35.9	0.067	<0.0001
Aliphatic C6-C8	DETSC 3322	0.0001	mg/l	5.37	1.7	<0.0001
Aliphatic C8-C10	DETSC 3322	0.0001	mg/l	0.427	10	<0.0001
Aliphatic C10-C12	DETSC 3072*	0.001	mg/l	0.0339	0.0692	<0.001
Aliphatic C12-C16	DETSC 3072*	0.001	mg/l	0.000759	<0.001	<0.001
Aliphatic C16-C21	DETSC 3072*	0.001	mg/l	-	<0.001	<0.001
Aliphatic C21-C35	DETSC 3072*	0.001	mg/l	-	<0.001	<0.001
Aliphatic C5-C35	DETSC 3072*	0.01	mg/l	-	12	<0.01
Aromatic C5-C7	DETSC 3322	0.0001	mg/l	1780	1	<0.0001
Aromatic C7-C8	DETSC 3322	0.0001	mg/l	590	0.64	<0.0001
Aromatic C8-C10	DETSC 3322	0.0001	mg/l	64.6	<0.0001	<0.0001
Aromatic C10-C12	DETSC 3072*	0.001	mg/l	24.5	5.3	0.012
Aromatic C12-C16	DETSC 3072*	0.001	mg/l	5.75	0.75	<0.001
Aromatic C16-C21	DETSC 3072*	0.001	mg/l	0.653	0.067	<0.001
Aromatic C21-C35	DETSC 3072*	0.001	mg/l	0.00661	0.0059	<0.001
Aromatic C5-C35	DETSC 3072*	0.01	mg/l	-	7.8	0.012
TPH Ali/Aro Total	DETSC 3072*	0.01	mg/l	-	20	0.012
PAHs						
Naphthalene	DETSC 3304	0.00005	mg/l	19	82	0.019
Acenaphthylene	DETSC 3304	0.00001	mg/l	7.95	3.6	0.00019
Acenaphthene	DETSC 3304	0.00001	mg/l	4.11	5.9	0.0011
Fluorene	DETSC 3304	0.00001	mg/l	1.86	5	0.00024
Phenanthrene	DETSC 3304	0.00001	mg/l	1.12	11	0.00042
Anthracene	DETSC 3304	0.00001	mg/l	0.056	6.3	0.00014
Fluoranthene	DETSC 3304	0.00001	mg/l	0.23	2.7	0.0006
Pyrene	DETSC 3304	0.00001	mg/l	0.13	4.4	0.0007
Benzo(a)anthracene	DETSC 3304	0.00001	mg/l	0.0038	1.4	0.00033
Chrysene	DETSC 3304	0.00001	mg/l	0.002	1.4	0.00055
Benzo(b)fluoranthene	DETSC 3304	0.00001	mg/l	0.002	0.88	0.0007
Benzo(k)fluoranthene	DETSC 3304	0.00001	mg/l	0.0008	0.39	0.00027
Benzo(g,h,i)perylene	DETSC 3304	0.00001	mg/l	0.00026	0.44	0.00047
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.00001	mg/l	0.0002	0.46	0.00045
Sum of 4 PAH	-	-	mg/l	-	2.17	0.00193
Benzo(a)pyrene	DETSC 3304	0.00001	mg/l	0.0038	1.2	0.00059
Dibenz(a,h)anthracene	DETSC 3304	0.00001	mg/l	0.0006	0.12	0.0001
PAH Total	DETSC 3304	0.00002	mg/l	-	130	0.026
PCBs						
PCB 28 + PCB 31	DETSC 3402	0.0003	mg/l	-	<0.0003	<0.0003
PCB 52	DETSC 3402	0.0002	mg/l	-	<0.0002	<0.0002
PCB 101	DETSC 3402	0.0003	mg/l	-	<0.0003	<0.0003
PCB 118 + PCB 123	DETSC 3402	0.0006	mg/l	-	<0.0006	<0.0006
PCB 138	DETSC 3402	0.0002	mg/l	-	<0.0002	<0.0002
PCB 153	DETSC 3402	0.0002	mg/l	-	<0.0002	<0.0002
PCB 180	DETSC 3402	0.0002	mg/l	-	<0.0002	<0.0002
PCB 7 Total	DETSC 3402	0.001	mg/l	-	<0.001	<0.001
Phenols						
Phenol - Monohydric	DETSC 2130	0.1	mg/l	84100	<0.1	<0.1
VOCs						
Dichlorodifluoromethane	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
Chloromethane	DETSC 3432	0.001	mg/l	5350	<0.001	<0.001
Vinyl Chloride	DETSC 3432	0.001	mg/l	2760	<0.001	<0.001
Bromomethane	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
Chloroethane	DETSC 3432	0.001	mg/l	5742	<0.001	<0.001
Trichlorofluoromethane	DETSC 3432*	0.001	mg/l	-	<0.001	<0.001
1,1-dichloroethylene	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
Trans-1,2-dichloroethylene	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
1,1-dichloroethane	DETSC 3432	0.001	mg/l	3666	<0.001	<0.001
Cis-1,2-dichloroethylene	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
2,2-dichloropropane	DETSC 3432	0.002	mg/l	-	<0.002	<0.002
Bromochloromethane	DETSC 3432	0.004	mg/l	-	<0.004	<0.004
Chloroform	DETSC 3432	0.001	mg/l	8950	<0.001	<0.001
1,1,1-trichloroethane	DETSC 3432	0.001	mg/l	1300	<0.001	<0.001
1,1-dichloropropene	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
Carbon tetrachloride	DETSC 3432	0.001	mg/l	846	<0.001	<0.001
Benzene	DETSC 3432	0.001	mg/l	1780	<0.001	<0.001
1,2-dichloroethane	DETSC 3432	0.001	mg/l	6680	0.049	<0.001
Trichloroethylene	DETSC 3432*	0.001	mg/l	-	<0.001	<0.001
1,2-dichloropropane	DETSC 3432	0.001	mg/l	2050	<0.001	<0.001
Dibromomethane	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
Bromodichloromethane	DETSC 3432	0.004	mg/l	3000	<0.004	<0.004
Cis-1,3-dichloropropene	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
Toluene	DETSC 3432	0.001	mg/l	590	4.1	<0.001
trans-1,3-dichloropropene	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
1,1,2-trichloroethane	DETSC 3432	0.001	mg/l	4491	<0.001	<0.001
Tetrachloroethylene	DETSC 3432	0.001	mg/l	225	<0.001	<0.001
1,3-dichloropropane	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
Dibromochloromethane	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
1,2-dibromoethane	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
Chlorobenzene	DETSC 3432	0.001	mg/l	387	<0.001	<0.001
1,1,1,2-tetrachloroethane	DETSC 3432	0.001	mg/l	1110	<0.001	<0.001
Ethylbenzene	DETSC 3432	0.001	mg/l	180	0.34	<0.001
m,p-Xylene	DETSC 3432	0.002	mg/l	-	<0.002	<0.002
o-Xylene	DETSC 3432	0.001	mg/l	173	17	0.001
Sum of Xylenes	-	-	mg/l	-	17.002	0.004
Styrene	DETSC 3432	0.001	mg/l	290	0.059	<0.001
Bromoform	DETSC 3432	0.001	mg/l	3000	<0.001	<0.001
Isopropylbenzene	DETSC 3432	0.001	mg/l	56	4.1	<0.001
1,1,2,2-tetrachloroethane	DETSC 3432	0.001	mg/l	2930	<0.001	<0.001
Bromobenzene	DETSC 3432	0.001	mg/l	388.04	<0.1	<0.001
1,2,3-trichloropropane	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
n-propylbenzene	DETSC 3432	0.001	mg/l	54.1	0.033	<0.001
2-chlorotoluene	DETSC 3432	0.001	mg/l	-	8.4	<0.001
1,3,5-trimethylbenzene	DETSC 3432	0.001	mg/l	-	7.5	<0.001
4-chlorotoluene	DETSC 3432	0.001	mg/l	-	0.028	<0.001
Tert-butylbenzene	DETSC 3432	0.001	mg/l	27.3	<0.001	<0.001
1,2,4-trimethylbenzene	DETSC 3432	0.001	mg/l	559	17	<0.001
sec-butylbenzene	DETSC 3432	0.001	mg/l	14	<0.001	<0.001
p-isopropyltoluene	DETSC 3432	0.001	mg/l	51	0.023	<0.001
1,3-dichlorobenzene	DETSC 3432	0.002	mg/l	103	<0.002	<0.002
1,4-dichlorobenzene	DETSC 3432	0.001	mg/l	51.2	<0.001	<0.001
n-butylbenzene	DETSC 3432	0.001	mg/l	20.4	<0.001	<0.001
1,2-dichlorobenzene	DETSC 3432	0.001	mg/l	133	<0.001	<0.001
1,2-dibromo-3-chloropropane	DETSC 3432	0.001	mg/l	-	<0.001	<0.001
1,2,4-trichlorobenzene	DETSC 3432	0.001	mg/l	41.4	<0.001	<0.001
Hexachlorobutadiene	DETSC 3432	0.001	mg/l	4.8	<0.001	<0.001
1,2,3-trichlorobenzene	DETSC 3432	0.001	mg/l	21	<0.001	<0.001
MTBE	DETSC 3432*	0.001	mg/l	48000	<0.001	<0.001



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No.4225

Attention :	Philip Harrison
Date :	12th June, 2013
Your reference :	51603-00
Our reference :	Test Report 13/4994 Batch 1
Location :	TOTTENHAM MARSH
Date samples received :	30th May, 2013
Status :	Final report
Issue :	1

Ten samples were received for analysis on 30th May, 2013. 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.

Compiled By:

Jamie Williams B.Sc
Project Co-ordinator

Bob Millward B.Sc
Principal Chemist

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4994

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

J E Sample No.	1-7	8-14	15-21	22-28	29-36	37-45	46-54	55-63	64-71		Please see attached notes for all abbreviations and acronyms		
Sample ID	BH12	BH3A	BH6	BH8	BH13-11	BH13-09	BH13-05	BH13-07	BH13-10				
Depth		4.20	4.14	2.86									
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P				
Sample Date	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013		LOD	Units	Method No.
Dissolved Arsenic #	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009	<0.0009		<0.0009	mg/l	TM30/PM14
Dissolved Cadmium #	0.00058	0.00030	0.00028	0.00036	0.00023	0.00050	0.00031	0.00028	0.00023		<0.00003	mg/l	TM30/PM14
Total Dissolved Chromium #	0.0014	0.0003	<0.0002	<0.0002	0.0005	0.0002	<0.0002	<0.0002	0.0002		<0.0002	mg/l	TM30/PM14
Dissolved Copper #	0.013	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM30/PM14
Total Dissolved Iron #	0.6821	0.0348	0.0386	0.0764	0.1758	0.1033	0.0343	0.0775	0.0749		<0.0047	mg/l	TM30/PM14
Dissolved Lead #	0.0045	0.0071	0.0112	0.0076	0.0079	0.0081	0.0072	0.0070	0.0072		<0.0004	mg/l	TM30/PM14
Dissolved Nickel #	0.0094	0.0003	0.0030	0.0005	0.0254	0.0018	0.0061	0.0023	0.0012		<0.0002	mg/l	TM30/PM14
Dissolved Selenium #	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012		<0.0012	mg/l	TM30/PM14
Dissolved Zinc #	0.1421	0.0020	0.0035	0.0015	0.0413	0.0034	0.0021	0.0029	0.0031		<0.0015	mg/l	TM30/PM14
Mercury Dissolved by CVAf #	0.00006	0.00001	<0.00001	<0.00001	0.00012	<0.00001	0.00001	0.00001	0.00019		<0.00001	mg/l	TM61/PM38
Total Dissolved Sulphur	8.04	49.55	162.80	51.05	82.39	37.75	121.40	47.14	91.29		<0.01	mg/l	TM30/PM14
PAH MS													
Naphthalene #	0.380500	3.922170	0.000590	0.000180	1.049260	0.000040	0.000150	0.000250	0.100870		<0.000014	mg/l	TM4/PM30
Acenaphthylene #	0.047570	0.108630	0.001580	0.001150	0.004550	0.004690	0.000120	0.000660	0.001130		<0.000013	mg/l	TM4/PM30
Acenaphthene #	0.011860	0.427500	0.029190	0.009460**	0.014580	0.010660**	0.000250	0.000380	0.003320		<0.000013	mg/l	TM4/PM30
Fluorene #	0.005030	0.123500	0.000100	0.000110	0.007600	0.002590	0.000030	0.000080	0.001760		<0.000014	mg/l	TM4/PM30
Phenanthrene #	0.004530	0.097560	0.000100	0.000150	0.017090	0.000320	0.000090	0.000380	0.002480		<0.000011	mg/l	TM4/PM30
Anthracene #	0.000460	0.008910	0.000030	0.000040	0.002890	0.001200	0.000020	0.000060	0.000450		<0.000013	mg/l	TM4/PM30
Fluoranthene #	0.000050	0.001360	0.000030	0.000050	0.003010	0.001190	<0.000012	0.000030	0.000500		<0.000012	mg/l	TM4/PM30
Pyrene #	0.000070	0.001580	0.000040	0.000050	0.003320	0.001760	<0.000013	0.000030	0.000520		<0.000013	mg/l	TM4/PM30
Benzo(a)anthracene #	<0.000015	0.000030	<0.000015	<0.000015	0.001160	0.000810	<0.000015	<0.000015	0.000150		<0.000015	mg/l	TM4/PM30
Chrysene #	<0.000011	0.000030	<0.000011	<0.000011	0.001000	0.000790	<0.000011	<0.000011	0.000140		<0.000011	mg/l	TM4/PM30
Benzo(bk)fluoranthene #	<0.000018	<0.000018	<0.000018	<0.000018	0.001030	0.000680	<0.000018	<0.000018	0.000130		<0.000018	mg/l	TM4/PM30
Benzo(a)pyrene #	<0.000016	<0.000016	<0.000016	<0.000016	0.000710	0.000580	<0.000016	<0.000016	0.000080		<0.000016	mg/l	TM4/PM30
Indeno(123cd)pyrene #	<0.000011	<0.000011	<0.000011	<0.000011	0.000500	0.000300	<0.000011	<0.000011	0.000040		<0.000011	mg/l	TM4/PM30
Dibenzo(ah)anthracene #	<0.00001	<0.00001	<0.00001	<0.00001	0.00011	0.00005	<0.00001	<0.00001	0.00001		<0.00001	mg/l	TM4/PM30
Benzo(ghi)perylene #	<0.000011	<0.000011	<0.000011	<0.000011	0.000340	0.000260	<0.000011	<0.000011	0.000050		<0.000011	mg/l	TM4/PM30
PAH 16 Total #	0.450070	4.691270	0.031660	0.011190	1.107150	0.025920	0.000660	0.001870	0.111630		<0.000195	mg/l	TM4/PM30
Benzo(b)fluoranthene	<0.00001	<0.00001	<0.00001	<0.00001	0.00074	0.00049	<0.00001	<0.00001	0.00009		<0.00001	mg/l	TM4/PM30
Benzo(k)fluoranthene	<0.00001	<0.00001	<0.00001	<0.00001	0.00029	0.00019	<0.00001	<0.00001	0.00004		<0.00001	mg/l	TM4/PM30
PAH Surrogate % Recovery	106	119	99	112	125	81	83	97	109		<0	%	TM4/PM30
Methyl Tertiary Butyl Ether #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	mg/l	TM15/PM10
Benzene #	6.3680	0.0463	<0.0005	<0.0005	18.8443	<0.0005	<0.0005	<0.0005	68.2000		<0.0005	mg/l	TM15/PM10
Toluene #	0.3455	0.0105	<0.0005	<0.0005	5.1070	<0.0005	<0.0005	<0.0005	14.2500		<0.0005	mg/l	TM15/PM10
Ethylbenzene #	0.1588	<0.0005	<0.0005	<0.0005	3.9405	<0.0005	<0.0005	<0.0005	0.7500		<0.0005	mg/l	TM15/PM10
p/m-Xylene #	0.189	0.088	<0.001	<0.001	4.956	<0.001	<0.001	<0.001	4.604		<0.001	mg/l	TM15/PM10
o-Xylene #	0.1319	0.0607	<0.0005	<0.0005	2.5022	<0.0005	<0.0005	<0.0005	1.3260		<0.0005	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	95	100	83	86	148	88	87	87	151		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	105	100	97	97	128	97	97	97	123		<0	%	TM15/PM10
EPH (C8-C40) #	12.00	5.69	0.50	<0.01	25.60	3.24	<0.01	<0.01	96.50		<0.01	mg/l	TM5/PM30

Please include all sections of this report if it is reproduced

Jones Environmental Laboratory

Client Name: Worley Parsons

Report : Liquid

Reference: 51603-00

Location: TOTTENHAM MARSH

Contact: Philip Harrison

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

JE Job No.: 13/4994

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

J E Sample No.	1-7	8-14	15-21	22-28	29-36	37-45	46-54	55-63	64-71		Please see attached notes for all abbreviations and acronyms		
Sample ID	BH12	BH3A	BH6	BH8	BH13-11	BH13-09	BH13-05	BH13-07	BH13-10				
Depth		4.20	4.14	2.86									
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P				
Sample Date	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013		LOD	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	0.778	<0.005	0.050	<0.005	0.362	<0.005	<0.005	<0.005	0.295		<0.005	mg/l	TM36/PM12
>C6-C8 #	<0.005	0.025	0.071	<0.005	<0.005	0.008	<0.005	<0.005	<0.005		<0.005	mg/l	TM36/PM12
>C8-C10 #	1.104	0.262	0.087	<0.005	1.564	0.060	<0.005	<0.005	2.163		<0.005	mg/l	TM36/PM12
>C10-C12 #	<0.005	<0.005	<0.005	<0.005	0.090	0.015	<0.005	<0.005	<0.005		<0.005	mg/l	TM5/PM30
>C12-C16 #	<0.01	<0.01	<0.01	<0.01	0.55	0.60	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/PM30
>C16-C21 #	<0.01	<0.01	<0.01	<0.01	0.22	0.48	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/PM30
>C21-C35 #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/PM30
Total aliphatics C5-35 #	1.88	0.29	0.21	<0.01	2.79	1.16	<0.01	<0.01	2.46		<0.01	mg/l	TM5/TM36/PM30
Total aliphatics C5-C12 #	1.88	0.29	0.21	<0.01	2.02	0.08	<0.01	<0.01	2.46		<0.01	mg/l	TM5/TM36/PM30
Total aliphatics >C12-C35 #	<0.01	<0.01	<0.01	<0.01	0.77	1.08	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	7.561	0.039	0.008	<0.005	10.021	0.006	<0.005	<0.005	67.992		<0.005	mg/l	TM36/PM12
>EC7-EC8 #	0.339	0.012	<0.005	<0.005	2.616	<0.005	<0.005	<0.005	13.498		<0.005	mg/l	TM36/PM12
>EC8-EC10 #	0.491	0.197	0.020	<0.005	6.171	0.007	<0.005	<0.005	6.176		<0.005	mg/l	TM36/PM12
>EC10-EC12 #	0.586	2.319	0.016	<0.005	1.374	0.028	<0.005	<0.005	0.532		<0.005	mg/l	TM5/PM30
>EC12-EC16 #	0.44	2.15	0.15	<0.01	1.05	0.40	<0.01	<0.01	0.28		<0.01	mg/l	TM5/PM30
>EC16-EC21 #	<0.01	0.16	<0.01	<0.01	0.34	0.33	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/PM30
>EC21-EC35 #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		<0.01	mg/l	TM5/PM30
Total aromatics C5-35 #	9.42	4.88	0.19	<0.01	21.57	0.77	<0.01	<0.01	88.48		<0.01	mg/l	TM5/PM30
Total aromatics C6-C12	8.98	2.57	0.04	<0.01	20.18	0.04	<0.01	<0.01	88.20		<0.01	mg/l	TM5/TM36/PM30
Total aromatics >EC12-EC35 #	0.44	2.31	0.15	<0.01	1.39	0.73	<0.01	<0.01	0.28		<0.01	mg/l	TM5/TM36/PM30
Total aliphatics and aromatics(C5-35) #	11.30	5.17	0.40	<0.01	24.36	1.93	<0.01	<0.01	90.94		<0.01	mg/l	TM5/TM36/PM30
Resorcinol	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	mg/l	TM26/PM0
Catechol	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0005		<0.0005	mg/l	TM26/PM0
Phenol	0.1021	<0.0005	0.0034	0.0039	0.2501	0.0029	0.0023	0.0039	0.2522		<0.0005	mg/l	TM26/PM0
m/p-cresol	0.0022	<0.0005	<0.0005	<0.0005	0.0172	<0.0005	<0.0005	<0.0005	0.0141		<0.0005	mg/l	TM26/PM0
o-cresol	0.0081	<0.0005	<0.0005	<0.0005	0.0084	<0.0005	<0.0005	<0.0005	0.0081		<0.0005	mg/l	TM26/PM0
Total cresols	0.0103	<0.0005	<0.0005	<0.0005	0.0256	<0.0005	<0.0005	<0.0005	0.0222		<0.0005	mg/l	TM26/PM0
Xylenols	0.2298	<0.0005	<0.0005	<0.0005	<0.0005	0.0126	<0.0005	0.0246	<0.0005		<0.0005	mg/l	TM26/PM0
1-naphthol	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	mg/l	TM26/PM0
2,3,5-trimethyl phenol	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	mg/l	TM26/PM0
2-isopropylphenol	0.0165	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	mg/l	TM26/PM0
Total Speciated Phenols HPLC	0.359	<0.005	<0.005	<0.005	0.276	0.016	<0.005	0.029	0.274		<0.005	mg/l	TM26/PM0
Sulphate #	27.24	198.19	691.07	155.40	321.26	116.23	470.87	149.02	336.12		<0.05	mg/l	TM38/PM0
Chloride #	25.1	45.2	72.7	93.2	302.3	69.5	65.8	77.4	163.1		<0.3	mg/l	TM38/PM0
Free Cyanide #	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	mg/l	TM89/PM0
Total Cyanide	0.010	<0.005	0.024	0.152	0.186	0.145	0.024	0.181	0.155		<0.005	mg/l	TM89/PM0
Complex Cyanide	0.01	<0.01	0.02	0.15	0.19	0.15	0.02	0.18	0.16		<0.01	mg/l	TM89/PM0

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Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison
JE Job No.: 13/4994

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

[illegible]

Jones Environmental Laboratory

Client Name: Worley Parsons

VOC Report : Liquid

Reference: 51603-00

Location: TOTTENHAM MARSH

Contact: Philip Harrison

JE Job No.: 13/4994

J E Sample No.	1-7	8-14	15-21	22-28	29-36	37-45	46-54	55-63	64-71		Please see attached notes for all abbreviations and acronyms		
Sample ID	BH12	BH3A	BH6	BH8	BH13-11	BH13-09	BH13-05	BH13-07	BH13-10				
Depth		4.20	4.14	2.86									
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P				
Sample Date	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013	28/05/2013				
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water				
Batch Number	1	1	1	1	1	1	1	1	1				
Date of Receipt	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013	30/05/2013		LOD	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	mg/l	TM15/PM10
Chloromethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Vinyl Chloride	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	mg/l	TM15/PM10
Bromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	mg/l	TM15/PM10
Chloroethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Trichlorofluoromethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Dichloromethane (DCM) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
trans-1,2-Dichloroethene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
1,1-Dichloroethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
cis-1,2-Dichloroethene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
2,2-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001	mg/l	TM15/PM10
Bromochloromethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Chloroform #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
1,1,1-Trichloroethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
1,1-Dichloropropane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Carbon tetrachloride #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
1,2-Dichloroethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Benzene #	6.3680 ⁺⁺	0.0463	<0.0005	<0.0005	18.8443	<0.0005	<0.0005	<0.0005	68.2000		<0.0005	mg/l	TM15/PM10
Trichloroethene (TCE) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
1,2-Dichloropropane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.058		<0.002	mg/l	TM15/PM10
Dibromomethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Bromodichloromethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
cis-1,3-Dichloropropene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Toluene #	0.3455	0.0105	<0.0005	<0.0005	5.1070	<0.0005	<0.0005	<0.0005	14.2500		<0.0005	mg/l	TM15/PM10
trans-1,3-Dichloropropene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
1,1,2-Trichloroethane #	<0.002	<0.002	<0.002	<0.002	0.082	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Tetrachloroethene (PCE) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
1,3-Dichloropropane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Dibromochloromethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
1,2-Dibromoethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Chlorobenzene #	0.103	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Ethylbenzene #	0.1588	<0.0005	<0.0005	<0.0005	3.9405	<0.0005	<0.0005	<0.0005	0.7500		<0.0005	mg/l	TM15/PM10
p/m-Xylene #	0.189	0.088	<0.001	<0.001	4.956	<0.001	<0.001	<0.001	4.604		<0.001	mg/l	TM15/PM10
o-Xylene #	0.1319	0.0607	<0.0005	<0.0005	2.5022	<0.0005	<0.0005	<0.0005	1.3260		<0.0005	mg/l	TM15/PM10
Styrene	<0.002	<0.002	<0.002	<0.002	2.082	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Bromoform #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
Isopropylbenzene #	0.007	0.005	<0.003	<0.003	0.042	<0.003	<0.003	<0.003	0.361		<0.003	mg/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004		<0.004	mg/l	TM15/PM10
Bromobenzene #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
1,2,3-Trichloropropane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Propylbenzene #	0.007	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.137		<0.003	mg/l	TM15/PM10
2-Chlorotoluene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
1,3,5-Trimethylbenzene #	0.012	0.037	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.538		<0.003	mg/l	TM15/PM10
4-Chlorotoluene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
tert-Butylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
1,2,4-Trimethylbenzene #	0.049	0.083	<0.003	<0.003	1.265	<0.003	<0.003	<0.003	1.253		<0.003	mg/l	TM15/PM10
sec-Butylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
4-Isopropyltoluene #	<0.003	0.005	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.083		<0.003	mg/l	TM15/PM10
1,3-Dichlorobenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
1,4-Dichlorobenzene #	0.023	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
n-Butylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.062		<0.003	mg/l	TM15/PM10
1,2-Dichlorobenzene #	0.014	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	mg/l	TM15/PM10
1,2,4-Trichlorobenzene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Hexachlorobutadiene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Naphthalene	0.313	0.052	<0.002	<0.002	20.503	<0.002	<0.002	<0.002	3.708		<0.002	mg/l	TM15/PM10
1,2,3-Trichlorobenzene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003		<0.003	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	95	100	83	86	148	88	87	87	151		<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	105	100	97	97	128	97	97	97	123		<0	%	TM15/PM10

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Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/77	06/77	06/77	06/77	06/78	06/78	06/78	06/78	
J E QC Sample No.	23	29	37	39	1	6	7	11	Method No.
QC Sample ID	QC 23	QC 29	QC 37	QC 39	QC 1	QC 6	QC 7	QC 11	
VOC MS									
Methyl Tertiary Butyl Ether	-	-	-	-	-	-	86.57 57.73 : 140.00	-	TM15/PM10
Chloromethane	-	-	-	-	-	-	95.19 54.23 : 144.84	-	TM15/PM10
Chloroethane	-	-	-	-	-	-	89.85 67.36 : 124.26	-	TM15/PM10
Trichlorofluoromethane	-	-	-	-	-	-	97.71 74.07 : 123.40	-	TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	-	-	-	-	-	94.75 68.69 : 120.31	-	TM15/PM10
Dichloromethane (DCM)	-	-	-	-	-	-	83.93 70.62 : 123.55	-	TM15/PM10
trans-1-2-Dichloroethene	-	-	-	-	-	-	91.66 71.16 : 118.34	-	TM15/PM10
1,1-Dichloroethane	-	-	-	-	-	-	88.30 71.44 : 119.49	-	TM15/PM10
cis-1-2-Dichloroethene	-	-	-	-	-	-	86.65 72.56 : 116.04	-	TM15/PM10
Bromochloromethane	-	-	-	-	-	-	83.17 75.34 : 121.37	-	TM15/PM10
Chloroform	-	-	-	-	-	-	89.99 76.39 : 118.08	-	TM15/PM10
1,1,1-Trichloroethane	-	-	-	-	-	-	95.49 75.95 : 115.86	-	TM15/PM10
1,1-Dichloropropene	-	-	-	-	-	-	97.17 71.30 : 116.65	-	TM15/PM10
Carbon tetrachloride	-	-	-	-	-	-	105.15 70.98 : 126.82	-	TM15/PM10
1,2-Dichloroethane	-	-	-	-	-	-	86.49 76.77 : 121.51	-	TM15/PM10
Benzene	-	-	-	-	-	-	93.14 75.91 : 116.02	-	TM15/PM10
Trichloroethene (TCE)	-	-	-	-	-	-	102.30 76.71 : 122.61	-	TM15/PM10
1,2-Dichloropropane	-	-	-	-	-	-	88.90 71.76 : 117.59	-	TM15/PM10
Dibromomethane	-	-	-	-	-	-	84.27 75.19 : 128.88	-	TM15/PM10
Bromodichloromethane	-	-	-	-	-	-	87.25 76.25 : 118.04	-	TM15/PM10
Toluene	-	-	-	-	-	-	96.07 75.39 : 115.14	-	TM15/PM10
1,1,2-Trichloroethane	-	-	-	-	-	-	83.69 75.70 : 122.00	-	TM15/PM10
Tetrachloroethene (PCE)	-	-	-	-	-	-	98.14 75.03 : 122.30	-	TM15/PM10
1,3-Dichloropropane	-	-	-	-	-	-	85.46 72.82 : 123.58	-	TM15/PM10
Dibromochloromethane	-	-	-	-	-	-	84.02 72.49 : 131.11	-	TM15/PM10
1,2-Dibromoethane	-	-	-	-	-	-	84.21 74.54 : 123.25	-	TM15/PM10
Chlorobenzene	-	-	-	-	-	-	93.85 79.23 : 115.18	-	TM15/PM10
1,1,1,2-Tetrachloroethane	-	-	-	-	-	-	90.91 80.58 : 124.35	-	TM15/PM10
Ethylbenzene	-	-	-	-	-	-	96.77 75.46 : 116.33	-	TM15/PM10
p/m-Xylene	-	-	-	-	-	-	97.81 76.09 : 117.11	-	TM15/PM10
o-Xylene	-	-	-	-	-	-	97.53 78.91 : 118.20	-	TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/77	06/77	06/77	06/77	06/78	06/78	06/78	06/78	
J E QC Sample No.	23	29	37	39	1	6	7	11	Method No.
QC Sample ID	QC 23	QC 29	QC 37	QC 39	QC 1	QC 6	QC 7	QC 11	
Styrene	-	-	-	-	-	-	92.13 61.59 : 150.44	-	TM15/PM10
Bromoform	-	-	-	-	-	-	86.07 72.99 : 135.07	-	TM15/PM10
Isopropylbenzene	-	-	-	-	-	-	101.72 77.50 : 120.59	-	TM15/PM10
Bromobenzene	-	-	-	-	-	-	94.49 75.14 : 126.30	-	TM15/PM10
1,2,3-Trichloropropane	-	-	-	-	-	-	92.85 81.43 : 131.79	-	TM15/PM10
Propylbenzene	-	-	-	-	-	-	104.69 75.22 : 121.68	-	TM15/PM10
2-Chlorotoluene	-	-	-	-	-	-	101.81 78.98 : 120.71	-	TM15/PM10
1,3,5-Trimethylbenzene	-	-	-	-	-	-	107.25 82.24 : 125.72	-	TM15/PM10
4-Chlorotoluene	-	-	-	-	-	-	101.65 76.18 : 124.56	-	TM15/PM10
tert-Butylbenzene	-	-	-	-	-	-	113.44 74.06 : 135.20	-	TM15/PM10
1,2,4-Trimethylbenzene	-	-	-	-	-	-	106.65 82.68 : 126.68	-	TM15/PM10
sec-Butylbenzene	-	-	-	-	-	-	103.43 81.02 : 128.81	-	TM15/PM10
4-Isopropyltoluene	-	-	-	-	-	-	110.81 80.46 : 133.00	-	TM15/PM10
1,3-Dichlorobenzene	-	-	-	-	-	-	101.52 85.94 : 126.45	-	TM15/PM10
1,4-Dichlorobenzene	-	-	-	-	-	-	102.81 87.88 : 129.22	-	TM15/PM10
n-Butylbenzene	-	-	-	-	-	-	110.35 75.29 : 137.17	-	TM15/PM10
1,2-Dichlorobenzene	-	-	-	-	-	-	101.58 91.99 : 133.66	-	TM15/PM10
EPH (C8-C40)	92.20 71 : 129	-	-	-	-	-	-	-	TM5/PM30
TPH CWG									
Aliphatics									
EPH (C8-C40)	-	-	-	95.02 :	-	-	-	-	TM5/PM30
GRO (>C4-C12)	-	-	-	-	90 65 : 133	-	-	-	TM36/PM12
MTBE	-	-	-	-	95 56 : 143	-	-	-	TM36/PM12
Benzene	-	-	-	-	91 63 : 132	-	-	-	TM36/PM12
Toluene	-	-	-	-	90 62 : 135	-	-	-	TM36/PM12
Ethylbenzene	-	-	-	-	87 62 : 133	-	-	-	TM36/PM12
m/p-Xylene	-	-	-	-	86 65 : 130	-	-	-	TM36/PM12
o-Xylene	-	-	-	-	85 64 : 133	-	-	-	TM36/PM12
>C5-C12	-	-	-	-	90 62 : 136	-	-	-	TM36/PM12

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/78	06/78	06/78	06/78	06/78	06/78	06/78	06/78	Method No.
J E QC Sample No.	12	22	23	27	29	30	31	32	
QC Sample ID	QC 12	QC 22	QC 23	QC 27	QC 29	QC 30	QC 31	QC 32	
VOC MS									
Methyl Tertiary Butyl Ether	-	-	-	66.71 47.87 : 118.88	-	-	-	-	TM15/PM10
Chloromethane	-	-	-	119.71 53.81 : 144.59	-	-	-	-	TM15/PM10
Chloroethane	-	-	-	83.90 63.80 : 125.50	-	-	-	-	TM15/PM10
Trichlorofluoromethane	-	-	-	120.17 68.67 : 129.10	-	-	-	-	TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	-	-	105.06 65.12 : 125.77	-	-	-	-	TM15/PM10
Dichloromethane (DCM)	-	-	-	74.91 68.28 : 126.50	-	-	-	-	TM15/PM10
trans-1-2-Dichloroethene	-	-	-	77.90 68.86 : 121.48	-	-	-	-	TM15/PM10
1,1-Dichloroethane	-	-	-	79.94 68.99 : 121.84	-	-	-	-	TM15/PM10
cis-1-2-Dichloroethene	-	-	-	79.90 68.37 : 122.43	-	-	-	-	TM15/PM10
Bromochloromethane	-	-	-	87.29 70.74 : 125.84	-	-	-	-	TM15/PM10
Chloroform	-	-	-	92.28 73.90 : 123.15	-	-	-	-	TM15/PM10
1,1,1-Trichloroethane	-	-	-	91.92 68.67 : 123.18	-	-	-	-	TM15/PM10
1,1-Dichloropropene	-	-	-	88.90 70.88 : 120.02	-	-	-	-	TM15/PM10
Carbon tetrachloride	-	-	-	104.42 70.13 : 128.23	-	-	-	-	TM15/PM10
1,2-Dichloroethane	-	-	-	92.83 75.15 : 126.76	-	-	-	-	TM15/PM10
Benzene	-	-	-	64.46 72.87 : 120.94	-	-	-	-	TM15/PM10
Trichloroethene (TCE)	-	-	-	97.53 73.76 : 128.00	-	-	-	-	TM15/PM10
1,2-Dichloropropane	-	-	-	89.56 71.80 : 122.29	-	-	-	-	TM15/PM10
Dibromomethane	-	-	-	110.12 73.83 : 130.19	-	-	-	-	TM15/PM10
Bromodichloromethane	-	-	-	123.15 74.51 : 125.02	-	-	-	-	TM15/PM10
Toluene	-	-	-	118.90 75.47 : 120.91	-	-	-	-	TM15/PM10
1,1,2-Trichloroethane	-	-	-	110.14 74.10 : 128.57	-	-	-	-	TM15/PM10
Tetrachloroethene (PCE)	-	-	-	112.94 74.41 : 122.72	-	-	-	-	TM15/PM10
1,3-Dichloropropane	-	-	-	110.67 74.31 : 126.10	-	-	-	-	TM15/PM10
Dibromochloromethane	-	-	-	105.77 71.65 : 130.69	-	-	-	-	TM15/PM10
1,2-Dibromoethane	-	-	-	113.71 69.70 : 131.74	-	-	-	-	TM15/PM10
Chlorobenzene	-	-	-	101.81 79.81 : 121.59	-	-	-	-	TM15/PM10
1,1,1,2-Tetrachloroethane	-	-	-	117.05 76.92 : 125.53	-	-	-	-	TM15/PM10
Ethylbenzene	-	-	-	101.72 77.36 : 119.74	-	-	-	-	TM15/PM10
p/m-Xylene	-	-	-	110.01 72.47 : 127.97	-	-	-	-	TM15/PM10
o-Xylene	-	-	-	117.21 77.48 : 121.90	-	-	-	-	TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/78	06/78	06/78	06/78	06/78	06/78	06/78	06/78	Method No.
J E QC Sample No.	12	22	23	27	29	30	31	32	
QC Sample ID	QC 12	QC 22	QC 23	QC 27	QC 29	QC 30	QC 31	QC 32	
Styrene	-	-	-	126.10 61.71 : 149.24	-	-	-	-	TM15/PM10
Bromoform	-	-	-	108.38 73.08 : 137.15	-	-	-	-	TM15/PM10
Isopropylbenzene	-	-	-	100.25 79.03 : 122.86	-	-	-	-	TM15/PM10
Bromobenzene	-	-	-	109.49 77.03 : 124.37	-	-	-	-	TM15/PM10
1,2,3-Trichloropropane	-	-	-	103.75 78.43 : 133.90	-	-	-	-	TM15/PM10
Propylbenzene	-	-	-	115.61 78.51 : 123.36	-	-	-	-	TM15/PM10
2-Chlorotoluene	-	-	-	84.50 79.51 : 121.23	-	-	-	-	TM15/PM10
1,3,5-Trimethylbenzene	-	-	-	117.49 81.61 : 123.61	-	-	-	-	TM15/PM10
4-Chlorotoluene	-	-	-	121.27 77.98 : 125.72	-	-	-	-	TM15/PM10
tert-Butylbenzene	-	-	-	109.56 69.67 : 131.49	-	-	-	-	TM15/PM10
1,2,4-Trimethylbenzene	-	-	-	113.75 83.44 : 123.36	-	-	-	-	TM15/PM10
sec-Butylbenzene	-	-	-	109.72 80.66 : 127.20	-	-	-	-	TM15/PM10
4-Isopropyltoluene	-	-	-	120.81 80.37 : 128.81	-	-	-	-	TM15/PM10
1,3-Dichlorobenzene	-	-	-	109.93 84.09 : 127.57	-	-	-	-	TM15/PM10
1,4-Dichlorobenzene	-	-	-	122.17 84.93 : 127.04	-	-	-	-	TM15/PM10
n-Butylbenzene	-	-	-	119.62 66.20 : 138.56	-	-	-	-	TM15/PM10
1,2-Dichlorobenzene	-	-	-	128.88 83.10 : 131.82	-	-	-	-	TM15/PM10
EPH (C8-C40)	-	-	-	-	-	-	-	-	TM5/PM30
TPH CWG									
Aliphatics									
EPH (C8-C40)	-	-	-	-	-	-	-	-	TM5/PM30
GRO (>C4-C12)	-	-	-	-	-	-	-	-	TM36/PM12
MTBE	-	-	-	-	-	-	-	-	TM36/PM12
Benzene	-	-	-	-	-	-	-	-	TM36/PM12
Toluene	-	-	-	-	-	-	-	-	TM36/PM12
Ethylbenzene	-	-	-	-	-	-	-	-	TM36/PM12
m/p-Xylene	-	-	-	-	-	-	-	-	TM36/PM12
o-Xylene	-	-	-	-	-	-	-	-	TM36/PM12
>C5-C12	-	-	-	-	-	-	-	-	TM36/PM12

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/78	06/78	06/78	06/78	06/78	06/78	06/78	06/78
J E QC Sample No.	12	22	23	27	29	30	31	32
QC Sample ID	QC 12	QC 22	QC 23	QC 27	QC 29	QC 30	QC 31	QC 32
Sulphate	-	-	-	-	-	-	-	-
Chloride	-	-	-	-	-	-	-	-
Total, Free & Complex Cyanide	-	-	-	-	-	-	-	-
Ammoniacal Nitrogen as NH4 (High)	-	-	95.49 86 : 114	-	-	-	-	-
Ammoniacal Nitrogen as NH4 (Low)	-	108.00 84 : 134	-	-	-	-	-	-
Total Alkalinity as CaCO3	-	-	-	-	-	-	-	98 91 : 118
pH 4	-	-	-	-	101.50 100 : 103	-	-	-
pH 7	-	-	-	-	-	100.57 100 : 102	-	-
pH 10	-	-	-	-	-	-	98.10 97 : 102	-
Electrical Conductivity @25C (1000 uS/cm)	-	-	-	-	-	-	-	-
Electrical Conductivity @25C (10000 uS/cm)	97 91 : 106	-	-	-	-	-	-	-
Inorganic Carbon (50 mg/l)	-	-	-	-	-	-	-	100 93 : 114
Organic Carbon (50 mg/l)	-	-	-	-	-	-	-	98 90 : 109
Inorganic Carbon (150 mg/l)	-	-	-	-	-	-	-	-
Organic Carbon (150 mg/l)	-	-	-	-	-	-	-	-

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/78	06/78							
J E QC Sample No.	33	35							
QC Sample ID	QC 33	QC 35							Method No.
VOC MS									
Methyl Tertiary Butyl Ether	-	-							TM15/PM10
Chloromethane	-	-							TM15/PM10
Chloroethane	-	-							TM15/PM10
Trichlorofluoromethane	-	-							TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	-							TM15/PM10
Dichloromethane (DCM)	-	-							TM15/PM10
trans-1-2-Dichloroethene	-	-							TM15/PM10
1,1-Dichloroethane	-	-							TM15/PM10
cis-1-2-Dichloroethene	-	-							TM15/PM10
Bromochloromethane	-	-							TM15/PM10
Chloroform	-	-							TM15/PM10
1,1,1-Trichloroethane	-	-							TM15/PM10
1,1-Dichloropropene	-	-							TM15/PM10
Carbon tetrachloride	-	-							TM15/PM10
1,2-Dichloroethane	-	-							TM15/PM10
Benzene	-	-							TM15/PM10
Trichloroethene (TCE)	-	-							TM15/PM10
1,2-Dichloropropane	-	-							TM15/PM10
Dibromomethane	-	-							TM15/PM10
Bromodichloromethane	-	-							TM15/PM10
Toluene	-	-							TM15/PM10
1,1,2-Trichloroethane	-	-							TM15/PM10
Tetrachloroethene (PCE)	-	-							TM15/PM10
1,3-Dichloropropane	-	-							TM15/PM10
Dibromochloromethane	-	-							TM15/PM10
1,2-Dibromoethane	-	-							TM15/PM10
Chlorobenzene	-	-							TM15/PM10
1,1,1,2-Tetrachloroethane	-	-							TM15/PM10
Ethylbenzene	-	-							TM15/PM10
p/m-Xylene	-	-							TM15/PM10
o-Xylene	-	-							TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/78	06/78							
J E QC Sample No.	33	35							Method No.
QC Sample ID	QC 33	QC 35							
Styrene	-	-							TM15/PM10
Bromoform	-	-							TM15/PM10
Isopropylbenzene	-	-							TM15/PM10
Bromobenzene	-	-							TM15/PM10
1,2,3-Trichloropropane	-	-							TM15/PM10
Propylbenzene	-	-							TM15/PM10
2-Chlorotoluene	-	-							TM15/PM10
1,3,5-Trimethylbenzene	-	-							TM15/PM10
4-Chlorotoluene	-	-							TM15/PM10
tert-Butylbenzene	-	-							TM15/PM10
1,2,4-Trimethylbenzene	-	-							TM15/PM10
sec-Butylbenzene	-	-							TM15/PM10
4-Isopropyltoluene	-	-							TM15/PM10
1,3-Dichlorobenzene	-	-							TM15/PM10
1,4-Dichlorobenzene	-	-							TM15/PM10
n-Butylbenzene	-	-							TM15/PM10
1,2-Dichlorobenzene	-	-							TM15/PM10
EPH (C8-C40)	-	-							TM5/PM30
TPH CWG									
Aliphatics									
EPH (C8-C40)	-	-							TM5/PM30
GRO (>C4-C12)	-	-							TM36/PM12
MTBE	-	-							TM36/PM12
Benzene	-	-							TM36/PM12
Toluene	-	-							TM36/PM12
Ethylbenzene	-	-							TM36/PM12
m/p-Xylene	-	-							TM36/PM12
o-Xylene	-	-							TM36/PM12
>C5-C12	-	-							TM36/PM12

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603-00
Location: TOTTENHAM MARSH
Contact: Philip Harrison

Report Liquid
Type: BLANK

[illegible]

Where analysis is blank corrected, blank data, although available, is not routinely supplied.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 13/4994

SOILS

Please note we are only MCERTS accredited 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 we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

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.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and 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

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

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.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final 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.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
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 a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No 13/4994

[illegible]



Jones Environmental Laboratory

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Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780

Fax: +44 (0) 1244 833781



No.4225

Attention :	Philip Harrison
Date :	3rd June, 2013
Your reference :	51603.00
Our reference :	Test Report 13/4761 Batch 1
Location :	TOTTENHAM MARSHES
Date samples received :	22nd May, 2013
Status :	Final report
Issue :	1

Eleven samples were received for analysis on 22nd May, 2013. 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.

Compiled By:

Jamie Williams B.Sc
Project Co-ordinator

Bob Millward B.Sc
Principal Chemist

Jones Environmental Laboratory

Client Name: Worley Parsons

Reference: 51603.00

Location: TOTTENHAM MARSHES

Contact: Philip Harrison

JE Job No.: 13/4761

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

J E Sample No.	1-9	10-18	19-27	28-34	35-42	43-49	50-56	57-63	64-70	71-77	Please see attached notes for all abbreviations and acronyms		
Sample ID	MW13-07200513WG1500	MW13-05200513WG1500	MW13-08200513WG1500	MW13-11200513WG1500	MW13-10200513WG1500	1BH2A200513WG1500	2BH4200513WG1500	3BH4200513WG1500	4BH12200513WG1500	4BH120100513WG1500			
Depth													
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G			
Sample Date	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013			
											LOD	Units	Method No.
Dissolved Arsenic #	<0.0009	0.0077	<0.0009	0.0144	<0.0009	<0.0009	0.0132	0.0046	0.0181	0.0170	<0.0009	mg/l	TM30/PM14
Dissolved Cadmium #	<0.00003	<0.00003	0.00019	0.00004	0.00026	<0.00003	<0.00003	0.00013	<0.00003	<0.00003	<0.00003	mg/l	TM30/PM14
Total Dissolved Chromium #	<0.0002	<0.0002	0.0010	0.0049	0.0008	<0.0002	0.0003	<0.0002	0.0005	0.0005	<0.0002	mg/l	TM30/PM14
Dissolved Copper #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM30/PM14
Total Dissolved Iron #	0.0757	0.3857	0.9540	0.1696	1.8790	0.0388	0.0318	0.0749	0.3146	0.2404	<0.0047	mg/l	TM30/PM14
Dissolved Lead #	0.0115	0.0130	0.0111	0.0103	0.0138	0.0114	0.0196	0.0124	0.0220	0.0217	<0.0004	mg/l	TM30/PM14
Dissolved Nickel #	0.0015	0.0053	0.0042	0.0308	0.0012	0.0003	0.0031	0.0014	0.0193	0.0202	<0.0002	mg/l	TM30/PM14
Dissolved Selenium #	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	mg/l	TM30/PM14
Dissolved Zinc #	<0.0015	<0.0015	0.0032	0.0048	<0.0015	<0.0015	0.0031	0.0022	0.0078	0.0073	<0.0015	mg/l	TM30/PM14
Mercury Dissolved by CVAf #	<0.00001	<0.00001	<0.00001	0.00001	0.00009	<0.00001	<0.00001	0.00007	0.00003	0.00002	<0.00001	mg/l	TM61/PM38
Total Dissolved Sulphur	47.39	186.00	34.44	116.90	125.60	46.52	245.80	45.86	138.80	135.90	<0.01	mg/l	TM30/PM14
PAH MS													
Naphthalene #	0.000150	0.001140	0.002060	11.017290	0.381070	6.575800	<0.000014	<0.000014	0.908380 ⁺⁺	0.948130 ⁺⁺	<0.000014	mg/l	TM4/PM30
Acenaphthylene #	0.000890	0.000170	0.002150	0.608100	0.002360	0.127490	0.001330	0.000020	0.087110	0.093160	<0.000013	mg/l	TM4/PM30
Acenaphthene #	0.000690	0.000300	0.013210 ⁺⁺	0.081200	0.011160	0.442000	0.020320	0.000100	0.019230	0.020680	<0.000013	mg/l	TM4/PM30
Fluorene #	0.000070	0.000060	0.004100	0.222740	0.003850	0.128520	0.000060	<0.000014	0.012600	0.014540	<0.000014	mg/l	TM4/PM30
Phenanthrene #	0.000080	0.000120	0.000810	0.509510	0.008350	0.094930	0.000040	<0.000011	0.017310	0.021470	<0.000011	mg/l	TM4/PM30
Anthracene #	0.000020	0.000020	0.001390	0.144320	0.002010	0.014530	0.000020	<0.000013	0.001450	0.001790	<0.000013	mg/l	TM4/PM30
Fluoranthene #	<0.000012	<0.000012	0.001010	0.127800	0.002350	<0.006000	<0.000012	0.000150	0.000420	0.000580	<0.000012	mg/l	TM4/PM30
Pyrene #	<0.000013	0.000020	0.001430	0.175510	0.002380	<0.006500	0.000020	0.000250	0.000440	0.000580	<0.000013	mg/l	TM4/PM30
Benzo(a)anthracene #	<0.000015	<0.000015	0.000430	0.103090	0.000920	<0.007500	<0.000015	0.000030	0.000030	0.000020	<0.000015	mg/l	TM4/PM30
Chrysene #	<0.000011	<0.000011	0.000400	0.086990	0.000680	<0.005500	<0.000011	0.000040	0.000020	0.000020	<0.000011	mg/l	TM4/PM30
Benzo(bk)fluoranthene #	<0.000018	<0.000018	0.000260	0.068690	0.000820	<0.009000	<0.000018	0.000030	<0.000018	<0.000018	<0.000018	mg/l	TM4/PM30
Benzo(a)pyrene #	<0.000016	<0.000016	0.000210	0.065160	0.000540	<0.008000	<0.000016	0.000020	<0.000016	<0.000016	<0.000016	mg/l	TM4/PM30
Indeno(123cd)pyrene #	<0.000011	<0.000011	0.000100	0.031360	0.000380	<0.005500	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	mg/l	TM4/PM30
Dibenzo(ah)anthracene #	<0.00001	<0.00001	0.00002	0.00768	0.00009	<0.00500	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	mg/l	TM4/PM30
Benzo(ghi)perylene #	<0.000011	<0.000011	0.000070	0.020510	0.000270	<0.005500	<0.000011	<0.000011	<0.000011	<0.000011	<0.000011	mg/l	TM4/PM30
PAH 16 Total #	0.001900	0.001830	0.027650	13.269950	0.417230	7.383270	0.021790	0.000640	1.046990	1.100970	<0.000195	mg/l	TM4/PM30
Benzo(b)fluoranthene	<0.00001	<0.00001	0.00019	0.04946	0.00059	<0.00500	<0.00001	0.00002	<0.00001	<0.00001	<0.00001	mg/l	TM4/PM30
Benzo(k)fluoranthene	<0.00001	<0.00001	0.00007	0.01923	0.00023	<0.00500	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	mg/l	TM4/PM30
PAH Surrogate % Recovery	99	95	102	128	102	129	85	104	120	116	<0	%	TM4/PM30
Methyl Tertiary Butyl Ether #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/l	TM15/PM10
Benzene #	<0.0005	0.0011	<0.0005	6.2043 ⁺⁺	12.1543 ⁺⁺	0.0340	<0.0005	<0.0005	6.0336 ⁺⁺	4.9479 ⁺⁺	<0.0005	mg/l	TM15/PM10
Toluene #	<0.0005	0.0023	<0.0005	1.6412 ⁺⁺	4.6324 ⁺⁺	0.0204	<0.0005	<0.0005	0.8963	0.7640	<0.0005	mg/l	TM15/PM10
Ethylbenzene #	<0.0005	<0.0005	<0.0005	0.1871	2.0904 ⁺⁺	0.0143	<0.0005	<0.0005	0.3296	0.3252	<0.0005	mg/l	TM15/PM10
p/m-Xylene #	<0.001	<0.001	<0.001	1.665 ⁺⁺	4.744 ⁺⁺	0.116	<0.001	<0.001	0.603	0.527	<0.001	mg/l	TM15/PM10
o-Xylene #	<0.0005	<0.0005	<0.0005	0.8876	2.3652 ⁺⁺	0.0857	<0.0005	<0.0005	0.3748	0.3304	<0.0005	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	101	103	104	126	163	101	100	97	106	108	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	111	114	116	129	154	114	114	114	119	118	<0	%	TM15/PM10
EPH (C8-C40) #	<0.01	<0.01	3.55	51.38	15.99	7.05	0.66	<0.01	18.56	19.65	<0.01	mg/l	TM5/PM30

Please include all sections of this report if it is reproduced

Jones Environmental Laboratory

Client Name: Worley Parsons

Report : Liquid

Reference: 51603.00

Location: TOTTENHAM MARSHES

Contact: Philip Harrison

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

JE Job No.: 13/4761

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

J E Sample No.	1-9	10-18	19-27	28-34	35-42	43-49	50-56	57-63	64-70	71-77	Please see attached notes for all abbreviations and acronyms		
Sample ID	MW13-07200513WG1500	MW13-05200513WG1500	MW13-08200513WG1500	MW13-11200513WG1500	MW13-10200513WG1500	1BH2A200513WG1500	2BH4200513WG1500	3BH4200513WG1500	4BH12200513WG1500	4BH120100513WG1500			
Depth													
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G			
Sample Date	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	LOD	Units	Method No.
TPH CWG													
Aliphatics													
>C5-C6 #	<0.005	<0.005	<0.005	0.084	0.143	<0.005	0.038	<0.005	0.837	0.923	<0.005	mg/l	TM36/PM12
>C6-C8 #	<0.005	<0.005	<0.005	<0.005	<0.005	0.009	0.057	<0.005	<0.005	<0.005	<0.005	mg/l	TM36/PM12
>C8-C10 #	<0.005	<0.005	<0.005	0.392	0.692	0.351	0.140	<0.005	1.772	1.600	<0.005	mg/l	TM36/PM12
>C10-C12 #	<0.005	<0.005	<0.005	0.008	0.020	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	mg/l	TM5/PM30
>C12-C16 #	<0.01	<0.01	0.16	0.12	0.22	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM5/PM30
>C16-C21 #	<0.01	<0.01	0.08	0.03	0.08	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM5/PM30
>C21-C35 #	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM5/PM30
Total aliphatics C5-35 #	<0.01	<0.01	0.24	0.63	1.16	0.36	0.24	<0.01	2.61	2.52	<0.01	mg/l	TM5/PM30
Total aliphatics C5-C12 #	<0.01	<0.01	<0.01	0.48	0.86	0.36	0.24	<0.01	2.61	2.52	<0.01	mg/l	TM5/PM30
Total aliphatics >C12-C35 #	<0.01	<0.01	0.24	0.15	0.30	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM5/PM30
Aromatics													
>C5-EC7 #	0.018	<0.005	<0.005	5.843	7.311	0.048	<0.005	<0.005	11.108	10.622	<0.005	mg/l	TM36/PM12
>EC7-EC8 #	<0.005	<0.005	<0.005	0.975	1.771	0.027	<0.005	<0.005	0.798	0.685	<0.005	mg/l	TM36/PM12
>EC8-EC10 #	<0.005	<0.005	<0.005	2.300	4.566	0.557	<0.005	<0.005	1.309	1.195	<0.005	mg/l	TM36/PM12
>EC10-EC12 #	<0.005	<0.005	0.037	6.784	0.374	3.259	0.026	<0.005	1.205	1.234	<0.005	mg/l	TM5/PM30
>EC12-EC16 #	<0.01	<0.01	0.30	4.82	0.37	2.60	0.14	<0.01	0.79	0.85	<0.01	mg/l	TM5/PM30
>EC16-EC21 #	<0.01	<0.01	0.06	1.94	0.05	0.14	<0.01	<0.01	0.04	0.05	<0.01	mg/l	TM5/PM30
>EC21-EC35 #	<0.01	<0.01	<0.01	1.14	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	mg/l	TM5/PM30
Total aromatics C5-35 #	0.02	<0.01	0.40	23.80	14.44	6.63	0.17	<0.01	15.25	14.64	<0.01	mg/l	TM5/PM30
Total aromatics C6-C12	0.02	<0.01	0.04	15.90	14.02	3.89	0.03	<0.01	14.42	13.74	<0.01	mg/l	TM5/PM30
Total aromatics >EC12-EC35 #	<0.01	<0.01	0.36	7.90	0.42	2.74	0.14	<0.01	0.83	0.90	<0.01	mg/l	TM5/PM30
Total aliphatics and aromatics(C5-35) #	0.02	<0.01	0.64	24.43	15.60	6.99	0.41	<0.01	17.86	17.16	<0.01	mg/l	TM5/PM30
Resorcinol	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM26/PM0
Catechol	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM26/PM0
Phenol	<0.0005	<0.0005	<0.0005	0.0757	0.1550	<0.0005	<0.0005	<0.0005	0.1311	0.1307	<0.0005	mg/l	TM26/PM0
m/p-cresol	<0.0005	<0.0005	<0.0005	0.0008	0.0119	<0.0005	<0.0005	<0.0005	0.0194	0.0193	<0.0005	mg/l	TM26/PM0
o-cresol	<0.0005	<0.0005	<0.0005	0.0007	0.0044	<0.0005	<0.0005	<0.0005	0.0251	0.0278	<0.0005	mg/l	TM26/PM0
Total cresols	<0.0005	<0.0005	<0.0005	0.0015	0.0163	<0.0005	<0.0005	<0.0005	0.0445	0.0471	<0.0005	mg/l	TM26/PM0
Xylenols	<0.0005	<0.0005	<0.0005	0.1101	0.0567	<0.0005	<0.0005	<0.0005	0.4461	0.4889	<0.0005	mg/l	TM26/PM0
1-naphthol	<0.0005	<0.0005	<0.0005	0.0118	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0528	<0.0005	mg/l	TM26/PM0
2,3,5-trimethyl phenol	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	mg/l	TM26/PM0
2-isopropylphenol	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0323	<0.0005	<0.0005	mg/l	TM26/PM0
Total Speciated Phenols HPLC	<0.005	<0.005	<0.005	0.199	0.228	<0.005	<0.005	<0.005	0.654	0.720	<0.005	mg/l	TM26/PM0
Sulphate #	163.91	505.53	115.48	319.15	338.62	212.12	691.10	160.85	371.26	370.11	<0.05	mg/l	TM38/PM0
Chloride #	80.5	68.5	70.5	348.7	168.8	46.7	75.1	101.0	273.6	263.6	<0.3	mg/l	TM38/PM0
Free Cyanide #	0.008	<0.005	0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	mg/l	TM89/PM0
Total Cyanide	0.169	0.028	0.154	0.096	0.143	<0.005	0.023	0.167	0.283	0.308	<0.005	mg/l	TM89/PM0
Complex Cyanide	0.16	0.03	0.15	0.10	0.14	<0.01	0.02	0.16	0.28	0.31	<0.01	mg/l	TM89/PM0

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Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison
JE Job No.: 13/4761

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

[illegible]

$$H=H_2SO_4, Z=ZnAc, N=NaOH, HN=HN0_3$$

Please see attached notes for all abbreviations and acronyms

Jones Environmental Laboratory

Client Name: Worley Parsons

Report : Liquid

Reference: 51603.00

Location: TOTTENHAM MARSHES

Contact: Philip Harrison

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle

JE Job No.: 13/4761

H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

J E Sample No.	78-79												
Sample ID	TRIP BLANK												
Depth													
COC No / misc													
Containers	P G												
Sample Date	20/05/2013												
Sample Type	Trip Blank												
Batch Number	1												
Date of Receipt	22/05/2013												
											LOD	Units	Method No.
Please see attached notes for all abbreviations and acronyms													
TPH CWG													
Aliphatics													
>C5-C6 #	<0.005										<0.005	mg/l	TM36/PM12
>C6-C8 #	<0.005										<0.005	mg/l	TM36/PM12
>C8-C10 #	<0.005										<0.005	mg/l	TM36/PM12
>C10-C12 #	<0.005										<0.005	mg/l	TM5/PM30
>C12-C16 #	<0.01										<0.01	mg/l	TM5/PM30
>C16-C21 #	<0.01										<0.01	mg/l	TM5/PM30
>C21-C35 #	<0.01										<0.01	mg/l	TM5/PM30
Total aliphatics C5-35 #	<0.01										<0.01	mg/l	TM5/TM36/PM30
Total aliphatics C5-C12 #	<0.01										<0.01	mg/l	TM5/TM36/PM30
Total aliphatics >C12-C35 #	<0.01										<0.01	mg/l	TM5/TM36/PM30
Aromatics													
>C5-EC7 #	<0.005										<0.005	mg/l	TM36/PM12
>EC7-EC8 #	<0.005										<0.005	mg/l	TM36/PM12
>EC8-EC10 #	<0.005										<0.005	mg/l	TM36/PM12
>EC10-EC12 #	<0.005										<0.005	mg/l	TM5/PM30
>EC12-EC16 #	<0.01										<0.01	mg/l	TM5/PM30
>EC16-EC21 #	<0.01										<0.01	mg/l	TM5/PM30
>EC21-EC35 #	<0.01										<0.01	mg/l	TM5/PM30
Total aromatics C5-35 #	<0.01										<0.01	mg/l	TM5/PM30
Total aromatics C6-C12	<0.01										<0.01	mg/l	TM5/TM36/PM30
Total aromatics >EC12-EC35 #	<0.01										<0.01	mg/l	TM5/TM36/PM30
Total aliphatics and aromatics(C5-35) #	<0.01										<0.01	mg/l	TM5/TM36/PM30
Resorcinol	<0.0005										<0.0005	mg/l	TM26/PM0
Catechol	<0.0005										<0.0005	mg/l	TM26/PM0
Phenol	<0.0005										<0.0005	mg/l	TM26/PM0
m/p-cresol	<0.0005										<0.0005	mg/l	TM26/PM0
o-cresol	<0.0005										<0.0005	mg/l	TM26/PM0
Total cresols	<0.0005										<0.0005	mg/l	TM26/PM0
Xylenols	<0.0005										<0.0005	mg/l	TM26/PM0
1-naphthol	<0.0005										<0.0005	mg/l	TM26/PM0
2,3,5-trimethyl phenol	<0.0005										<0.0005	mg/l	TM26/PM0
2-isopropylphenol	<0.0005										<0.0005	mg/l	TM26/PM0
Total Speciated Phenols HPLC	<0.005										<0.005	mg/l	TM26/PM0
Sulphate #	2.79										<0.05	mg/l	TM38/PM0
Chloride #	<0.3										<0.3	mg/l	TM38/PM0
Free Cyanide #	<0.005										<0.005	mg/l	TM89/PM0
Total Cyanide	<0.005										<0.005	mg/l	TM89/PM0
Complex Cyanide	<0.01										<0.01	mg/l	TM89/PM0

Jones Environmental Laboratory

Client Name: Worley Parsons

VOC Report : Liquid

Reference: 51603.00

Location: TOTTENHAM MARSHES

Contact: Philip Harrison

JE Job No.: 13/4761

J E Sample No.	1-9	10-18	19-27	28-34	35-42	43-49	50-56	57-63	64-70	71-77	Please see attached notes for all abbreviations and acronyms		
Sample ID	MW13-07200513WVG1500	MW13-05200513WVG1500	MW13-08200513WVG1500	MW13-11200513WVG1500	MW13-10200513WVG1500	18H2A200513WVG1500	28H2C200513WVG1500	38H2C200513WVG1500	48H12200513WVG1500	48H1201200513WVG1500			
Depth													
COC No / misc													
Containers	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G	V H N Z P G			
Sample Date	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013	20/05/2013			
Sample Type	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water	Ground Water			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013	22/05/2013			
VOC MS											LOD	Units	Method No.
Dichlorodifluoromethane	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/l	TM15/PM10
Chloromethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Vinyl Chloride	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	mg/l	TM15/PM10
Bromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	mg/l	TM15/PM10
Chloroethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Trichlorofluoromethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Dichloromethane (DCM) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
trans-1,2-Dichloroethene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,1-Dichloroethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
cis-1,2-Dichloroethene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
2,2-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	mg/l	TM15/PM10
Bromochloromethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Chloroform #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
1,1,1-Trichloroethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
1,1-Dichloropropane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Carbon tetrachloride #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
1,2-Dichloroethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Benzene #	<0.0005	0.0011	<0.0005	6.2043 ⁺⁺	12.1543 ⁺⁺	0.0340	<0.0005	<0.0005	6.0336 ⁺⁺	4.9479 ⁺⁺	<0.0005	mg/l	TM15/PM10
Trichloroethene (TCE) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,2-Dichloropropane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Dibromomethane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Bromodichloromethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
cis-1,3-Dichloropropene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Toluene #	<0.0005	0.0023	<0.0005	1.6412 ⁺⁺	4.6324 ⁺⁺	0.0204	<0.0005	<0.0005	0.8963	0.7640	<0.0005	mg/l	TM15/PM10
trans-1,3-Dichloropropene	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
1,1,2-Trichloroethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Tetrachloroethene (PCE) #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,2,3-Trichloropropane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Dibromochloromethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
1,2-Dibromoethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Chlorobenzene #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0.144	0.150	<0.002	mg/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Ethylbenzene #	<0.0005	<0.0005	<0.0005	0.1871	2.0904 ⁺⁺	0.0143	<0.0005	<0.0005	0.3296	0.3252	<0.0005	mg/l	TM15/PM10
p/m-Xylene #	<0.001	<0.001	<0.001	1.665 ⁺⁺	4.744 ⁺⁺	0.116	<0.001	<0.001	0.603	0.527	<0.001	mg/l	TM15/PM10
o-Xylene #	<0.0005	<0.0005	<0.0005	0.8876	2.3652 ⁺⁺	0.0857	<0.0005	<0.0005	0.3748	0.3304	<0.0005	mg/l	TM15/PM10
Styrene	<0.002	<0.002	<0.002	0.530	1.850 ⁺⁺	<0.002	<0.002	<0.002	0.206	0.171	<0.002	mg/l	TM15/PM10
Bromoform #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
Isopropylbenzene #	<0.003	<0.003	<0.003	0.009	0.028	0.012	<0.003	<0.003	0.016	0.017	<0.003	mg/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	mg/l	TM15/PM10
Bromobenzene #	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
1,2,3-Trichloropropane #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Propylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.022	0.026	<0.003	mg/l	TM15/PM10
2-Chlorotoluene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,3,5-Trimethylbenzene #	<0.003	<0.003	<0.003	0.122	0.263	0.047	<0.003	<0.003	0.038	0.036	<0.003	mg/l	TM15/PM10
4-Chlorotoluene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
tert-Butylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,2,4-Trimethylbenzene #	<0.003	<0.003	<0.003	0.357	0.826	0.083	<0.003	<0.003	0.157	0.161	<0.003	mg/l	TM15/PM10
sec-Butylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
4-Isopropyltoluene #	<0.003	<0.003	<0.003	<0.003	<0.003	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,3-Dichlorobenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,4-Dichlorobenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.027	0.029	<0.003	mg/l	TM15/PM10
n-Butylbenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
1,2-Dichlorobenzene #	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.020	0.021	<0.003	mg/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	mg/l	TM15/PM10
1,2,4-Trichlorobenzene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Hexachlorobutadiene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Naphthalene	<0.002	<0.002	<0.002	3.070 ⁺⁺	5.797 ⁺⁺	0.218	<0.002	<0.002	0.665	0.612	<0.002	mg/l	TM15/PM10
1,2,3-Trichlorobenzene	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	101	103	104	126	163	101	100	97	106	108	<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	111	114	116	129	154	114	114	114	119	118	<0	%	TM15/PM10

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Jones Environmental Laboratory

Client Name: Worley Parsons

VOC Report : Liquid

Reference: 51603.00

Location: TOTTENHAM MARSHES

Contact: Philip Harrison

JE Job No.: 13/4761

J E Sample No.	78-79												
Sample ID	TRIP BLANK												
Depth													
COC No / misc													
Containers	P G												
Sample Date	20/05/2013												
Sample Type	Trip Blank												
Batch Number	1												
Date of Receipt	22/05/2013												
											LOD	Units	Method No.
VOC MS													
Dichlorodifluoromethane	<0.002										<0.002	mg/l	TM15/PM10
Methyl Tertiary Butyl Ether #	<0.0001										<0.0001	mg/l	TM15/PM10
Chloromethane #	<0.003										<0.003	mg/l	TM15/PM10
Vinyl Chloride	<0.0001										<0.0001	mg/l	TM15/PM10
Bromomethane	<0.001										<0.001	mg/l	TM15/PM10
Chloroethane #	<0.003										<0.003	mg/l	TM15/PM10
Trichlorofluoromethane #	<0.003										<0.003	mg/l	TM15/PM10
1,1-Dichloroethene (1,1 DCE) #	<0.003										<0.003	mg/l	TM15/PM10
Dichloromethane (DCM) #	<0.003										<0.003	mg/l	TM15/PM10
trans-1-2-Dichloroethene #	<0.003										<0.003	mg/l	TM15/PM10
1,1-Dichloroethane #	<0.003										<0.003	mg/l	TM15/PM10
cis-1-2-Dichloroethene #	<0.003										<0.003	mg/l	TM15/PM10
2,2-Dichloropropane	<0.001										<0.001	mg/l	TM15/PM10
Bromochloromethane #	<0.002										<0.002	mg/l	TM15/PM10
Chloroform #	<0.002										<0.002	mg/l	TM15/PM10
1,1,1-Trichloroethane #	<0.002										<0.002	mg/l	TM15/PM10
1,1-Dichloropropene #	<0.003										<0.003	mg/l	TM15/PM10
Carbon tetrachloride #	<0.002										<0.002	mg/l	TM15/PM10
1,2-Dichloroethane #	<0.002										<0.002	mg/l	TM15/PM10
Benzene #	<0.0005										<0.0005	mg/l	TM15/PM10
Trichloroethene (TCE) #	<0.003										<0.003	mg/l	TM15/PM10
1,2-Dichloropropane #	<0.002										<0.002	mg/l	TM15/PM10
Dibromomethane #	<0.003										<0.003	mg/l	TM15/PM10
Bromodichloromethane #	<0.002										<0.002	mg/l	TM15/PM10
cis-1-3-Dichloropropene	<0.002										<0.002	mg/l	TM15/PM10
Toluene #	<0.0005										<0.0005	mg/l	TM15/PM10
trans-1-3-Dichloropropene	<0.002										<0.002	mg/l	TM15/PM10
1,1,2-Trichloroethane #	<0.002										<0.002	mg/l	TM15/PM10
Tetrachloroethene (PCE) #	<0.003										<0.003	mg/l	TM15/PM10
1,3-Dichloropropane #	<0.002										<0.002	mg/l	TM15/PM10
Dibromochloromethane #	<0.002										<0.002	mg/l	TM15/PM10
1,2-Dibromoethane #	<0.002										<0.002	mg/l	TM15/PM10
Chlorobenzene #	<0.002										<0.002	mg/l	TM15/PM10
1,1,1,2-Tetrachloroethane #	<0.002										<0.002	mg/l	TM15/PM10
Ethylbenzene #	<0.0005										<0.0005	mg/l	TM15/PM10
p/m-Xylene #	<0.001										<0.001	mg/l	TM15/PM10
o-Xylene #	<0.0005										<0.0005	mg/l	TM15/PM10
Styrene	<0.002										<0.002	mg/l	TM15/PM10
Bromoform #	<0.002										<0.002	mg/l	TM15/PM10
Isopropylbenzene #	<0.003										<0.003	mg/l	TM15/PM10
1,1,2,2-Tetrachloroethane	<0.004										<0.004	mg/l	TM15/PM10
Bromobenzene #	<0.002										<0.002	mg/l	TM15/PM10
1,2,3-Trichloropropane #	<0.003										<0.003	mg/l	TM15/PM10
Propylbenzene #	<0.003										<0.003	mg/l	TM15/PM10
2-Chlorotoluene #	<0.003										<0.003	mg/l	TM15/PM10
1,3,5-Trimethylbenzene #	<0.003										<0.003	mg/l	TM15/PM10
4-Chlorotoluene #	<0.003										<0.003	mg/l	TM15/PM10
tert-Butylbenzene #	<0.003										<0.003	mg/l	TM15/PM10
1,2,4-Trimethylbenzene #	<0.003										<0.003	mg/l	TM15/PM10
sec-Butylbenzene #	<0.003										<0.003	mg/l	TM15/PM10
4-Isopropyltoluene #	<0.003										<0.003	mg/l	TM15/PM10
1,3-Dichlorobenzene #	<0.003										<0.003	mg/l	TM15/PM10
1,4-Dichlorobenzene #	<0.003										<0.003	mg/l	TM15/PM10
n-Butylbenzene #	<0.003										<0.003	mg/l	TM15/PM10
1,2-Dichlorobenzene #	<0.003										<0.003	mg/l	TM15/PM10
1,2-Dibromo-3-chloropropane	<0.002										<0.002	mg/l	TM15/PM10
1,2,4-Trichlorobenzene	<0.003										<0.003	mg/l	TM15/PM10
Hexachlorobutadiene	<0.003										<0.003	mg/l	TM15/PM10
Naphthalene	<0.002										<0.002	mg/l	TM15/PM10
1,2,3-Trichlorobenzene	<0.003										<0.003	mg/l	TM15/PM10
Surrogate Recovery Toluene D8	104										<0	%	TM15/PM10
Surrogate Recovery 4-Bromofluorobenzene	113										<0	%	TM15/PM10

Please see attached notes for all abbreviations and acronyms

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Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/76	06/76	06/76	06/76	06/76	06/76	06/76	06/76	
J E QC Sample No.	12	13	16	17	19	29	30	31	Method No.
QC Sample ID	QC 12	QC 13	QC 16	QC 17	QC 19	QC 29	QC 30	QC 31	
VOC MS									
Methyl Tertiary Butyl Ether	-	-	-	-	-	-	-	-	TM15/PM10
Chloromethane	-	-	-	-	-	-	-	-	TM15/PM10
Chloroethane	-	-	-	-	-	-	-	-	TM15/PM10
Trichlorofluoromethane	-	-	-	-	-	-	-	-	TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	-	-	-	-	-	-	-	TM15/PM10
Dichloromethane (DCM)	-	-	-	-	-	-	-	-	TM15/PM10
trans-1-2-Dichloroethene	-	-	-	-	-	-	-	-	TM15/PM10
1,1-Dichloroethane	-	-	-	-	-	-	-	-	TM15/PM10
cis-1-2-Dichloroethene	-	-	-	-	-	-	-	-	TM15/PM10
Bromochloromethane	-	-	-	-	-	-	-	-	TM15/PM10
Chloroform	-	-	-	-	-	-	-	-	TM15/PM10
1,1,1-Trichloroethane	-	-	-	-	-	-	-	-	TM15/PM10
1,1-Dichloropropene	-	-	-	-	-	-	-	-	TM15/PM10
Carbon tetrachloride	-	-	-	-	-	-	-	-	TM15/PM10
1,2-Dichloroethane	-	-	-	-	-	-	-	-	TM15/PM10
Benzene	-	-	-	-	-	-	-	-	TM15/PM10
Trichloroethene (TCE)	-	-	-	-	-	-	-	-	TM15/PM10
1,2-Dichloropropane	-	-	-	-	-	-	-	-	TM15/PM10
Dibromomethane	-	-	-	-	-	-	-	-	TM15/PM10
Bromodichloromethane	-	-	-	-	-	-	-	-	TM15/PM10
Toluene	-	-	-	-	-	-	-	-	TM15/PM10
1,1,2-Trichloroethane	-	-	-	-	-	-	-	-	TM15/PM10
Tetrachloroethene (PCE)	-	-	-	-	-	-	-	-	TM15/PM10
1,3-Dichloropropane	-	-	-	-	-	-	-	-	TM15/PM10
Dibromochloromethane	-	-	-	-	-	-	-	-	TM15/PM10
1,2-Dibromoethane	-	-	-	-	-	-	-	-	TM15/PM10
Chlorobenzene	-	-	-	-	-	-	-	-	TM15/PM10
1,1,1,2-Tetrachloroethane	-	-	-	-	-	-	-	-	TM15/PM10
Ethylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
p/m-Xylene	-	-	-	-	-	-	-	-	TM15/PM10
o-Xylene	-	-	-	-	-	-	-	-	TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/76	06/76	06/76	06/76	06/76	06/76	06/76	06/76	Method No.
J E QC Sample No.	12	13	16	17	19	29	30	31	
QC Sample ID	QC 12	QC 13	QC 16	QC 17	QC 19	QC 29	QC 30	QC 31	
Styrene	-	-	-	-	-	-	-	-	TM15/PM10
Bromoform	-	-	-	-	-	-	-	-	TM15/PM10
Isopropylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
Bromobenzene	-	-	-	-	-	-	-	-	TM15/PM10
1,2,3-Trichloropropane	-	-	-	-	-	-	-	-	TM15/PM10
Propylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
2-Chlorotoluene	-	-	-	-	-	-	-	-	TM15/PM10
1,3,5-Trimethylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
4-Chlorotoluene	-	-	-	-	-	-	-	-	TM15/PM10
tert-Butylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
1,2,4-Trimethylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
sec-Butylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
4-Isopropyltoluene	-	-	-	-	-	-	-	-	TM15/PM10
1,3-Dichlorobenzene	-	-	-	-	-	-	-	-	TM15/PM10
1,4-Dichlorobenzene	-	-	-	-	-	-	-	-	TM15/PM10
n-Butylbenzene	-	-	-	-	-	-	-	-	TM15/PM10
1,2-Dichlorobenzene	-	-	-	-	-	-	-	-	TM15/PM10
EPH (C8-C40)	-	-	-	112.79 71 : 129	87.01 71 : 129	-	-	-	TM5/PM30
TPH CWG									
Aliphatics									
EPH (C8-C40)	-	-	-	-	-	-	-	-	TM5/PM30
GRO (>C4-C12)	72 65 : 133	104 65 : 133	-	-	-	-	-	-	TM36/PM12
MTBE	73 56 : 143	112 56 : 143	-	-	-	-	-	-	TM36/PM12
Benzene	69 63 : 132	108 63 : 132	-	-	-	-	-	-	TM36/PM12
Toluene	68 62 : 135	108 62 : 135	-	-	-	-	-	-	TM36/PM12
Ethylbenzene	68 62 : 133	106 62 : 133	-	-	-	-	-	-	TM36/PM12
m/p-Xylene	67 65 : 130	105 65 : 130	-	-	-	-	-	-	TM36/PM12
o-Xylene	69 64 : 133	105 64 : 133	-	-	-	-	-	-	TM36/PM12
>C5-C12	73 62 : 136	104 62 : 136	-	-	-	-	-	-	TM36/PM12

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/76	06/76	06/76	06/76	06/77	06/77	06/77		
J E QC Sample No.	32	35	43	45	3	9	35		Method No.
QC Sample ID	QC 32	QC 35	QC 43	QC 45	QC 3	QC 9	QC 35		
VOC MS									
Methyl Tertiary Butyl Ether	-	-	-	-	-	86.75 47.87 : 118.88	-		TM15/PM10
Chloromethane	-	-	-	-	-	59.85 53.81 : 144.59	-		TM15/PM10
Chloroethane	-	-	-	-	-	54.77 63.80 : 125.50	-		TM15/PM10
Trichlorofluoromethane	-	-	-	-	-	71.01 68.67 : 129.10	-		TM15/PM10
1,1-Dichloroethene (1,1 DCE)	-	-	-	-	-	73.93 65.12 : 125.77	-		TM15/PM10
Dichloromethane (DCM)	-	-	-	-	-	80.38 68.28 : 126.50	-		TM15/PM10
trans-1-2-Dichloroethene	-	-	-	-	-	80.05 68.86 : 121.48	-		TM15/PM10
1,1-Dichloroethane	-	-	-	-	-	83.49 68.99 : 121.84	-		TM15/PM10
cis-1-2-Dichloroethene	-	-	-	-	-	88.44 68.37 : 122.43	-		TM15/PM10
Bromochloromethane	-	-	-	-	-	99.82 70.74 : 125.84	-		TM15/PM10
Chloroform	-	-	-	-	-	97.78 73.90 : 123.15	-		TM15/PM10
1,1,1-Trichloroethane	-	-	-	-	-	90.86 68.67 : 123.18	-		TM15/PM10
1,1-Dichloropropene	-	-	-	-	-	93.62 70.88 : 120.02	-		TM15/PM10
Carbon tetrachloride	-	-	-	-	-	97.64 70.13 : 128.23	-		TM15/PM10
1,2-Dichloroethane	-	-	-	-	-	94.65 75.15 : 126.76	-		TM15/PM10
Benzene	-	-	-	-	-	77.73 72.87 : 120.94	-		TM15/PM10
Trichloroethene (TCE)	-	-	-	-	-	107.79 73.76 : 128.00	-		TM15/PM10
1,2-Dichloropropane	-	-	-	-	-	104.40 71.80 : 122.29	-		TM15/PM10
Dibromomethane	-	-	-	-	-	107.29 73.83 : 130.19	-		TM15/PM10
Bromodichloromethane	-	-	-	-	-	109.73 74.51 : 125.02	-		TM15/PM10
Toluene	-	-	-	-	-	113.10 75.47 : 120.91	-		TM15/PM10
1,1,2-Trichloroethane	-	-	-	-	-	110.53 74.10 : 128.57	-		TM15/PM10
Tetrachloroethene (PCE)	-	-	-	-	-	113.59 74.41 : 122.72	-		TM15/PM10
1,3-Dichloropropane	-	-	-	-	-	115.84 74.31 : 126.10	-		TM15/PM10
Dibromochloromethane	-	-	-	-	-	114.83 71.65 : 130.69	-		TM15/PM10
1,2-Dibromoethane	-	-	-	-	-	119.06 69.70 : 131.74	-		TM15/PM10
Chlorobenzene	-	-	-	-	-	112.48 79.81 : 121.59	-		TM15/PM10
1,1,1,2-Tetrachloroethane	-	-	-	-	-	115.76 76.92 : 125.53	-		TM15/PM10
Ethylbenzene	-	-	-	-	-	99.05 77.36 : 119.74	-		TM15/PM10
p/m-Xylene	-	-	-	-	-	120.40 72.47 : 127.97	-		TM15/PM10
o-Xylene	-	-	-	-	-	112.50 77.48 : 121.90	-		TM15/PM10

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Jones Environmental Laboratory

Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report : Liquid
Type: AQC

J E QC Job No.	06/76	06/76	06/76	06/76	06/77	06/77	06/77		
J E QC Sample No.	32	35	43	45	3	9	35		Method No.
QC Sample ID	QC 32	QC 35	QC 43	QC 45	QC 3	QC 9	QC 35		
Styrene	-	-	-	-	-	129.97 61.71 : 149.24	-		TM15/PM10
Bromoform	-	-	-	-	-	111.65 73.08 : 137.15	-		TM15/PM10
Isopropylbenzene	-	-	-	-	-	106.99 79.03 : 122.86	-		TM15/PM10
Bromobenzene	-	-	-	-	-	113.08 77.03 : 124.37	-		TM15/PM10
1,2,3-Trichloropropane	-	-	-	-	-	91.28 78.43 : 133.90	-		TM15/PM10
Propylbenzene	-	-	-	-	-	85.94 78.51 : 123.36	-		TM15/PM10
2-Chlorotoluene	-	-	-	-	-	87.17 79.51 : 121.23	-		TM15/PM10
1,3,5-Trimethylbenzene	-	-	-	-	-	112.60 81.61 : 123.61	-		TM15/PM10
4-Chlorotoluene	-	-	-	-	-	113.98 77.98 : 125.72	-		TM15/PM10
tert-Butylbenzene	-	-	-	-	-	96.90 69.67 : 131.49	-		TM15/PM10
1,2,4-Trimethylbenzene	-	-	-	-	-	113.73 83.44 : 123.36	-		TM15/PM10
sec-Butylbenzene	-	-	-	-	-	116.09 80.66 : 127.20	-		TM15/PM10
4-Isopropyltoluene	-	-	-	-	-	106.53 80.37 : 128.81	-		TM15/PM10
1,3-Dichlorobenzene	-	-	-	-	-	109.89 84.09 : 127.57	-		TM15/PM10
1,4-Dichlorobenzene	-	-	-	-	-	109.16 84.93 : 127.04	-		TM15/PM10
n-Butylbenzene	-	-	-	-	-	117.39 66.20 : 138.56	-		TM15/PM10
1,2-Dichlorobenzene	-	-	-	-	-	114.70 83.10 : 131.82	-		TM15/PM10
EPH (C8-C40)	-	-	-	-	-	-	-		TM5/PM30
TPH CWG									
Aliphatics									
EPH (C8-C40)	-	-	-	-	87.93 :	105.22 :	-		TM5/PM30
GRO (>C4-C12)	-	-	-	-	-	-	-		TM36/PM12
MTBE	-	-	-	-	-	-	-		TM36/PM12
Benzene	-	-	-	-	-	-	-		TM36/PM12
Toluene	-	-	-	-	-	-	-		TM36/PM12
Ethylbenzene	-	-	-	-	-	-	-		TM36/PM12
m/p-Xylene	-	-	-	-	-	-	-		TM36/PM12
o-Xylene	-	-	-	-	-	-	-		TM36/PM12
>C5-C12	-	-	-	-	-	-	-		TM36/PM12

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report : Liquid
Type: AQC

[illegible]

The figure in bold is the percentage recovery result for the AQC associated with the samples. The subscript numbers are the lower and upper control limits expressed as a percentage. The percentage recovery result for the AQC should be between these limits to be statistically in control.

Client Name: Worley Parsons
Reference: 51603.00
Location: TOTTENHAM MARSHES
Contact: Philip Harrison

Report Liquid
Type: BLANK

[illegible]

Where analysis is blank corrected, blank data, although available, is not routinely supplied.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 13/4761

SOILS

Please note we are only MCERTS accredited 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 we are instructed to keep samples, a storage charge of £1 (1.5 Euros) per sample per month will be applied until we are asked to dispose of them.

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.

WATERS

Please note we are not a Drinking Water Inspectorate (DWI) Approved Laboratory. It is important that detection limits are carefully considered when requesting water analysis.

UKAS accreditation applies to surface water and groundwater and 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

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

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.

NOTE

Data is only accredited when all the requirements of our Quality System have been met. In certain circumstances where the requirements have not been met, the laboratory may issue the data in an interim report but will remove the accreditation, in this instance results should be considered indicative only. Where possible samples will be re-extracted and a final 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.

ABBREVIATIONS and ACRONYMS USED

#	UKAS accredited.
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 a Jones Environmental approved laboratory.
CO	Suspected carry over
OC	Outside Calibration Range
NFD	No Fibres Detected

JE Job No 13/4761

[illegible]

Summary of Chemical Analysis
Groundwater Samples

Groundwater Samples				Lab Sample No		UK OWs (mg/l)											
				Sample Type		Monitoring Point											
				Sampling round		Borehole ID											
				Borehole ID		UK OWs (mg/l)											
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0 0.3209

F.1.4 WAC analysis results

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 18-29456
Client Ref PC187331
Contract Title Tottenham Substation GI
Sample Id MMWS02 0.50

Sample Numbers 1436824 1436834
Date Analysed 21/12/2018

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	22
DETSC 2003# Loss On Ignition	%	19
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	95
DETSC 3301 PAHs	mg/kg	8.5
DETSC 2008# pH	pH Units	8.9
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	0.88	< 0.01
DETSC 2306 Barium as Ba	25	0.2
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	0.41	< 0.1
DETSC 2306 Copper as Cu	6.1	0.06
DETSC 2306 Mercury as Hg	0.04	< 0.002
DETSC 2306 Molybdenum as Mo	2.6	< 0.1
DETSC 2306 Nickel as Ni	0.9	< 0.1
DETSC 2306 Lead as Pb	2.6	< 0.05
DETSC 2306 Antimony as Sb	4.7	< 0.05
DETSC 2306 Selenium as Se	0.28	< 0.03
DETSC 2306 Zinc as Zn	18	0.18
DETSC 2055 Chloride as Cl	1000	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	2500	< 100
DETSC 2009* Total Dissolved Solids	94000	940
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	3900	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	135
* Temperature*	15

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.101
Stage 1	
Volume of Leachant L2*	0.996
Volume of Eluate VE1*	0.88

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
Values are correct at time of issue.

* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 18-29456
Client Ref PC187331
Contract Title Tottenham Substation GI
Sample Id MMWS01 0.30

Sample Numbers 1436826 1436835
Date Analysed 21/12/2018

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	10
DETSC 2003# Loss On Ignition	%	17
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	120
DETSC 3301 PAHs	mg/kg	34
DETSC 2008# pH	pH Units	6.3
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	3.6	0.04
DETSC 2306 Barium as Ba	5.1	< 0.1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	1.2	< 0.02
DETSC 2306 Mercury as Hg	0.03	< 0.002
DETSC 2306 Molybdenum as Mo	1.8	< 0.1
DETSC 2306 Nickel as Ni	1.5	< 0.1
DETSC 2306 Lead as Pb	0.96	< 0.05
DETSC 2306 Antimony as Sb	1.1	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	3.3	0.03
DETSC 2055 Chloride as Cl	930	< 100
DETSC 2055* Fluoride as F	< 100	< 0.1
DETSC 2055 Sulphate as SO4	13000	130
DETSC 2009* Total Dissolved Solids	23000	230
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	4100	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	6.7
DETSC 2009 Conductivity uS/cm	32.5
* Temperature*	15
Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.096
Stage 1	
Volume of Leachant L2*	0.937
Volume of Eluate VE1*	0.9

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 18-29456
Client Ref PC187331
Contract Title Tottenham Substation GI
Sample Id MMWS01 6.50

Sample Numbers 1436829 1436836
Date Analysed 02/01/2019

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	0.8
DETSC 2003# Loss On Ignition	%	1.6
DETSC 3321# BTEX	mg/kg	6.8
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	710
DETSC 3301 PAHs	mg/kg	280
DETSC 2008# pH	pH Units	8.2
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate		
Determinand and Method Reference	Conc in Eluate ug/l	Amount Leached* mg/kg
	10:1	LS10
DETSC 2306 Arsenic as As	3.7	0.04
DETSC 2306 Barium as Ba	1.6	< 0.1
DETSC 2306 Cadmium as Cd	< 0.03	< 0.02
DETSC 2306 Chromium as Cr	< 0.25	< 0.1
DETSC 2306 Copper as Cu	0.6	< 0.02
DETSC 2306 Mercury as Hg	0.02	< 0.002
DETSC 2306 Molybdenum as Mo	3	< 0.1
DETSC 2306 Nickel as Ni	1.3	< 0.1
DETSC 2306 Lead as Pb	0.56	< 0.05
DETSC 2306 Antimony as Sb	0.86	< 0.05
DETSC 2306 Selenium as Se	< 0.25	< 0.03
DETSC 2306 Zinc as Zn	1.3	0.01
DETSC 2055 Chloride as Cl	1600	< 100
DETSC 2055* Fluoride as F	170	1.7
DETSC 2055 Sulphate as SO4	13000	130
DETSC 2009* Total Dissolved Solids	48000	480
DETSC 2130 Phenol Index	< 100	< 1
* Dissolved Organic Carbon	3600	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	7.3
DETSC 2009 Conductivity uS/cm	68.7
* Temperature*	15
Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.100
Stage 1	
Volume of Leachant L2*	0.969
Volume of Eluate VE1*	0.91

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

Disclaimer: The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions.
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G. HazWaste Online Assessment

Waste Classification Report



BGVGY-JZ9XR-7EN7F

Job name

Tottenham substation (NLRP)

Description/Comments

Project

Site

Related Documents

#	Name	Description
None		

Waste Stream Template

MM standard waste stream for soils

Classified by

Name:
Hamza Saleh
Date:
17 Jan 2019 11:50 GMT
Telephone:
01223 463500

Company:
Mott MacDonald
22 station road
Cambridge
CB1 2JD

Report

Created by: Hamza Saleh
Created date: 17 Jan 2019 11:50 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	MMHA01	1.00	Non Hazardous		3
2	MMHA02	0.30	Non Hazardous		7
3	MMHA03	1.00	Hazardous	HP 14	9
4	MMHA03[1]	2.00	Non Hazardous		13
5	MMHA04	0.30	Non Hazardous		15
6	MMHA04[1]	1.50	Hazardous	HP 7, HP 14	19
7	MMWS02	0.50	Hazardous	HP 7, HP 14	22
8	MMWS02[1]	5.90	Non Hazardous		26
9	MMWS01	0.30	Non Hazardous		28
10	MMWS01[1]	1.00	Hazardous	HP 7, HP 14	32
11	MMWS01[2]	3.00	Non Hazardous		36
12	MMWS01[3]	6.50	Non Hazardous		40

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	44
Appendix B: Rationale for selection of metal species	47
Appendix C: Version	48

Classification of sample: MMHA01

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

Sample details

Sample Name:	LoW Code:	
MMHA01	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
1.00 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry 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	arsenic { arsenic trioxide }				44 mg/kg	1.32	58.094 mg/kg	0.00581 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	barium { barium oxide }				380 mg/kg	1.117	424.272 mg/kg	0.0424 %	✓	
		215-127-9	1304-28-5							
3	beryllium { beryllium oxide }				4.2 mg/kg	2.775	11.656 mg/kg	0.00117 %	✓	
	004-003-00-8	215-133-1	1304-56-9							
4	boron { diboron trioxide; boric oxide }				6 mg/kg	3.22	19.319 mg/kg	0.00193 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				0.4 mg/kg	1.142	0.457 mg/kg	0.0000457 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide }				20 mg/kg	1.462	29.231 mg/kg	0.00292 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
8	copper { dicopper oxide; copper (I) oxide }				610 mg/kg	1.126	686.792 mg/kg	0.0687 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	iron { iron (III) oxide }				24000 mg/kg	1.43	34313.876 mg/kg	3.431 %	✓	
		215-168-2	1309-37-1							
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	280 mg/kg		280 mg/kg	0.028 %	✓	
	082-001-00-6									
11	mercury { mercury dichloride }				0.63 mg/kg	1.353	0.853 mg/kg	0.0000853 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
12	nickel { nickel chromate }				48 mg/kg	2.976	142.861 mg/kg	0.0143 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
13	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1.1 mg/kg	2.554	2.809 mg/kg	0.000281 %	✓	
	034-002-00-8									
14	vanadium { divanadium pentaoxide; vanadium pentoxide }				57 mg/kg	1.785	101.756 mg/kg	0.0102 %	✓	
	023-001-00-8	215-239-8	1314-62-1							

#	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	zinc { zinc sulphate }				400	mg/kg	2.469	987.719	mg/kg	0.0988 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
16	pH				6.6	pH		6.6	pH	6.6 pH		
			PH									
17	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
18	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
19	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
20	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]									
21	naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
22	acenaphthylene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
		205-917-1	208-96-8									
23	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-469-6	83-32-9									
24	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-695-5	86-73-7									
25	phenanthrene				0.13	mg/kg		0.13	mg/kg	0.000013 %	✓	
		201-581-5	85-01-8									
26	anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
		204-371-1	120-12-7									
27	fluoranthene				0.38	mg/kg		0.38	mg/kg	0.000038 %	✓	
		205-912-4	206-44-0									
28	pyrene				0.43	mg/kg		0.43	mg/kg	0.000043 %	✓	
		204-927-3	129-00-0									
29	benzo[a]anthracene				0.37	mg/kg		0.37	mg/kg	0.000037 %	✓	
	601-033-00-9	200-280-6	56-55-3									
30	chrysene				0.44	mg/kg		0.44	mg/kg	0.000044 %	✓	
	601-048-00-0	205-923-4	218-01-9									
31	benzo[b]fluoranthene				0.66	mg/kg		0.66	mg/kg	0.000066 %	✓	
	601-034-00-4	205-911-9	205-99-2									
32	benzo[k]fluoranthene				0.34	mg/kg		0.34	mg/kg	0.000034 %	✓	
	601-036-00-5	205-916-6	207-08-9									
33	benzo[a]pyrene; benzo[def]chrysene				0.56	mg/kg		0.56	mg/kg	0.000056 %	✓	
	601-032-00-3	200-028-5	50-32-8									
34	indeno[123-cd]pyrene				0.31	mg/kg		0.31	mg/kg	0.000031 %	✓	
		205-893-2	193-39-5									
35	dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
36	benzo[ghi]perylene				0.32	mg/kg		0.32	mg/kg	0.000032 %	✓	
		205-883-8	191-24-2									
37	vinyl chloride; chloroethylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-023-00-7	200-831-0	75-01-4									
38	1,1-dichloroethylene; vinylidene chloride				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4									
39	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]									
40	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
41	2,2-dichloropropane	209-832-0	594-20-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
42	bromochloromethane	200-826-3	74-97-5		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
43	chloroform; trichloromethane	602-006-00-4	200-663-8	67-66-3	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
44	1,1,1-trichloroethane; methyl chloroform	602-013-00-2	200-756-3	71-55-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
45	1,1-dichloropropene	602-031-00-0	209-253-3	563-58-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
46	carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
47	1,2-dichloroethane; ethylene dichloride	602-012-00-7	203-458-1	107-06-2	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
48	trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
49	dibromomethane	602-003-00-8	200-824-2	74-95-3	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
50	bromodichloromethane	200-856-7	75-27-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
51	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
52	trans-1,3-dichloropropene	431-460-4	10061-02-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
53	1,1,2-trichloroethane	602-014-00-8	201-166-9	79-00-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
54	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
55	1,3-dichloropropane	205-531-3	142-28-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
56	dibromochloromethane	204-704-0	124-48-1		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
57	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
58	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
59	1,1,1,2-tetrachloroethane	211-135-1	630-20-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
60	styrene	601-026-00-0	202-851-5	100-42-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
61	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
62	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
63	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
64	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
65	tert-butylbenzene	202-632-4	98-06-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
66	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
67	sec-butylbenzene	205-227-0	135-98-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
68	4-isopropyltoluene	202-796-7	99-87-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value		MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number										
69		1,3-dichlorobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-067-00-7	208-792-1	541-73-1										
70		1,4-dichlorobenzene; p-dichlorobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-035-00-2	203-400-5	106-46-7										
71	●	n-butylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
			203-209-7	104-51-8										
72		1,2-dichlorobenzene; o-dichlorobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-034-00-7	202-425-9	95-50-1										
73		1,2-dibromo-3-chloropropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-021-00-6	202-479-3	96-12-8										
74		1,2,4-trichlorobenzene				0.02	mg/kg		0.02	mg/kg	0.000002 %	✓		
		602-087-00-6	204-428-0	120-82-1										
75	●	hexachlorobutadiene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
			201-765-5	87-68-3										
76	●	1,2,3-trichlorobenzene				0.06	mg/kg		0.06	mg/kg	0.000006 %	✓		
			201-757-1	87-61-6										
									Total:	3.707 %				

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: MMHA02

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

Sample details

Sample Name:	LoW Code:	
MMHA02	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.30 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

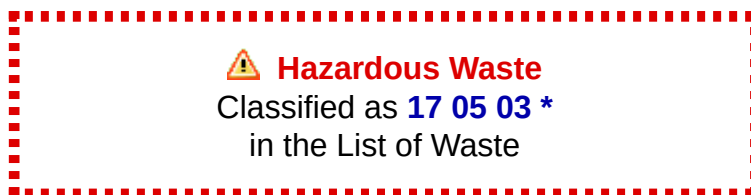
#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
1		arsenic { arsenic trioxide }				67	mg/kg	1.32	88.462	mg/kg	0.00885 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		barium { barium oxide }				490	mg/kg	1.117	547.088	mg/kg	0.0547 %	✓	
			215-127-9	1304-28-5									
3		beryllium { beryllium oxide }				3.9	mg/kg	2.775	10.824	mg/kg	0.00108 %	✓	
		004-003-00-8	215-133-1	1304-56-9									
4		boron { diboron trioxide; boric oxide }				4.2	mg/kg	3.22	13.523	mg/kg	0.00135 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
5		cadmium { cadmium oxide }				0.7	mg/kg	1.142	0.8	mg/kg	0.00008 %	✓	
		048-002-00-0	215-146-2	1306-19-0									
6		copper { dicopper oxide; copper (I) oxide }				240	mg/kg	1.126	270.213	mg/kg	0.027 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
7		iron { iron (III) oxide }				43000	mg/kg	1.43	61479.028	mg/kg	6.148 %	✓	
			215-168-2	1309-37-1									
8		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	400	mg/kg		400	mg/kg	0.04 %	✓	
		082-001-00-6											
9		mercury { mercury dichloride }				0.25	mg/kg	1.353	0.338	mg/kg	0.0000338 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
10		nickel { nickel chromate }				75	mg/kg	2.976	223.22	mg/kg	0.0223 %	✓	
		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	5.107	mg/kg	0.000511 %	✓	
		034-002-00-8											
12		vanadium { divanadium pentaoxide; vanadium pentoxide }				79	mg/kg	1.785	141.03	mg/kg	0.0141 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
13		zinc { zinc sulphate }				730	mg/kg	2.469	1802.586	mg/kg	0.18 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14		pH				6.9	pH		6.9	pH	6.9 pH		
				PH									

#	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	naphthalene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
16	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		205-917-1	208-96-8								
17	acenaphthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		201-469-6	83-32-9								
18	fluorene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		201-695-5	86-73-7								
19	phenanthrene				0.18 mg/kg		0.18 mg/kg	0.000018 %		✓	
		201-581-5	85-01-8								
20	anthracene				0.05 mg/kg		0.05 mg/kg	0.000005 %		✓	
		204-371-1	120-12-7								
21	fluoranthene				0.51 mg/kg		0.51 mg/kg	0.000051 %		✓	
		205-912-4	206-44-0								
22	pyrene				0.53 mg/kg		0.53 mg/kg	0.000053 %		✓	
		204-927-3	129-00-0								
23	benzo[a]anthracene				0.3 mg/kg		0.3 mg/kg	0.00003 %		✓	
	601-033-00-9	200-280-6	56-55-3								
24	chrysene				0.44 mg/kg		0.44 mg/kg	0.000044 %		✓	
	601-048-00-0	205-923-4	218-01-9								
25	benzo[b]fluoranthene				0.7 mg/kg		0.7 mg/kg	0.00007 %		✓	
	601-034-00-4	205-911-9	205-99-2								
26	benzo[k]fluoranthene				0.21 mg/kg		0.21 mg/kg	0.000021 %		✓	
	601-036-00-5	205-916-6	207-08-9								
27	benzo[a]pyrene; benzo[def]chrysene				0.43 mg/kg		0.43 mg/kg	0.000043 %		✓	
	601-032-00-3	200-028-5	50-32-8								
28	indeno[123-cd]pyrene				0.18 mg/kg		0.18 mg/kg	0.000018 %		✓	
		205-893-2	193-39-5								
29	dibenz[a,h]anthracene				0.07 mg/kg		0.07 mg/kg	0.000007 %		✓	
	601-041-00-2	200-181-8	53-70-3								
30	benzo[ghi]perylene				0.24 mg/kg		0.24 mg/kg	0.000024 %		✓	
		205-883-8	191-24-2								
Total:									6.499 %		

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: MMHA03



Sample details

Sample Name:	LoW Code:
MMHA03	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

dicopper oxide; copper (I) oxide: (compound conc.: 0.304%)

zinc sulphate: (compound conc.: 0.247%)

Determinands

Moisture content: 0% Dry 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	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	20 mg/kg	1.32	26.407 mg/kg	0.00264 %	✓	
2	barium { barium oxide }	215-127-9	1304-28-5		370 mg/kg	1.117	413.107 mg/kg	0.0413 %	✓	
3	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	1.5 mg/kg	2.775	4.163 mg/kg	0.000416 %	✓	
4	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2	2.9 mg/kg	3.22	9.338 mg/kg	0.000934 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	5.3 mg/kg	1.142	6.054 mg/kg	0.000605 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide }	215-160-9	1308-38-9		20 mg/kg	1.462	29.231 mg/kg	0.00292 %	✓	
7	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
8	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	2700 mg/kg	1.126	3039.898 mg/kg	0.304 %	✓	
9	iron { iron (III) oxide }	215-168-2	1309-37-1		17000 mg/kg	1.43	24305.662 mg/kg	2.431 %	✓	
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			660 mg/kg		660 mg/kg	0.066 %	✓	
11	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	0.76 mg/kg	1.353	1.029 mg/kg	0.000103 %	✓	
12	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7	28 mg/kg	2.976	83.335 mg/kg	0.00833 %	✓	

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
13	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %	✓	
	034-002-00-8											
14	vanadium { divanadium pentaoxide; vanadium pentoxide }				30	mg/kg	1.785	53.556	mg/kg	0.00536 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
15	zinc { zinc sulphate }				1000	mg/kg	2.469	2469.296	mg/kg	0.247 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
16	pH				7.9	pH		7.9	pH	7.9 pH		
			pH									
17	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
18	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
19	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
20	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]									
21	naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
22	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8									
23	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-469-6	83-32-9									
24	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-695-5	86-73-7									
25	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
		201-581-5	85-01-8									
26	anthracene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
		204-371-1	120-12-7									
27	fluoranthene				0.31	mg/kg		0.31	mg/kg	0.000031 %	✓	
		205-912-4	206-44-0									
28	pyrene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
		204-927-3	129-00-0									
29	benzo[a]anthracene				0.24	mg/kg		0.24	mg/kg	0.000024 %	✓	
	601-033-00-9	200-280-6	56-55-3									
30	chrysene				0.22	mg/kg		0.22	mg/kg	0.000022 %	✓	
	601-048-00-0	205-923-4	218-01-9									
31	benzo[b]fluoranthene				0.48	mg/kg		0.48	mg/kg	0.000048 %	✓	
	601-034-00-4	205-911-9	205-99-2									
32	benzo[k]fluoranthene				0.13	mg/kg		0.13	mg/kg	0.000013 %	✓	
	601-036-00-5	205-916-6	207-08-9									
33	benzo[a]pyrene; benzo[def]chrysene				0.34	mg/kg		0.34	mg/kg	0.000034 %	✓	
	601-032-00-3	200-028-5	50-32-8									
34	indeno[123-cd]pyrene				0.13	mg/kg		0.13	mg/kg	0.000013 %	✓	
		205-893-2	193-39-5									
35	dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
36	benzo[ghi]perylene				0.14	mg/kg		0.14	mg/kg	0.000014 %	✓	
		205-883-8	191-24-2									
37	vinyl chloride; chloroethylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-023-00-7	200-831-0	75-01-4									
38	1,1-dichloroethylene; vinylidene chloride				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
39	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]							
40	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3							
41	2,2-dichloropropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		209-832-0	594-20-7							
42	bromochloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		200-826-3	74-97-5							
43	chloroform; trichloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-006-00-4	200-663-8	67-66-3							
44	1,1,1-trichloroethane; methyl chloroform				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-013-00-2	200-756-3	71-55-6							
45	1,1-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-031-00-0	209-253-3	563-58-6							
46	carbon tetrachloride; tetrachloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-008-00-5	200-262-8	56-23-5							
47	1,2-dichloroethane; ethylene dichloride				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-012-00-7	203-458-1	107-06-2							
48	trichloroethylene; trichloroethene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-027-00-9	201-167-4	79-01-6							
49	dibromomethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-003-00-8	200-824-2	74-95-3							
50	bromodichloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		200-856-7	75-27-4							
51	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]							
52	trans-1,3-dichloropropene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		431-460-4	10061-02-6							
53	1,1,2-trichloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-014-00-8	201-166-9	79-00-5							
54	tetrachloroethylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-028-00-4	204-825-9	127-18-4							
55	1,3-dichloropropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		205-531-3	142-28-9							
56	dibromochloromethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		204-704-0	124-48-1							
57	1,2-dibromoethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-010-00-6	203-444-5	106-93-4							
58	chlorobenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-033-00-1	203-628-5	108-90-7							
59	1,1,1,2-tetrachloroethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
		211-135-1	630-20-6							
60	styrene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	601-026-00-0	202-851-5	100-42-5							
61	bromoform; tribromomethane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-007-00-X	200-854-6	75-25-2							
62	bromobenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-060-00-9	203-623-8	108-86-1							
63	1,2,3-trichloropropane				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-062-00-X	202-486-1	96-18-4							
64	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [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								
65	tert-butylbenzene	202-632-4	98-06-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
66	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
67	sec-butylbenzene	205-227-0	135-98-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
68	4-isopropyltoluene	202-796-7	99-87-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
69	1,3-dichlorobenzene	602-067-00-7	208-792-1	541-73-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
70	1,4-dichlorobenzene; p-dichlorobenzene	602-035-00-2	203-400-5	106-46-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
71	n-butylbenzene	203-209-7	104-51-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
72	1,2-dichlorobenzene; o-dichlorobenzene	602-034-00-7	202-425-9	95-50-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
73	1,2-dibromo-3-chloropropane	602-021-00-6	202-479-3	96-12-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
74	1,2,4-trichlorobenzene	602-087-00-6	204-428-0	120-82-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
75	hexachlorobutadiene	201-765-5	87-68-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
76	1,2,3-trichlorobenzene	201-757-1	87-61-6		0.01 mg/kg		0.01 mg/kg	0.000001 %		✓	
Total:									3.111 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Hazardous result
- 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: MMHA03[1]

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

Sample details

Sample Name:	LoW Code:	
MMHA03[1]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
2.00 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry 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	arsenic { arsenic trioxide }				21 mg/kg	1.32	27.727 mg/kg	0.00277 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	barium { barium oxide }				450 mg/kg	1.117	502.428 mg/kg	0.0502 %	✓	
		215-127-9	1304-28-5							
3	beryllium { beryllium oxide }				1.1 mg/kg	2.775	3.053 mg/kg	0.000305 %	✓	
	004-003-00-8	215-133-1	1304-56-9							
4	boron { diboron trioxide; boric oxide }				3.4 mg/kg	3.22	10.948 mg/kg	0.00109 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				0.2 mg/kg	1.142	0.228 mg/kg	0.0000228 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	copper { dicopper oxide; copper (I) oxide }				160 mg/kg	1.126	180.142 mg/kg	0.018 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	iron { iron (III) oxide }				43000 mg/kg	1.43	61479.028 mg/kg	6.148 %	✓	
		215-168-2	1309-37-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	700 mg/kg		700 mg/kg	0.07 %	✓	
	082-001-00-6									
9	mercury { mercury dichloride }				0.23 mg/kg	1.353	0.311 mg/kg	0.0000311 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	nickel { nickel chromate }				44 mg/kg	2.976	130.956 mg/kg	0.0131 %	✓	
	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 }				<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
	034-002-00-8									
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				86 mg/kg	1.785	153.526 mg/kg	0.0154 %	✓	
	023-001-00-8	215-239-8	1314-62-1							
13	zinc { zinc sulphate }				320 mg/kg	2.469	790.175 mg/kg	0.079 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
14	pH				7.9 pH		7.9 pH	7.9 pH		
			PH							

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value		M/C Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number										
15		naphthalene				0.03	mg/kg		0.03	mg/kg	0.000003 %	✓		
		601-052-00-2	202-049-5	91-20-3										
16	■	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
			205-917-1	208-96-8										
17	■	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
			201-469-6	83-32-9										
18	■	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
			201-695-5	86-73-7										
19	■	phenanthrene				0.07	mg/kg		0.07	mg/kg	0.000007 %	✓		
			201-581-5	85-01-8										
20	■	anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
			204-371-1	120-12-7										
21	■	fluoranthene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓		
			205-912-4	206-44-0										
22	■	pyrene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓		
			204-927-3	129-00-0										
23		benzo[a]anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %	✓		
		601-033-00-9	200-280-6	56-55-3										
24		chrysene				0.06	mg/kg		0.06	mg/kg	0.000006 %	✓		
		601-048-00-0	205-923-4	218-01-9										
25		benzo[b]fluoranthene				0.09	mg/kg		0.09	mg/kg	0.000009 %	✓		
		601-034-00-4	205-911-9	205-99-2										
26		benzo[k]fluoranthene				0.03	mg/kg		0.03	mg/kg	0.000003 %	✓		
		601-036-00-5	205-916-6	207-08-9										
27		benzo[a]pyrene; benzo[def]chrysene				0.06	mg/kg		0.06	mg/kg	0.000006 %	✓		
		601-032-00-3	200-028-5	50-32-8										
28	■	indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
			205-893-2	193-39-5										
29		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
		601-041-00-2	200-181-8	53-70-3										
30	■	benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD	
			205-883-8	191-24-2										
Total:											6.398 %			

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: MMHA04

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

Sample details

Sample Name:	LoW Code:	
MMHA04	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.30 m		

Hazard properties

None identified

Determinands

Moisture content: 0% Dry 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	arsenic { arsenic trioxide }				27 mg/kg	1.32	35.649 mg/kg	0.00356 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	barium { barium oxide }				300 mg/kg	1.117	334.952 mg/kg	0.0335 %	✓	
		215-127-9	1304-28-5							
3	beryllium { beryllium oxide }				2.3 mg/kg	2.775	6.383 mg/kg	0.000638 %	✓	
	004-003-00-8	215-133-1	1304-56-9							
4	boron { diboron trioxide; boric oxide }				2.6 mg/kg	3.22	8.372 mg/kg	0.000837 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				1.4 mg/kg	1.142	1.599 mg/kg	0.00016 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	chromium in chromium(III) compounds { chromium(III) oxide }				46 mg/kg	1.462	67.232 mg/kg	0.00672 %	✓	
		215-160-9	1308-38-9							
7	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
8	copper { dicopper oxide; copper (I) oxide }				220 mg/kg	1.126	247.695 mg/kg	0.0248 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
9	iron { iron (III) oxide }				34000 mg/kg	1.43	48611.324 mg/kg	4.861 %	✓	
		215-168-2	1309-37-1							
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	340 mg/kg		340 mg/kg	0.034 %	✓	
	082-001-00-6									
11	mercury { mercury dichloride }				1.6 mg/kg	1.353	2.166 mg/kg	0.000217 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
12	nickel { nickel chromate }				47 mg/kg	2.976	139.884 mg/kg	0.014 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
13	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1.5 mg/kg	2.554	3.83 mg/kg	0.000383 %	✓	
	034-002-00-8									
14	vanadium { divanadium pentaoxide; vanadium pentoxide }				84 mg/kg	1.785	149.956 mg/kg	0.015 %	✓	
	023-001-00-8	215-239-8	1314-62-1							

#	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	zinc { zinc sulphate }				440	mg/kg	2.469	1086.49	mg/kg	0.109 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
16	pH				7.6	pH		7.6	pH	7.6 pH		
			PH									
17	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
18	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
19	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
20	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]									
21	naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
22	acenaphthylene				0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
		205-917-1	208-96-8									
23	acenaphthene				0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
		201-469-6	83-32-9									
24	fluorene				0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
		201-695-5	86-73-7									
25	phenanthrene				1.2	mg/kg		1.2	mg/kg	0.00012 %	✓	
		201-581-5	85-01-8									
26	anthracene				0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
		204-371-1	120-12-7									
27	fluoranthene				2.7	mg/kg		2.7	mg/kg	0.00027 %	✓	
		205-912-4	206-44-0									
28	pyrene				2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
		204-927-3	129-00-0									
29	benzo[a]anthracene				0.84	mg/kg		0.84	mg/kg	0.000084 %	✓	
	601-033-00-9	200-280-6	56-55-3									
30	chrysene				0.88	mg/kg		0.88	mg/kg	0.000088 %	✓	
	601-048-00-0	205-923-4	218-01-9									
31	benzo[b]fluoranthene				1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
	601-034-00-4	205-911-9	205-99-2									
32	benzo[k]fluoranthene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
	601-036-00-5	205-916-6	207-08-9									
33	benzo[a]pyrene; benzo[def]chrysene				0.83	mg/kg		0.83	mg/kg	0.000083 %	✓	
	601-032-00-3	200-028-5	50-32-8									
34	indeno[123-cd]pyrene				0.27	mg/kg		0.27	mg/kg	0.000027 %	✓	
		205-893-2	193-39-5									
35	dibenz[a,h]anthracene				0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
	601-041-00-2	200-181-8	53-70-3									
36	benzo[ghi]perylene				0.32	mg/kg		0.32	mg/kg	0.000032 %	✓	
		205-883-8	191-24-2									
37	vinyl chloride; chloroethylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-023-00-7	200-831-0	75-01-4									
38	1,1-dichloroethylene; vinylidene chloride				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4									
39	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]									
40	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3									

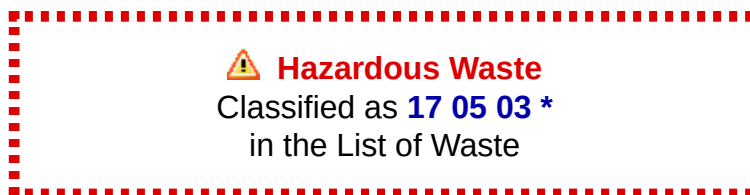
#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
41	2,2-dichloropropane	209-832-0	594-20-7		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
42	bromochloromethane	200-826-3	74-97-5		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
43	chloroform; trichloromethane	602-006-00-4	200-663-8	67-66-3	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
44	1,1,1-trichloroethane; methyl chloroform	602-013-00-2	200-756-3	71-55-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
45	1,1-dichloropropene	602-031-00-0	209-253-3	563-58-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
46	carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
47	1,2-dichloroethane; ethylene dichloride	602-012-00-7	203-458-1	107-06-2	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
48	trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
49	dibromomethane	602-003-00-8	200-824-2	74-95-3	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
50	bromodichloromethane	200-856-7	75-27-4		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
51	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
52	trans-1,3-dichloropropene	431-460-4	10061-02-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
53	1,1,2-trichloroethane	602-014-00-8	201-166-9	79-00-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
54	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
55	1,3-dichloropropane	205-531-3	142-28-9		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
56	dibromochloromethane	204-704-0	124-48-1		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
57	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
58	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
59	1,1,1,2-tetrachloroethane	211-135-1	630-20-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
60	styrene	601-026-00-0	202-851-5	100-42-5	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
61	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
62	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
63	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
64	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
65	tert-butylbenzene	202-632-4	98-06-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
66	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
67	sec-butylbenzene	205-227-0	135-98-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
68	4-isopropyltoluene	202-796-7	99-87-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value		MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number										
69		1,3-dichlorobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-067-00-7	208-792-1	541-73-1										
70		1,4-dichlorobenzene; p-dichlorobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-035-00-2	203-400-5	106-46-7										
71	●	n-butylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
			203-209-7	104-51-8										
72		1,2-dichlorobenzene; o-dichlorobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-034-00-7	202-425-9	95-50-1										
73		1,2-dibromo-3-chloropropane				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-021-00-6	202-479-3	96-12-8										
74		1,2,4-trichlorobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
		602-087-00-6	204-428-0	120-82-1										
75	●	hexachlorobutadiene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
			201-765-5	87-68-3										
76	●	1,2,3-trichlorobenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD	
			201-757-1	87-61-6										
Total:									5.105 %					

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: MMHA04[1]



Sample details

Sample Name:	LoW Code:
MMHA04[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.50 m	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.29%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

dicopper oxide; copper (I) oxide: (compound conc.: 0.473%)

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.29%)

zinc sulphate: (compound conc.: 0.716%)

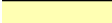
Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

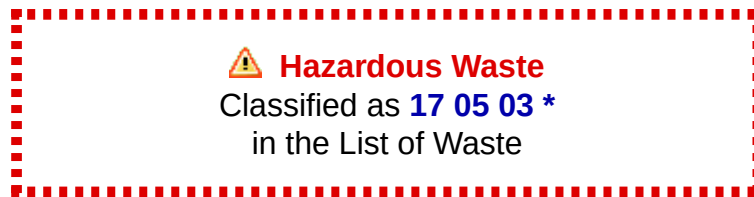
#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				70 mg/kg	1.32	92.423 mg/kg	0.00924 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	barium { barium oxide }				97 mg/kg	1.117	108.301 mg/kg	0.0108 %	✓	
		215-127-9	1304-28-5							
3	beryllium { beryllium oxide }				5.2 mg/kg	2.775	14.432 mg/kg	0.00144 %	✓	
	004-003-00-8	215-133-1	1304-56-9							
4	boron { diboron trioxide; boric oxide }				20 mg/kg	3.22	64.398 mg/kg	0.00644 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
5	cadmium { cadmium oxide }				5.9 mg/kg	1.142	6.74 mg/kg	0.000674 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
6	copper { dicopper oxide; copper (I) oxide }				4200 mg/kg	1.126	4728.731 mg/kg	0.473 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
7	iron { iron (III) oxide }				56000 mg/kg	1.43	80065.71 mg/kg	8.007 %	✓	
		215-168-2	1309-37-1							
8	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	2900 mg/kg		2900 mg/kg	0.29 %	✓	
	082-001-00-6									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
9	mercury { mercury dichloride }				7.3	mg/kg	1.353	9.88	mg/kg	0.000988 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	nickel { nickel chromate }				180	mg/kg	2.976	535.728	mg/kg	0.0536 %	✓	
	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 }				1.3	mg/kg	2.554	3.32	mg/kg	0.000332 %	✓	
	034-002-00-8											
12	vanadium { divanadium pentaoxide; vanadium pentoxide }				87	mg/kg	1.785	155.311	mg/kg	0.0155 %	✓	
	023-001-00-8	215-239-8	1314-62-1									
13	zinc { zinc sulphate }				2900	mg/kg	2.469	7160.96	mg/kg	0.716 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14	pH				8.1	pH		8.1	pH	8.1 pH		
			PH									
15	asbestos				0.003	mg/kg		0.003	mg/kg	0.0000003 %	✓	
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
16	naphthalene				0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
	601-052-00-2	202-049-5	91-20-3									
17	acenaphthylene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
		205-917-1	208-96-8									
18	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-469-6	83-32-9									
19	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-695-5	86-73-7									
20	phenanthrene				0.28	mg/kg		0.28	mg/kg	0.000028 %	✓	
		201-581-5	85-01-8									
21	anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
		204-371-1	120-12-7									
22	fluoranthene				0.69	mg/kg		0.69	mg/kg	0.000069 %	✓	
		205-912-4	206-44-0									
23	pyrene				0.69	mg/kg		0.69	mg/kg	0.000069 %	✓	
		204-927-3	129-00-0									
24	benzo[a]anthracene				0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
	601-033-00-9	200-280-6	56-55-3									
25	chrysene				0.39	mg/kg		0.39	mg/kg	0.000039 %	✓	
	601-048-00-0	205-923-4	218-01-9									
26	benzo[b]fluoranthene				0.8	mg/kg		0.8	mg/kg	0.00008 %	✓	
	601-034-00-4	205-911-9	205-99-2									
27	benzo[k]fluoranthene				0.25	mg/kg		0.25	mg/kg	0.000025 %	✓	
	601-036-00-5	205-916-6	207-08-9									
28	benzo[a]pyrene; benzo[def]chrysene				0.45	mg/kg		0.45	mg/kg	0.000045 %	✓	
	601-032-00-3	200-028-5	50-32-8									
29	indeno[123-cd]pyrene				0.22	mg/kg		0.22	mg/kg	0.000022 %	✓	
		205-893-2	193-39-5									
30	dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
31	benzo[ghi]perylene				0.26	mg/kg		0.26	mg/kg	0.000026 %	✓	
		205-883-8	191-24-2									
Total:										9.585 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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: MMWS02



Sample details

Sample Name:	LoW Code:
MMWS02	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.11%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

dicopper oxide; copper (I) oxide: (compound conc.: 0.135%)

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.11%)

zinc sulphate: (compound conc.: 0.321%)

Determinands

Moisture content: 0% Dry 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	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	39	mg/kg	1.32	51.493	mg/kg	0.00515 %	✓	
2	barium { barium oxide }	215-127-9	1304-28-5		820	mg/kg	1.117	915.535	mg/kg	0.0916 %	✓	
3	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	2.8	mg/kg	2.775	7.771	mg/kg	0.000777 %	✓	
4	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2	3.8	mg/kg	3.22	12.236	mg/kg	0.00122 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	2.7	mg/kg	1.142	3.084	mg/kg	0.000308 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide }	215-160-9	1308-38-9		38	mg/kg	1.462	55.539	mg/kg	0.00555 %	✓	
7	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
8	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	1200	mg/kg	1.126	1351.066	mg/kg	0.135 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
9		iron {  iron (III) oxide }				34000	mg/kg	1.43	48611.324	mg/kg	4.861 %	✓	
			215-168-2	1309-37-1									
10		lead {  lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	1100	mg/kg		1100	mg/kg	0.11 %	✓	
		082-001-00-6											
11		mercury { mercury dichloride }				1.2	mg/kg	1.353	1.624	mg/kg	0.000162 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
12		nickel { nickel chromate }				49	mg/kg	2.976	145.837	mg/kg	0.0146 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %	✓	
		034-002-00-8											
14		vanadium { divanadium pentaoxide; vanadium pentoxide }				78	mg/kg	1.785	139.244	mg/kg	0.0139 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
15		zinc { zinc sulphate }				1300	mg/kg	2.469	3210.085	mg/kg	0.321 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
16		pH				8.9	pH		8.9	pH	8.9 pH		
				PH									
17		benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
18		toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
19		ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
20		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]									
21		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
22		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
23		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
24		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
25		phenanthrene				0.14	mg/kg		0.14	mg/kg	0.000014 %	✓	
			201-581-5	85-01-8									
26		anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
			204-371-1	120-12-7									
27		fluoranthene				0.32	mg/kg		0.32	mg/kg	0.000032 %	✓	
			205-912-4	206-44-0									
28		pyrene				0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
			204-927-3	129-00-0									
29		benzo[a]anthracene				0.18	mg/kg		0.18	mg/kg	0.000018 %	✓	
		601-033-00-9	200-280-6	56-55-3									
30		chrysene				0.19	mg/kg		0.19	mg/kg	0.000019 %	✓	
		601-048-00-0	205-923-4	218-01-9									
31		benzo[b]fluoranthene				0.32	mg/kg		0.32	mg/kg	0.000032 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32		benzo[k]fluoranthene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33		benzo[a]pyrene; benzo[def]chrysene				0.16	mg/kg		0.16	mg/kg	0.000016 %	✓	
		601-032-00-3	200-028-5	50-32-8									
34		indeno[123-cd]pyrene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
			205-893-2	193-39-5									
35		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
36	benzo[ghi]perylene	205-883-8	191-24-2		0.13	mg/kg		0.13	mg/kg	0.000013 %	✓	
37	vinyl chloride; chloroethylene	602-023-00-7	200-831-0	75-01-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
38	1,1-dichloroethylene; vinylidene chloride	602-025-00-8	200-864-0	75-35-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
39	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
40	1,1-dichloroethane and 1,2-dichloroethane (combined)	203-458-1, 200-863-5	107-06-2, 75-34-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
41	2,2-dichloropropane	209-832-0	594-20-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
42	bromochloromethane	200-826-3	74-97-5		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
43	chloroform; trichloromethane	602-006-00-4	200-663-8	67-66-3	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
44	1,1,1-trichloroethane; methyl chloroform	602-013-00-2	200-756-3	71-55-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
45	1,1-dichloropropene	602-031-00-0	209-253-3	563-58-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
46	carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
47	1,2-dichloroethane; ethylene dichloride	602-012-00-7	203-458-1	107-06-2	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
48	trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
49	dibromomethane	602-003-00-8	200-824-2	74-95-3	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
50	bromodichloromethane	200-856-7	75-27-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
51	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
52	trans-1,3-dichloropropene	431-460-4	10061-02-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
53	1,1,2-trichloroethane	602-014-00-8	201-166-9	79-00-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
54	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
55	1,3-dichloropropane	205-531-3	142-28-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
56	dibromochloromethane	204-704-0	124-48-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
57	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
58	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
59	1,1,1,2-tetrachloroethane	211-135-1	630-20-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
60	styrene	601-026-00-0	202-851-5	100-42-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
61	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
62	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
63	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
64	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
65	tert-butylbenzene	202-632-4	98-06-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
66	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
67	sec-butylbenzene	205-227-0	135-98-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
68	4-isopropyltoluene	202-796-7	99-87-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
69	1,3-dichlorobenzene	602-067-00-7	208-792-1	541-73-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
70	1,4-dichlorobenzene; p-dichlorobenzene	602-035-00-2	203-400-5	106-46-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
71	n-butylbenzene	203-209-7	104-51-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
72	1,2-dichlorobenzene; o-dichlorobenzene	602-034-00-7	202-425-9	95-50-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
73	1,2-dibromo-3-chloropropane	602-021-00-6	202-479-3	96-12-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
74	1,2,4-trichlorobenzene	602-087-00-6	204-428-0	120-82-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
75	hexachlorobutadiene	201-765-5	87-68-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
76	1,2,3-trichlorobenzene	201-757-1	87-61-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
Total:									5.561 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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: MMWS02[1]

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

Sample details

Sample Name:	LoW Code:
MMWS02[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
5.90 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry 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		arsenic { arsenic trioxide }				15	mg/kg	1.32	19.805	mg/kg	0.00198 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		barium { barium oxide }				280	mg/kg	1.117	312.622	mg/kg	0.0313 %	✓	
			215-127-9	1304-28-5									
3		beryllium { beryllium oxide }				1.5	mg/kg	2.775	4.163	mg/kg	0.000416 %	✓	
		004-003-00-8	215-133-1	1304-56-9									
4		boron { diboron trioxide; boric oxide }				4.8	mg/kg	3.22	15.455	mg/kg	0.00155 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
5		cadmium { cadmium oxide }				0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %	✓	
		048-002-00-0	215-146-2	1306-19-0									
6		copper { dicopper oxide; copper (I) oxide }				76	mg/kg	1.126	85.568	mg/kg	0.00856 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
7		iron { iron (III) oxide }				40000	mg/kg	1.43	57189.793	mg/kg	5.719 %	✓	
			215-168-2	1309-37-1									
8		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	79	mg/kg		79	mg/kg	0.0079 %	✓	
		082-001-00-6											
9		mercury { mercury dichloride }				0.17	mg/kg	1.353	0.23	mg/kg	0.000023 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
10		nickel { nickel chromate }				42	mg/kg	2.976	125.003	mg/kg	0.0125 %	✓	
		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 }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
		034-002-00-8											
12		vanadium { divanadium pentaoxide; vanadium pentoxide }				73	mg/kg	1.785	130.319	mg/kg	0.013 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
13		zinc { zinc sulphate }				200	mg/kg	2.469	493.859	mg/kg	0.0494 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
14		pH				7.6	pH		7.6	pH	7.6 pH		
				pH									

#	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	naphthalene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
16	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8							
17	acenaphthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-469-6	83-32-9							
18	fluorene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-695-5	86-73-7							
19	phenanthrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		201-581-5	85-01-8							
20	anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-371-1	120-12-7							
21	fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-912-4	206-44-0							
22	pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		204-927-3	129-00-0							
23	benzo[a]anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
24	chrysene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
25	benzo[b]fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
26	benzo[k]fluoranthene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
27	benzo[a]pyrene; benzo[def]chrysene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
28	indeno[123-cd]pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-893-2	193-39-5							
29	dibenz[a,h]anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
30	benzo[ghi]perylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
		205-883-8	191-24-2							
Total:								5.846 %		

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: MMWS01

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

Sample details

Sample Name:	LoW Code:
MMWS01	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.30 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry 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	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	34	mg/kg	1.32	44.891	mg/kg	0.00449 %	✓	
2	barium { barium oxide }	215-127-9	1304-28-5		390	mg/kg	1.117	435.437	mg/kg	0.0435 %	✓	
3	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	2.8	mg/kg	2.775	7.771	mg/kg	0.000777 %	✓	
4	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2	4.5	mg/kg	3.22	14.489	mg/kg	0.00145 %	✓	
5	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	1.6	mg/kg	1.142	1.828	mg/kg	0.000183 %	✓	
6	chromium in chromium(III) compounds { chromium(III) oxide }	215-160-9	1308-38-9		51	mg/kg	1.462	74.539	mg/kg	0.00745 %	✓	
7	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
8	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	170	mg/kg	1.126	191.401	mg/kg	0.0191 %	✓	
9	iron { iron (III) oxide }	215-168-2	1309-37-1		43000	mg/kg	1.43	61479.028	mg/kg	6.148 %	✓	
10	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			450	mg/kg		450	mg/kg	0.045 %	✓	
11	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	1.2	mg/kg	1.353	1.624	mg/kg	0.000162 %	✓	
12	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7	50	mg/kg	2.976	148.813	mg/kg	0.0149 %	✓	
13	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			1.2	mg/kg	2.554	3.064	mg/kg	0.000306 %	✓	
14	vanadium { divanadium pentaoxide; vanadium pentoxide }	023-001-00-8	215-239-8	1314-62-1	97	mg/kg	1.785	173.163	mg/kg	0.0173 %	✓	

#	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	zinc { zinc sulphate }				570	mg/kg	2.469	1407.499	mg/kg	0.141 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
16	pH				6.3	pH		6.3	pH	6.3 pH		
			PH									
17	benzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
18	toluene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									
19	ethylbenzene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4									
20	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]									
21	naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
22	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		205-917-1	208-96-8									
23	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-469-6	83-32-9									
24	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		201-695-5	86-73-7									
25	phenanthrene				0.42	mg/kg		0.42	mg/kg	0.000042 %	✓	
		201-581-5	85-01-8									
26	anthracene				0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
		204-371-1	120-12-7									
27	fluoranthene				0.96	mg/kg		0.96	mg/kg	0.000096 %	✓	
		205-912-4	206-44-0									
28	pyrene				0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
		204-927-3	129-00-0									
29	benzo[a]anthracene				0.29	mg/kg		0.29	mg/kg	0.000029 %	✓	
	601-033-00-9	200-280-6	56-55-3									
30	chrysene				0.36	mg/kg		0.36	mg/kg	0.000036 %	✓	
	601-048-00-0	205-923-4	218-01-9									
31	benzo[b]fluoranthene				0.42	mg/kg		0.42	mg/kg	0.000042 %	✓	
	601-034-00-4	205-911-9	205-99-2									
32	benzo[k]fluoranthene				0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
	601-036-00-5	205-916-6	207-08-9									
33	benzo[a]pyrene; benzo[def]chrysene				0.22	mg/kg		0.22	mg/kg	0.000022 %	✓	
	601-032-00-3	200-028-5	50-32-8									
34	indeno[123-cd]pyrene				0.13	mg/kg		0.13	mg/kg	0.000013 %	✓	
		205-893-2	193-39-5									
35	dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
36	benzo[ghi]perylene				0.12	mg/kg		0.12	mg/kg	0.000012 %	✓	
		205-883-8	191-24-2									
37	vinyl chloride; chloroethylene				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-023-00-7	200-831-0	75-01-4									
38	1,1-dichloroethylene; vinylidene chloride				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-025-00-8	200-864-0	75-35-4									
39	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]									
40	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
41	2,2-dichloropropane	209-832-0	594-20-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
42	bromochloromethane	200-826-3	74-97-5		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
43	chloroform; trichloromethane	602-006-00-4	200-663-8	67-66-3	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
44	1,1,1-trichloroethane; methyl chloroform	602-013-00-2	200-756-3	71-55-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
45	1,1-dichloropropene	602-031-00-0	209-253-3	563-58-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
46	carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
47	1,2-dichloroethane; ethylene dichloride	602-012-00-7	203-458-1	107-06-2	0.01	mg/kg		0.01	mg/kg	0.000001 %	✓	
48	trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
49	dibromomethane	602-003-00-8	200-824-2	74-95-3	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
50	bromodichloromethane	200-856-7	75-27-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
51	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
52	trans-1,3-dichloropropene	431-460-4	10061-02-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
53	1,1,2-trichloroethane	602-014-00-8	201-166-9	79-00-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
54	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
55	1,3-dichloropropane	205-531-3	142-28-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
56	dibromochloromethane	204-704-0	124-48-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
57	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
58	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
59	1,1,1,2-tetrachloroethane	211-135-1	630-20-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
60	styrene	601-026-00-0	202-851-5	100-42-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
61	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
62	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
63	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
64	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
65	tert-butylbenzene	202-632-4	98-06-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
66	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
67	sec-butylbenzene	205-227-0	135-98-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
68	4-isopropyltoluene	202-796-7	99-87-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
69		1,3-dichlorobenzene 602-067-00-7 208-792-1 541-73-1				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
70		1,4-dichlorobenzene; p-dichlorobenzene 602-035-00-2 203-400-5 106-46-7				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
71	■	n-butylbenzene 									

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because HP 3 Flammable (first indent) can be discounted as this is a solid waste without a free draining liquid

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

1,2-dichloroethane; ethylene dichloride: (conc.: 1.0e-06%)

Classification of sample: MMWS01[1]

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample Name:	LoW Code:
MMWS01[1]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.19%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

lead compounds with the exception of those specified elsewhere in this Annex (worst case): (Note 1 conc.: 0.19%)

zinc sulphate: (compound conc.: 0.469%)

Determinands

Moisture content: 0% Dry 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	 arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3	58	mg/kg	1.32	76.579	mg/kg	0.00766 %	✓	
2	 barium { barium oxide }	215-127-9	1304-28-5		1400	mg/kg	1.117	1563.108	mg/kg	0.156 %	✓	
3	 beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9	2.9	mg/kg	2.775	8.048	mg/kg	0.000805 %	✓	
4	 boron { dicobalt trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2	3.6	mg/kg	3.22	11.592	mg/kg	0.00116 %	✓	
5	 cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0	2.9	mg/kg	1.142	3.313	mg/kg	0.000331 %	✓	
6	 chromium in chromium(III) compounds { chromium(III) oxide }	215-160-9	1308-38-9		45	mg/kg	1.462	65.77	mg/kg	0.00658 %	✓	
7	 chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
8	 copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	710	mg/kg	1.126	799.381	mg/kg	0.0799 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
9	 iron {  iron (III) oxide }				1	42000	mg/kg	1.43	60049.283	mg/kg	6.005 %	✓	
			215-168-2	1309-37-1									
10	 lead {  lead compounds with the exception of those specified elsewhere in this Annex (worst case) }				1	1900	mg/kg		1900	mg/kg	0.19 %	✓	
		082-001-00-6											
11	 mercury { mercury dichloride }				1	3.6	mg/kg	1.353	4.873	mg/kg	0.000487 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
12	 nickel { nickel chromate }				1	63	mg/kg	2.976	187.505	mg/kg	0.0188 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
13	 selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %	✓	
		034-002-00-8											
14	 vanadium { divanadium pentaoxide; vanadium pentoxide }				1	71	mg/kg	1.785	126.748	mg/kg	0.0127 %	✓	
		023-001-00-8	215-239-8	1314-62-1									
15	 zinc { zinc sulphate }				1	1900	mg/kg	2.469	4691.663	mg/kg	0.469 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
16	 pH				1	7.4	pH		7.4	pH	7.4 pH		
				PH									
17	 benzene				1	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
18	 toluene				1	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
19	 ethylbenzene				1	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
20	 xylene				1	<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]									
21	 naphthalene				1	0.3	mg/kg		0.3	mg/kg	0.00003 %	✓	
		601-052-00-2	202-049-5	91-20-3									
22	 acenaphthylene				1	0.12	mg/kg		0.12	mg/kg	0.000012 %	✓	
			205-917-1	208-96-8									
23	 acenaphthene				1	0.17	mg/kg		0.17	mg/kg	0.000017 %	✓	
			201-469-6	83-32-9									
24	 fluorene				1	0.17	mg/kg		0.17	mg/kg	0.000017 %	✓	
			201-695-5	86-73-7									
25	 phenanthrene				1	2.7	mg/kg		2.7	mg/kg	0.00027 %	✓	
			201-581-5	85-01-8									
26	 anthracene				1	0.65	mg/kg		0.65	mg/kg	0.000065 %	✓	
			204-371-1	120-12-7									
27	 fluoranthene				1	5.9	mg/kg		5.9	mg/kg	0.00059 %	✓	
			205-912-4	206-44-0									
28	 pyrene				1	5	mg/kg		5	mg/kg	0.0005 %	✓	
			204-927-3	129-00-0									
29	 benzo[a]anthracene				1	2.9	mg/kg		2.9	mg/kg	0.00029 %	✓	
		601-033-00-9	200-280-6	56-55-3									
30	 chrysene				1	2.6	mg/kg		2.6	mg/kg	0.00026 %	✓	
		601-048-00-0	205-923-4	218-01-9									
31	 benzo[b]fluoranthene				1	4.4	mg/kg		4.4	mg/kg	0.00044 %	✓	
		601-034-00-4	205-911-9	205-99-2									
32	 benzo[k]fluoranthene				1	1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
		601-036-00-5	205-916-6	207-08-9									
33	 benzo[a]pyrene; benzo[def]chrysene				1	3.4	mg/kg		3.4	mg/kg	0.00034 %	✓	
		601-032-00-3	200-028-5	50-32-8									
34	 indeno[123-cd]pyrene				1	1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
			205-893-2	193-39-5									
35	 dibenz[a,h]anthracene				1	0.38	mg/kg		0.38	mg/kg	0.000038 %	✓	
		601-041-00-2	200-181-8	53-70-3									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
36	benzo[ghi]perylene	205-883-8	191-24-2		1.6	mg/kg		1.6	mg/kg	0.00016 %	✓	
37	vinyl chloride; chloroethylene	602-023-00-7	200-831-0	75-01-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
38	1,1-dichloroethylene; vinylidene chloride	602-025-00-8	200-864-0	75-35-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
39	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
40	1,1-dichloroethane and 1,2-dichloroethane (combined)	203-458-1, 200-863-5	107-06-2, 75-34-3		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
41	2,2-dichloropropane	209-832-0	594-20-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
42	bromochloromethane	200-826-3	74-97-5		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
43	chloroform; trichloromethane	602-006-00-4	200-663-8	67-66-3	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
44	1,1,1-trichloroethane; methyl chloroform	602-013-00-2	200-756-3	71-55-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
45	1,1-dichloropropene	602-031-00-0	209-253-3	563-58-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
46	carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
47	1,2-dichloroethane; ethylene dichloride	602-012-00-7	203-458-1	107-06-2	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
48	trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
49	dibromomethane	602-003-00-8	200-824-2	74-95-3	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
50	bromodichloromethane	200-856-7	75-27-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
51	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
52	trans-1,3-dichloropropene	431-460-4	10061-02-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
53	1,1,2-trichloroethane	602-014-00-8	201-166-9	79-00-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
54	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
55	1,3-dichloropropane	205-531-3	142-28-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
56	dibromochloromethane	204-704-0	124-48-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
57	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
58	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
59	1,1,1,2-tetrachloroethane	211-135-1	630-20-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
60	styrene	601-026-00-0	202-851-5	100-42-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
61	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
62	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
63	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
64	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
65	tert-butylbenzene	202-632-4	98-06-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
66	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
67	sec-butylbenzene	205-227-0	135-98-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
68	4-isopropyltoluene	202-796-7	99-87-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
69	1,3-dichlorobenzene	602-067-00-7	208-792-1	541-73-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
70	1,4-dichlorobenzene; p-dichlorobenzene	602-035-00-2	203-400-5	106-46-7	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
71	n-butylbenzene	203-209-7	104-51-8		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
72	1,2-dichlorobenzene; o-dichlorobenzene	602-034-00-7	202-425-9	95-50-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
73	1,2-dibromo-3-chloropropane	602-021-00-6	202-479-3	96-12-8	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
74	1,2,4-trichlorobenzene	602-087-00-6	204-428-0	120-82-1	<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
75	hexachlorobutadiene	201-765-5	87-68-3		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
76	1,2,3-trichlorobenzene	201-757-1	87-61-6		<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
Total:									6.953 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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: MMWS01[2]

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

Sample details

Sample Name:	LoW Code:
MMWS01[2]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
3.00 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry 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		arsenic { arsenic trioxide }				18	mg/kg	1.32	23.766	mg/kg	0.00238 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		barium { barium oxide }				260	mg/kg	1.117	290.292	mg/kg	0.029 %	✓	
			215-127-9	1304-28-5									
3		beryllium { beryllium oxide }				0.8	mg/kg	2.775	2.22	mg/kg	0.000222 %	✓	
		004-003-00-8	215-133-1	1304-56-9									
4		boron { diboron trioxide; boric oxide }				3	mg/kg	3.22	9.66	mg/kg	0.000966 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
5		cadmium { cadmium oxide }				0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %	✓	
		048-002-00-0	215-146-2	1306-19-0									
6		chromium in chromium(III) compounds { chromium(III) oxide }				20	mg/kg	1.462	29.231	mg/kg	0.00292 %	✓	
			215-160-9	1308-38-9									
7		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
8		copper { dicopper oxide; copper (I) oxide }				86	mg/kg	1.126	96.826	mg/kg	0.00968 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
9		iron { iron (III) oxide }				36000	mg/kg	1.43	51470.814	mg/kg	5.147 %	✓	
			215-168-2	1309-37-1									
10		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	490	mg/kg		490	mg/kg	0.049 %	✓	
		082-001-00-6											
11		mercury { mercury dichloride }				1.7	mg/kg	1.353	2.301	mg/kg	0.00023 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
12		nickel { nickel chromate }				21	mg/kg	2.976	62.502	mg/kg	0.00625 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
		034-002-00-8											
14		vanadium { divanadium pentaoxide; vanadium pentoxide }				36	mg/kg	1.785	64.267	mg/kg	0.00643 %	✓	
		023-001-00-8	215-239-8	1314-62-1									

#	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	zinc { zinc sulphate }				320 mg/kg	2.469	790.175 mg/kg	0.079 %		✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]								
16	pH				8.3 pH		8.3 pH	8.3 pH			
			PH								
17	benzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								
18	toluene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
19	ethylbenzene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
20	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]								
21	naphthalene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
22	acenaphthylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		205-917-1	208-96-8								
23	acenaphthene				0.12 mg/kg		0.12 mg/kg	0.000012 %		✓	
		201-469-6	83-32-9								
24	fluorene				0.08 mg/kg		0.08 mg/kg	0.000008 %		✓	
		201-695-5	86-73-7								
25	phenanthrene				0.28 mg/kg		0.28 mg/kg	0.000028 %		✓	
		201-581-5	85-01-8								
26	anthracene				0.07 mg/kg		0.07 mg/kg	0.000007 %		✓	
		204-371-1	120-12-7								
27	fluoranthene				0.74 mg/kg		0.74 mg/kg	0.000074 %		✓	
		205-912-4	206-44-0								
28	pyrene				0.73 mg/kg		0.73 mg/kg	0.000073 %		✓	
		204-927-3	129-00-0								
29	benzo[a]anthracene				0.22 mg/kg		0.22 mg/kg	0.000022 %		✓	
	601-033-00-9	200-280-6	56-55-3								
30	chrysene				0.26 mg/kg		0.26 mg/kg	0.000026 %		✓	
	601-048-00-0	205-923-4	218-01-9								
31	benzo[b]fluoranthene				0.29 mg/kg		0.29 mg/kg	0.000029 %		✓	
	601-034-00-4	205-911-9	205-99-2								
32	benzo[k]fluoranthene				0.1 mg/kg		0.1 mg/kg	0.00001 %		✓	
	601-036-00-5	205-916-6	207-08-9								
33	benzo[a]pyrene; benzo[def]chrysene				0.1 mg/kg		0.1 mg/kg	0.00001 %		✓	
	601-032-00-3	200-028-5	50-32-8								
34	indeno[123-cd]pyrene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		205-893-2	193-39-5								
35	dibenz[a,h]anthracene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
36	benzo[ghi]perylene				<0.03 mg/kg		<0.03 mg/kg	<0.000003 %			<LOD
		205-883-8	191-24-2								
37	vinyl chloride; chloroethylene				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-023-00-7	200-831-0	75-01-4								
38	1,1-dichloroethylene; vinylidene chloride				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-025-00-8	200-864-0	75-35-4								
39	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]								
40	1,1-dichloroethane and 1,2-dichloroethane (combined)				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %			<LOD
		203-458-1, 200-863-5	107-06-2, 75-34-3								

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
41	2,2-dichloropropane	209-832-0	594-20-7		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
42	bromochloromethane	200-826-3	74-97-5		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
43	chloroform; trichloromethane	602-006-00-4	200-663-8	67-66-3	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
44	1,1,1-trichloroethane; methyl chloroform	602-013-00-2	200-756-3	71-55-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
45	1,1-dichloropropene	602-031-00-0	209-253-3	563-58-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
46	carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
47	1,2-dichloroethane; ethylene dichloride	602-012-00-7	203-458-1	107-06-2	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
48	trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
49	dibromomethane	602-003-00-8	200-824-2	74-95-3	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
50	bromodichloromethane	200-856-7	75-27-4		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
51	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
52	trans-1,3-dichloropropene	431-460-4	10061-02-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
53	1,1,2-trichloroethane	602-014-00-8	201-166-9	79-00-5	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
54	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
55	1,3-dichloropropane	205-531-3	142-28-9		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
56	dibromochloromethane	204-704-0	124-48-1		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
57	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
58	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
59	1,1,1,2-tetrachloroethane	211-135-1	630-20-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
60	styrene	601-026-00-0	202-851-5	100-42-5	0.01	mg/kg		0.01	mg/kg	0.000001 %	✓	
61	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
62	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
63	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
64	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
65	tert-butylbenzene	202-632-4	98-06-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
66	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
67	sec-butylbenzene	205-227-0	135-98-8		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD
68	4-isopropyltoluene	202-796-7	99-87-6		<0.01	mg/kg		<0.01	mg/kg	<0.000001 %		<LOD

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
69		1,3-dichlorobenzene 602-067-00-7 208-792-1 541-73-1				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
70		1,4-dichlorobenzene; p-dichlorobenzene 602-035-00-2 203-400-5 106-46-7				<0.01 mg/kg		<0.01 mg/kg	<0.000001 %		<LOD
71	■	n-butylbenzene 									

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because HP 3 Flammable (first indent) can be discounted as this is a solid waste without a free draining liquid

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

styrene: (conc.: 1.0e-06%)

Classification of sample: MMWS01[3]

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

Sample details

Sample Name:	LoW Code:
MMWS01[3]	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
6.50 m	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry 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		arsenic { arsenic trioxide }				14	mg/kg	1.32	18.485	mg/kg	0.00185 %	✓	
		033-003-00-0	215-481-4	1327-53-3									
2		barium { barium oxide }				84	mg/kg	1.117	93.786	mg/kg	0.00938 %	✓	
			215-127-9	1304-28-5									
3		beryllium { beryllium oxide }				0.3	mg/kg	2.775	0.833	mg/kg	0.0000833 %	✓	
		004-003-00-8	215-133-1	1304-56-9									
4		boron { diboron trioxide; boric oxide }				1.8	mg/kg	3.22	5.796	mg/kg	0.00058 %	✓	
		005-008-00-8	215-125-8	1303-86-2									
5		cadmium { cadmium oxide }				0.1	mg/kg	1.142	0.114	mg/kg	0.0000114 %	✓	
		048-002-00-0	215-146-2	1306-19-0									
6		chromium in chromium(III) compounds { chromium(III) oxide }				13	mg/kg	1.462	19	mg/kg	0.0019 %	✓	
			215-160-9	1308-38-9									
7		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
8		copper { dicopper oxide; copper (I) oxide }				33	mg/kg	1.126	37.154	mg/kg	0.00372 %	✓	
		029-002-00-X	215-270-7	1317-39-1									
9		iron { iron (III) oxide }				15000	mg/kg	1.43	21446.172	mg/kg	2.145 %	✓	
			215-168-2	1309-37-1									
10		lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	95	mg/kg		95	mg/kg	0.0095 %	✓	
		082-001-00-6											
11		mercury { mercury dichloride }				0.11	mg/kg	1.353	0.149	mg/kg	0.0000149 %	✓	
		080-010-00-X	231-299-8	7487-94-7									
12		nickel { nickel chromate }				18	mg/kg	2.976	53.573	mg/kg	0.00536 %	✓	
		028-035-00-7	238-766-5	14721-18-7									
13		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
		034-002-00-8											
14		vanadium { divanadium pentaoxide; vanadium pentoxide }				20	mg/kg	1.785	35.704	mg/kg	0.00357 %	✓	
		023-001-00-8	215-239-8	1314-62-1									

#		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	 zinc { zinc sulphate }					140 mg/kg	2.469	345.701 mg/kg	0.0346 %	☒		
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
16	 pH					8.2 pH		8.2 pH	8.2 pH			
		PH										
17	benzene					<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-020-00-8	200-753-7	71-43-2									
18	toluene					<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	601-021-00-3	203-625-9	108-88-3									
19	 ethylbenzene					3.2 mg/kg		3.2 mg/kg	0.00032 %	☒		
	601-023-00-4	202-849-4	100-41-4									
20	xylene					3.6 mg/kg		3.6 mg/kg	0.00036 %	☒		
	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]									
21	naphthalene					590 mg/kg		590 mg/kg	0.059 %	☒		
	601-052-00-2	202-049-5	91-20-3									
22	 acenaphthylene					66 mg/kg		66 mg/kg	0.0066 %	☒		
		205-917-1	208-96-8									
23	 acenaphthene					100 mg/kg		100 mg/kg	0.01 %	☒		
		201-469-6	83-32-9									
24	 fluorene					86 mg/kg		86 mg/kg	0.0086 %	☒		
		201-695-5	86-73-7									
25	 phenanthrene					200 mg/kg		200 mg/kg	0.02 %	☒		
		201-581-5	85-01-8									
26	 anthracene					64 mg/kg		64 mg/kg	0.0064 %	☒		
		204-371-1	120-12-7									
27	 fluoranthene					53 mg/kg		53 mg/kg	0.0053 %	☒		
		205-912-4	206-44-0									
28	 pyrene					88 mg/kg		88 mg/kg	0.0088 %	☒		
		204-927-3	129-00-0									
29	benzo[a]anthracene					32 mg/kg		32 mg/kg	0.0032 %	☒		
	601-033-00-9	200-280-6	56-55-3									
30	chrysene					24 mg/kg		24 mg/kg	0.0024 %	☒		
	601-048-00-0	205-923-4	218-01-9									
31	benzo[b]fluoranthene					20 mg/kg		20 mg/kg	0.002 %	☒		
	601-034-00-4	205-911-9	205-99-2									
32	benzo[k]fluoranthene					6.9 mg/kg		6.9 mg/kg	0.00069 %	☒		
	601-036-00-5	205-916-6	207-08-9									
33	benzo[a]pyrene; benzo[def]chrysene					26 mg/kg		26 mg/kg	0.0026 %	☒		
	601-032-00-3	200-028-5	50-32-8									
34	 indeno[123-cd]pyrene					6 mg/kg		6 mg/kg	0.0006 %	☒		
		205-893-2	193-39-5									
35	dibenz[a,h]anthracene					1.9 mg/kg		1.9 mg/kg	0.00019 %	☒		
	601-041-00-2	200-181-8	53-70-3									
36	 benzo[ghi]perylene					5.4 mg/kg		5.4 mg/kg	0.00054 %	☒		
		205-883-8	191-24-2									
37	vinyl chloride; chloroethylene					<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	602-023-00-7	200-831-0	75-01-4									
38	1,1-dichloroethylene; vinylidene chloride					<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	602-025-00-8	200-864-0	75-35-4									
39	1,2-dichloroethylene; [1] cis-dichloroethylene; [2] trans-dichloroethylene [3]					<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
	602-026-00-3	208-750-2 [1] 205-859-7 [2] 205-860-2 [3]	540-59-0 [1] 156-59-2 [2] 156-60-5 [3]									
40	 1,1-dichloroethane and 1,2-dichloroethane (combined)					<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD	
		203-458-1, 200-863-5	107-06-2, 75-34-3									

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
41	2,2-dichloropropane	209-832-0	594-20-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
42	bromochloromethane	200-826-3	74-97-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
43	chloroform; trichloromethane	602-006-00-4	200-663-8	67-66-3	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
44	1,1,1-trichloroethane; methyl chloroform	602-013-00-2	200-756-3	71-55-6	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
45	1,1-dichloropropene	602-031-00-0	209-253-3	563-58-6	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
46	carbon tetrachloride; tetrachloromethane	602-008-00-5	200-262-8	56-23-5	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
47	1,2-dichloroethane; ethylene dichloride	602-012-00-7	203-458-1	107-06-2	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
48	trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
49	dibromomethane	602-003-00-8	200-824-2	74-95-3	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
50	bromodichloromethane	200-856-7	75-27-4		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
51	1,3-dichloropropene; [1] (Z)-1,3-dichloropropene [2]	602-030-00-5	208-826-5 [1] 233-195-8 [2]	542-75-6 [1] 10061-01-5 [2]	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
52	trans-1,3-dichloropropene	431-460-4	10061-02-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
53	1,1,2-trichloroethane	602-014-00-8	201-166-9	79-00-5	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
54	tetrachloroethylene	602-028-00-4	204-825-9	127-18-4	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
55	1,3-dichloropropane	205-531-3	142-28-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
56	dibromochloromethane	204-704-0	124-48-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
57	1,2-dibromoethane	602-010-00-6	203-444-5	106-93-4	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
58	chlorobenzene	602-033-00-1	203-628-5	108-90-7	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
59	1,1,1,2-tetrachloroethane	211-135-1	630-20-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
60	styrene	601-026-00-0	202-851-5	100-42-5	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
61	bromoform; tribromomethane	602-007-00-X	200-854-6	75-25-2	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
62	bromobenzene	602-060-00-9	203-623-8	108-86-1	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
63	1,2,3-trichloropropane	602-062-00-X	202-486-1	96-18-4	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
64	2-chlorotoluene; [1] 3-chlorotoluene; [2] 4-chlorotoluene; [3] chlorotoluene [4]	602-040-00-X	202-424-3 [1] 203-580-5 [2] 203-397-0 [3] 246-698-2 [4]	95-49-8 [1] 108-41-8 [2] 106-43-4 [3] 25168-05-2 [4]	<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
65	tert-butylbenzene	202-632-4	98-06-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
66	1,2,4-trimethylbenzene	601-043-00-3	202-436-9	95-63-6	1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
67	sec-butylbenzene	205-227-0	135-98-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
68	4-isopropyltoluene	202-796-7	99-87-6		0.13	mg/kg		0.13	mg/kg	0.000013 %	✓	

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number								
69		1,3-dichlorobenzene				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
		602-067-00-7	208-792-1	541-73-1								
70		1,4-dichlorobenzene; p-dichlorobenzene				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
		602-035-00-2	203-400-5	106-46-7								
71	■	n-butylbenzene				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
			203-209-7	104-51-8								
72		1,2-dichlorobenzene; o-dichlorobenzene				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
		602-034-00-7	202-425-9	95-50-1								
73		1,2-dibromo-3-chloropropane				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
		602-021-00-6	202-479-3	96-12-8								
74		1,2,4-trichlorobenzene				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
		602-087-00-6	204-428-0	120-82-1								
75	■	hexachlorobutadiene				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
			201-765-5	87-68-3								
76	■	1,2,3-trichlorobenzene				<0.1 mg/kg		<0.1 mg/kg		<0.00001 %		<LOD
			201-757-1	87-61-6								
								Total:	2.354 %			

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and ≤ 75°C"

Force this Hazardous property to non hazardous because HP 3 Flammable (first indent) can be discounted as this is a solid waste without a free draining liquid

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

ethylbenzene: (conc.: 0.00032%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

xylene: (conc.: 0.00036%)

1,2,4-trimethylbenzene: (conc.: 0.00015%)

4-isopropyltoluene: (conc.: 0.00001%)

Appendix A: Classifier defined and non CLP determinands

■ **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

■ **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

■ **iron (III) oxide** (EC Number: 215-168-2, CAS Number: 1309-37-1)

Conversion factor: 1.43

Description/Comments:

Data source: C&L Inventory, Registered Substances database, SDS: Sigma-Aldrich dated 19/09/2012 (REACH compliant)

Data source date: 21 May 2015

Hazard Statements: STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

■ **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

CLP index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 1; Carcinogenic to humans; Lead REACH Consortium considers some lead compounds Carcinogenic category 1A

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):

03 Jun 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium

www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **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

■ **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

▪ **1,1-dichloroethane and 1,2-dichloroethane (combined)** (EC Number: 203-458-1, 200-863-5, CAS Number: 107-06-2, 75-34-3)

Description/Comments: Combines the hazard statements and risk phrases for 1,1-dichloroethane and 1,2-dichloroethane
Data source: N/a
Data source date: 14 Oct 2016
Hazard Statements: Aquatic Chronic 3 H412 , Carc. 1B H350 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Acute Tox. 4 H302 , Flam. Liq. 2 H225

▪ **2,2-dichloropropane** (EC Number: 209-832-0, CAS Number: 594-20-7)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Eye Irrit. 2 H319 , Acute Tox. 4 H312 , Acute Tox. 4 H302 , Flam. Liq. 2 H225 , Acute Tox. 4 H332

▪ **bromochloromethane** (EC Number: 200-826-3, CAS Number: 74-97-5)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Ozone 1 H420 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Acute Tox. 4 H332 , Eye Dam. 1 H318 , Skin Corr. 1B H314 , Acute Tox. 4 H312

• **bromodichloromethane** (EC Number: 200-856-7, CAS Number: 75-27-4)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Repr. 1A H360 , Carc. 1B H350 , Muta. 1B H340 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Eye Dam. 1 H318 , Skin Irrit. 2 H315 , Acute Tox. 4 H302

• **trans-1,3-dichloropropene** (EC Number: 431-460-4, CAS Number: 10061-02-6)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Aquatic Chronic 1 H410 , STOT SE 3 H335 , Acute Tox. 4 H332 , Eye Irrit. 2 H319 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , Acute Tox. 3 H311 , Asp. Tox. 1 H304 , Acute Tox. 3 H301 , Flam. Liq. 3 H226

• **1,3-dichloropropane** (EC Number: 205-531-3, CAS Number: 142-28-9)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Flam. Liq. 3 H226 , Flam. Liq. 2 H225 , Acute Tox. 4 H332

• **dibromochloromethane** (EC Number: 204-704-0, CAS Number: 124-48-1)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 3;
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Aquatic Chronic 2 H411 , Muta. 2 H341 , STOT SE 3 H336 , STOT SE 3 H335 , Acute Tox. 4 H332 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Acute Tox. 4 H312 , Acute Tox. 4 H302

• **1,1,1,2-tetrachloroethane** (EC Number: 211-135-1, CAS Number: 630-20-6)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 2B;
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 3 H412 , Acute Tox. 4 H312 , Carc. 2 H351 , Acute Tox. 4 H332 , Eye Dam. 1 H318 , Acute Tox. 3 H331 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 4 H302

• **tert-butylbenzene** (EC Number: 202-632-4, CAS Number: 98-06-6)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Aquatic Chronic 2 H411 , Asp. Tox. 1 H304 , STOT SE 3 H335 , Acute Tox. 4 H332 , Acute Tox. 3 H331 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Flam. Liq. 3 H226

• **sec-butylbenzene** (EC Number: 205-227-0, CAS Number: 135-98-8)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Aquatic Chronic 2 H411 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

• **4-isopropyltoluene** (EC Number: 202-796-7, CAS Number: 99-87-6)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Aquatic Chronic 2 H411 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

• **n-butylbenzene** (EC Number: 203-209-7, CAS Number: 104-51-8)

Description/Comments: VOC; Data from C&L Inventory Database
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Flam. Liq. 3 H226

• **hexachlorobutadiene** (EC Number: 201-765-5, CAS Number: 87-68-3)

Description/Comments: VOC; Data from C&L Inventory Database; IARC considers substance Group 3;
Data source: <https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>
Data source date: 02 Mar 2017
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 2 H371 , Repr. 2 H361 , Carc. 2 H351 , Acute Tox. 2 H330 , Eye Irrit. 2 H319 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , Acute Tox. 2 H310 , Acute Tox. 3 H301

• **1,2,3-trichlorobenzene** (EC Number: 201-757-1, CAS Number: 87-61-6)

Description/Comments: VOC; Data from C&L Inventory Database

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

Data source date: 02 Mar 2017

Hazard Statements: Aquatic Chronic 3 H410 , Aquatic Acute 1 H400 , STOT SE 3 H336 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315 , Acute Tox. 4 H302

Appendix B: Rationale for selection of metal species

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

barium {barium oxide}

No significant quantities of Cr(VI) to form worst case species (barium chromate) therefore second worst case species chosen instead, based on hazard statements/molecular weight.

beryllium {beryllium oxide}

Reasonable case CLP species based on hazard statements/molecular weight. Industrial sources include: most common (non alloy) form, used in ceramics

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass

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. 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

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

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

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. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected

iron {iron (III) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Site not heavy industrial and as such, major source likely from natural strata

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

No significant quantities of Cr(VI) to form worst case species (lead chromate) therefore second worst case species chosen instead, based on hazard statements/molecular weight.

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight

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

Harmonised group entry used as most reasonable case. Pigment cadmium selenosulfide 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

vanadium {divanadium pentoxide; vanadium pentoxide}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc sulphate}

No significant quantities of Cr(VI) to form worst case species (zinc chromate) therefore second worst case species chosen instead, based on hazard statements/molecular weight.

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.1, May 2018**
HazWasteOnline Classification Engine Version: 2019.3.3745.7658 (03 Jan 2019)
HazWasteOnline Database: 2019.3.3745.7658 (03 Jan 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

H. Geotechnics Factual Report